

INNO-Policy TrendChart – Policy Trends and Appraisal Report

CZECH REPUBLIC

2008

PREFACE

Innovation is a priority of all Member States and of the European Commission. Throughout Europe, hundreds of policy measures and support schemes aimed at innovation have been implemented or are under preparation. The diversity of these measures and schemes reflects the diversity of the framework conditions, cultural preferences and political priorities in the Member States.

PRO INNO Europe is a new initiative of Directorate General Enterprise and Industry which aims to become the focal point for innovation policy analysis, learning and development in Europe, with a view to learning from the best and contributing to the development of new and better innovation policies in Europe. Run by the Innovation Policy Directorate of DG Enterprise and Industry, it pursues the collection, regular updating and analysis of information on innovation policies at national and European level.

The **INNO-Policy TrendChart** serves the 'open policy coordination approach' laid down by the Lisbon Council in March 2000. It supports organisation and scheme managers in Europe with summarised and concise information and statistics on innovation policies, performances and trends in the European Union (EU). It is also a European forum for benchmarking and the exchange of good practices in the area of innovation policy.

The INNO-Policy TrendChart products

The INNO-Policy TrendChart, previously TrendChart on Innovation, has been running since January 2000. It now tracks innovation policy developments in all 27 EU Member States, plus Iceland, Norway, Switzerland, Croatia, Turkey, Israel, Brazil, Canada, China, Japan, the USA and India. The INNO-Policy TrendChart website ⁽¹⁾ provides access to the following services and publications, as they become available:

- a database of innovation policy measures across 39 countries;
- a news service and related innovation policy information database;
- a 'who's who' of agencies and government departments involved in innovation;
- annual policy monitoring reports for all countries covered;
- an appraisal of the Lisbon National Reform Programme (NRP) and innovation by Member State (new separate publication in 2008)
- an annual synthesis report bringing together key points in the INNO-Policy TrendChart.

This document has been prepared within the framework of an initiative of the European Commission's Enterprise and Industry Directorate-General, Innovation Policy Development Unit. Official responsible: Cesar Santos (cesar.santos@ec.europa.eu).

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The report covers the period from September 2007 to September 2008. This year's report provides an overview and analyses on two focus themes: (1) policies in support of creativity and innovation, and (2) support of innovative start-ups including gazelles.

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¹ See: <http://www.proinno-europe.eu/index.cfm?fuseaction=page.display&topicID=52&parentID=52>

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Executive Summary

1. Introduction: Main Recent Trends in the National Innovation System

The economic growth of the Czech economy has been showing an outstanding dynamism since 2005. The year on year (YOY) growth rate in 2007 reached 6.6 %, which ranks the Czech Republic among the fastest growing European economies. The high dynamics of economic growth is reflected in the process of real convergence of the Czech economy to the EU-27 average. According to the Eurostat forecast, gross domestic product (GDP) per capita in purchasing power standards (PPS) reached 81.2 % of the EU-27 average at the end of 2007. Concerning demand, economic growth is especially affected by domestic absorption, whereas investment activity plays the most significant role. High investment activity, which is reflected in the high growth of the capital stock, has a positive influence on the dynamics of labour productivity growth. The aggregate labour productivity has been growing approximately 4.5 % a year since 2003, and reached 72.8 % of the EU-27 average in 2007.

Foreign direct investment (FDI) plays a significant role in the development of the Czech economy. A large amount of this investment, attracted especially by the industrial tradition, the qualified and price-competitive labour force and also the tradition in research and development (R&D), flow into manufacturing production (especially the automotive industry). However, considering the driving factors of FDI in the Czech Republic, this inflow is connected with an increasing risk of outflow after exploitation of the price-competitive factors. Therefore, the government has been placing greater emphasis on the improvement of the environment for knowledge creation and knowledge-based production. One of the main contributions in this respect is the recently approved *Reform of the Research, Development and Innovation System in the Czech Republic* (also referred to as the *Reform Plan*) which has begun to be adopted.

As for overall innovation performance, according to the European Innovation Scoreboard (EIS) 2007 Summary Innovation Index (SII), the Czech Republic has been ranked with the moderate innovators group, with an innovation index of 0.36 (below the EU-27 average). This figure signifies a slight overall increase in value over the last five years (0.34 for 2006, compared to 0.33 for 2005 and 2004, and 0.32 for 2003), with a high average growth rate. Together with Slovenia and Estonia, the Czech Republic is among the best performing new Member States, outperforming as many as four EU-15 countries (Spain, Portugal, Greece, and Italy).

At the level of the key dimensions of innovation performance in 2007, the Czech Republic ranks among the leading countries in 'Applications', especially in employment in medium- to high-tech manufacturing (ranked high in comparison to the EU-27 average) and sales of new-to-firm products (ranked medium-high). In the innovation & entrepreneurship and knowledge creation set of indicators, the Czech Republic holds an average position. On the other hand, the Czech Republic performs poorly in the set of innovation drivers (four out of five indicators are ranked medium-low) and especially in intellectual property (all indicators are ranked low, compared to the EU-27).

2. Major Innovation Challenges and Policy Responses

On the basis of the Czech Republic's position in the EIS 2007, as well as through analysis of its innovation environment, we have defined three main innovation challenges for the year 2008.

Challenge 1: Cooperation between public R&D and industry

The division between these two areas and the difficulties in their interconnection is considered the most significant shortcoming and challenge for the Czech Republic's innovation system. This broad concept of the challenge encompasses several particular problem areas:

- lack of motivation of either sphere to cooperate with the other as a result of an inappropriately adjusted system of evaluation of R&D in universities;

- badly and inadequately designed innovation infrastructure for cooperation between the two spheres;
- the previous point leads to industry having no interest in exploiting the public R&D results;
- this in turn results in poor transfer of R&D results into practice (as testified by the corresponding EIS indicators (within the intellectual property set)).

One of the main responses to this challenge is the law on public research institutions, transforming state-owned research institutions into public research institutions, which enables them to set up spin-offs. The law was passed, and came into effect in January 2007. The *Reform of the Research, Development and Innovation System in the Czech Republic*, which was approved by the government, introduced another opportunity for strengthening cooperation between public R&D and industry. In this respect, the evaluation system for public support of R&D should place more emphasis on collaborative R&D and financial participation of the private sector in joint research projects. Also, the Operational Programme 'Enterprise and Innovation' or OP EI (2007 – 2013) for drawing financing from the EU Structural Funds includes four programmes closely related to the transfer of R&D results into practice and intellectual property rights (IPR) issues, notably the following programmes: 'Potential' (Potencial — CZ 57), 'Cooperation' (Spoluprace — CZ 55), 'Prosperity' (Prosperita — CZ 53), and 'Innovation' (Inovace — CZ 59).

Challenge 2: Human resources for knowledge economy

Although human resources have been increasingly recognised as a crucial aspect of developing a knowledge economy in the long term, the Czech Republic has been struggling with the quality of human resources. This is reflected in low values of EIS indicators related to human resources: the number of S&E graduates, the percentage of population with tertiary education, and participation in lifelong learning. Within this challenge, several important issues are identified:

- the professional structure of graduates at both tertiary and secondary levels of education is unsatisfactory and their skills do not correspond to market demands;
- in the education system, the entrepreneurship spirit is poorly supported and enhanced;
- the system does not promote excellence among students as well as researchers;
- private subjects of the knowledge economy lack opportunities to influence education curriculums in universities in favour of the subjects that business most demands.

For the programming period 2007 to 2013, the Operational Programme 'Education for Competitiveness', drawing financing from the EU Structural Funds, was designed to be dedicated solely to improving the quality of human resources in the Czech Republic. Also, the National Innovation Policy or NIP (2005 – 2010) includes human resources among its strategic goals and its objectives concretely address human resources. Furthermore, the *White Paper on Tertiary Education*, which is currently being prepared, intends to improve the whole system of tertiary education. In this *White Paper*, all the issues mentioned above are being tackled.

Challenge 3: Financing research, development and innovation

Although financing of R&D and innovation remains an important challenge for policy actions, much effort has been made, especially in the context of the EU Structural Funds. Considering the remaining shortcomings, there is an unsuitable mechanism for financing innovation in the Czech Republic. International comparisons show that venture capital (VC) financing has not really developed in the Czech Republic (as also testified by the EIS indicator on early-stage VC). This situation has been exacerbated by the following shortcomings:

- low level of state support to R&D and innovation, and its overwhelming state of fragmentation (there are 22 providers of R&D and innovation support within the state administration);

- the lack of supporting or inhibiting legislation (e.g. double taxation occurring in VC funds has not been removed yet ⁽²⁾);
- low effectiveness of financial markets and their low level of development;
- undeveloped system of public private partnership (PPP), cooperation on the Triple Helix basis, and lack of business angels networks.

The *Reform of the Research, Development and Innovation System in the Czech Republic* document addresses these issues and proposes legislative changes to decrease the fragmentation of public support of R&D, and thus to cut the related administrative costs. In order to increase the effectiveness of financial support for industrial R&D, the reform plan proposes to place more emphasis on the support of joint public-private projects with financial participation of private resources. This measure should also increase the potential for an effective application of the research results in practice. The OP EI comprises programmes providing start-ups with financing through loans under favourable conditions, as well as subsidies and guarantees. The new initiative of the European Commission and the European Investment Bank 'Jeremie' is also projected to be utilised.

Summary table: innovation challenges, policy responses and impact

Challenge	Relevance of policy response	Evidence of impact
Cooperation between public R&D and Industry	4	2
Human Resources for Knowledge Economy	4	3
Financing Research, Development and Innovation	4	4

Policy response ranking scored from 1 to 5: (1) No specific measures addressing the challenge (possibly a debate but no evidence of any real policy development); (2) Policy development under way to respond to challenge (policy debate or design launched, e.g. announced in National Lisbon Reform Plan, etc.); (3) Specific measures existing for some time but insufficient to respond fully to challenge; (4) Existing measure plus one or more newly launched measures (during last 18 months); (5) A comprehensive set of measures which potentially responds fully to the challenge.

Evidence of impact scored from 1 to 5: (1) Trend for indicators has worsened since measure(s) introduced; (2) No observable change in trend since measure(s) introduced; (3) Too early to appraise (measures introduced in last 24 months); (4) Trend for indicators has improved since measure(s) introduced; (5) Evaluation or study indicates that the measure(s) has had clearly a positive effect on innovation performance in the country.

3. Innovation Governance and Policy Trends

3.1 Innovation governance

Innovation governance is formed by activities of various entities and stakeholders within the Czech innovation system, both from public administration and the private sector. However, the coordinating role in innovation issues on the level of state administration has not been assigned to any entity yet. As a current temporary solution, the R&D Council has been given the responsibility of coordinating implementation of the NIP (2005 – 2010). The other most significant public administration bodies are the Ministry of Industry and Trade and the Ministry of Education, Youth and Sports (MEYS), which are closest to innovation issues: the Ministry of Industry and Trade due to its competence regarding industry and business, and the Ministry of Education due to its competence regarding research.

Besides state support for innovation, the Ministry of Industry and Trade is in charge of the OP EI, which was approved by the European Commission in December 2007. This programme is the main policy tool for encouraging innovation activities of the Czech business sector. The OP EI subsidises development of infrastructure for industrial R&D (business research centres) and innovation (science parks, business incubators, etc.), and enhances the competitiveness of innovative companies (including IPR protection).

² The earnings are taxable at Private Equity fund level (15% withholding tax plus 21% corporate tax for capital gains) and again at the level of individual investors (Limited Partners) — (15% withholding tax plus corporate tax for capital gains with respect to investors' domiciles).

In addition, the MEYS is in charge of the Operational Programme 'Research and Development for Innovation' (OP RDI). The OP RDI will be focused mainly on strengthening research infrastructure at universities and public research institutions. Furthermore, this programme will place emphasis on stimulating their cooperation with the private sector, which should improve the transfer of knowledge between these sectors and ensure effective transformation of knowledge into innovation. The arrangement of OP RDI is still underway; the programme is expected to be launched by the end of 2008. Because of the clear synergies between the OP PI and the OP RDI, the common approach and coordination of actions between the Ministry of Industry and Trade and the MEYS are crucial.

3.2 Policy trends

A lot of effort has been made to formulate a reform framework for future actions towards improving the research, development and innovation system in the Czech Republic. This effort resulted in launching the *Reform of the Research, Development and Innovation System in the Czech Republic*, which was approved by the government in March 2008. This reform plan focuses particularly on the tasks of the NIP (2005 – 2010), which are summarised under the headline 'Make the State Administration's Performance in Research, Development and Innovation More Effective'. To fulfil these tasks, the *Reform Plan* aims generally to simplify and reorganise the system of R&D and innovation governance in order to make it more efficient, and to determine the state administration's responsibility for innovation policy.

It is assumed that financing efficiency will be increased by establishing the Technology Agency of the Czech Republic, which is expected to concentrate in one place the targeted funding of the applied (namely industrial) R&D, together with promotion of activities relevant to R&D and innovation.

Furthermore, the *Reform Plan* proposes partial steps to ensure an effective interconnection between industrial research and utilisation of its results in practice. It is expected that this will be achieved mainly by placing emphasis on evaluation of outputs and impacts of publicly funded R&D. To ensure the exploitation of industrial R&D results in innovation, public support is expected to be provided on the collaborative R&D projects of public research institutions (including universities) and industry.

New policy trends in support of innovation are also evident from the objectives and strategic orientation of the OP E. In comparison with the previous programming period, OP EI places more emphasis on implementation of new technologies, enhancement of technological and non-technological innovation activities, improvement of business support services connected with innovation activities and encouragement of IPR protection.

4. Conclusion: Future actions and opportunities for innovation policy

In the context of fulfilling particular tasks of the NIP, the expected future actions will be oriented particularly towards institutional changes in research, development and innovation governance. The new policy mix proposed in the *Reform of the Research, Development and Innovation System in the Czech Republic* should be more effective due to coordination of policy actions and the more intensive inclusion of the private sector in joint public-private research projects.

Currently, a new direction for innovation policy is being formulated. This policy will be embedded in the new *National Policy of Research, Development and Innovation in the Czech Republic* which will be elaborated in spring 2009. For the purpose of formulation of this new policy, the *Green Paper on R&D and Innovation* has been elaborated. The *Green Paper* aims to launch a public discussion on further actions required to increase the innovation-based competitiveness of the Czech economy. Results of the consequent public discussion are to be addressed by the set of actions defined in the *White Paper on R&D and Innovation*. The *White Paper* is currently underway. In addition, setting the new direction for RDI policy in the Czech Republic is accompanied by reform of the higher education system proposed in the *White Paper on Tertiary Education*.

1. Main Trends and Challenges in the National Innovation System

1.1 Recent Trends in Macroeconomic and Market Developments

The economic growth of the Czech economy has been showing an outstanding dynamism since 2005. The YOY growth rate in 2007 reached 6.6 %, which places the Czech Republic among the fastest growing European economies. The high dynamics of economic growth are reflected in the process of real convergence of the Czech economy to the EU-27 average. According to Eurostat, GDP per capita in PPS reached 81.2 % of the EU-27 average at the end of 2007.

On the demand side, economic growth is especially affected by domestic absorption, whereas investment activity plays the most significant role. High investment activity, which is reflected in the high growth of the capital stock, has a positive influence on the dynamics of labour productivity growth. The aggregate labour productivity has been growing approximately 4.5 % a year since 2003, and reached 72.8 % of the EU-27 average in 2007.

Although the saving rate remains relatively high, the increased investment activity led to a rise of the current account deficit to around 3.5 % of GDP in 2007 from about 3 % in 2006. However, the current account deficit remains largely financed by inflows of direct investment. The trade balance (exports minus imports) is continuously improving, especially on account of the high level of exports in the automobile and electronic sectors.

Foreign direct investment (FDI) plays a significant role in the development of the Czech economy. A major part of this investment flows into the manufacturing (especially the automotive) industry. The attraction for these investments is based on the industrial tradition, the qualified and price-competitive labour force and also the R&D tradition. However, considering the driving factors of FDI in the Czech Republic, this inflow is connected with increasing risk of their outflow after exploitation of the price-competitive factors (especially the relatively cheaper labour force). Therefore, the government has been placing greater emphasis on the improvement of the environment for knowledge creation and knowledge-based production. One of the main contributions in this respect is the recently approved *Reform of the Research, Development and Innovation System in the Czech Republic*, which has started to be adopted.

The unemployment rate has reflected the fast economic growth and has declined substantially over the past few years. Based on labour-force surveys, the unemployment rate was about 7 % in 2006 and has dropped off further to below 6 % in 2007, which is lower than both the EU-15 average and that of other countries in the region. However, long-term unemployment remains relatively high and makes up for about 50 % to 55 % of the total unemployment.

Price dynamics have changed substantially over the last year. In contrast to previous years when inflation remained at around 2.5 %, during 2007 it rose, to reach 7.5 % in January 2008. Although a significant part of this price development was caused by the single increase of the reduced VAT rate (from 5 % to 9 %) in January 2008, core inflation has risen, especially due to higher domestic demand accompanied by tightening labour markets, strong credit expansion, and rising food prices. The depreciation of the exchange rate during the first half of 2007 also contributed to higher inflation.

Fiscal policy in 2007 was expansionary even though strong economic growth resulted in a more favourable result of the state budget than expected. However, reform of the Czech fiscal policy remains the main challenge for coming years. In the short term, the priority is to reduce the government deficit below 3 % of GDP and thus to meet one of the fiscal Maastricht criteria. The longer-term challenge is to ensure a sustainable pension and healthcare system, which would reflect the expected demographic development. Therefore, fiscal policy will require substantial reform concerning government spending and taxation.

The overall competitiveness of the Czech Republic has improved in the years 2003 through 2006. According to the Global Competitiveness Index (GCI) issued by the World Economic Forum in 2006, the Czech Republic ranked 29th among 125 countries (the same position was achieved in 2005).

According to the International Institute for Management Development (IMD) Index published in the World Competitiveness Yearbook, the Czech Republic reached its best position (28th place) in 2006. However, the position of the Czech Republic worsened in 2007 in both international rankings (it fell to 32nd place in the GCI and to 33rd place in the IMD Index). The development of relative labour costs over the last five years indicates that the importance of factors other than those of competitive advantage that are cost based will increase. The hourly labour costs increased between 2000 and 2005 by more than 70 %: this was the fastest growth among EU-27 countries. A high dynamism of labour costs growth also prevailed in 2006 and 2007.

Exhibit 1: Comparable indicators of economic performance

Indicator	National performance		EU-27 average	
	2002	2007	2002	2007
GDP per capita in PPS (EU-27=100)	70.6	81.1 ^(f)	100	100
Real GDP growth rate (% change previous year)	1.9	5.8 ^(f)	1.2	2.9
Labour productivity per person employed (EU27=100)	63.1	72.9 ^(f)	100	100 ^(f)
Total employment growth (annual % change)	0.6	1.9 ^(^2006)	0.3	1.5 ^(^2006)
Inflation rate (average annual)	1.4	3.0	2.5	2.4
Unit labour costs (growth rate)	3.1	0.1 ^(f)	-0.4	-0.9
Public balance (net borrowing/lending) as a % of GDP	-6.8	-2.9 ^(^2006)	-2.5	-1.6 ^(^2006)
General government debt as a % of GDP	28.5	30.1 ^(^2006)	60.3	61.4 ^(^2006)
Unemployment rate (as % of active population)	7.3	5.3	8.9	7.1
Foreign direct investment intensity	11.3	4.2 ^(^2006)	:	1.4 ^(^2006)
Business investment as % of GDP	23.6	19.9 ^(f)	17.3	18.2 ^(^2006)

Source: Eurostat - Structural Indicators and Long-term Indicators.

Key: (*) EU-25 average, (^) or latest available year (for example: 2005); (:) not available; (f) forecast.

1.2 Recent Trends in the National Innovation Performance

According to the relative level of the real GDP per capita in PPP, the Czech Republic is in a transition phase from efficiency-driven competitiveness to innovation-driven competitiveness, which means that innovation factors will play a more significant role for Czech enterprises' competitive advantage in the very near future. Figures and trends of the national innovation performance are analysed in various sources, the EIS being one of the most significant ones. Unlike national analytical sources, the EIS enables international comparison.

According to the EIS 2007 SII, the Czech Republic has been ranked in the moderate innovators group with an innovation index of 0.36 (below the EU-27 average). This figure indicates a rather slight overall increase in value over the last five years (0.34 for 2006 compared to 0.33 for 2005 and 2004 and 0.32 for 2003), with a high average growth rate. Together with Slovenia and Estonia, the Czech Republic is among the best performing new Member States, outperforming as many as four EU-15 countries (Spain, Portugal, Greece, and Italy).

At the level of the key dimensions of innovation performance in 2007, the Czech Republic ranks among the leading countries in 'Applications', especially in employment in medium- to high-tech manufacturing (ranked high in comparison to EU27 average) and sales of new-to-firm products (ranked medium-high). In innovation & entrepreneurship and knowledge creation sets of indicators, the Czech Republic holds an average position. On the other hand, the Czech Republic performs poorly in the set of innovation drivers (four out of five indicators are ranked medium-low) and especially in intellectual property (all indicators are ranked low compared to the EU-27).

Innovation Drivers

Besides the value of the youth education attainment indicator (1.5), whose value is above average, all other indicators perform rather poorly in 2007, in comparison to the EU average. Especially the broadband penetration (1.3) and participation in lifelong learning (1.4) indicators' values are unsatisfactory. While the average YOY growth of broadband penetration rate (1.3) is high, (and therefore a further increase of the indicator's figure is expected in the next years), participation in lifelong learning (1.4) figures have remained at a constant level (58 % of the EU average in 2007 as well as 2006). The low and unsatisfactory rate of lifelong learning is one of the weakest points of the quality of human resources in the Czech Republic, as is mentioned in the *Green Paper on R&D and Innovation* ⁽³⁾.

Regarding the development of the indicator within this set of EIS indicators, the positive trend is that the figures for all indicators but 'Participation in Lifelong Learning' (1.4) have been constantly improving.

Knowledge Creation

EIS indicators within this indicator group place Czech Republic below the EU average. The Czech Republic holds the relatively strongest position in the share of medium-high/high-tech R&D (2.3); although the figure hasn't been calculated since 2005, it is estimated to reach the EU average. The relatively good position in the share of medium-high/high-tech R&D (2.3) is a consequence of high R&D expenditures especially in the following sectors: production of motor vehicles, production of and services for machinery, and production of chemicals and chemical products. R&D expenditures are especially high in the automobile manufacturing industry: 40 % of business R&D expenditures in manufacturing were spent in this branch in 2005 (latest figure), which corresponds to about 27 % of total business R&D expenditures in the Czech Republic.

As to the development of the indicators, R&D expenditures, both public and business (2.1 and 2.2, respectively) have shown a steady increase; however, their current position in comparison to the EU average is still low. There are no up-to-date figures for the indicator 'Enterprises receiving public funding'. The latest figure from 2004 ranked far below average (68 % of the EU average).

Innovation & Entrepreneurship

The Czech Republic has constantly been facing shortcomings in financing early-stage VC (3.4). Since 2004, the figures have been almost equal to zero and this trend of development is negative compared to the EU average. VC investments are negatively influenced not only by insufficient readiness of companies to receive the VC and by unwillingness of management to hand over control of the company, but also by a relatively high investment threshold and demands for company growth, requested by the investors ⁽⁴⁾. Nor does the Czech Republic have the benefit of a developed Business Angels network. For these reasons, financing of early-stage VC is incorporated into the three major innovation challenges in the Czech Republic.

On the other hand, the Czech Republic performs quite well in ICT Expenditures (3.5) with the figures more or less the same as the EU average. Other EIS indicators within this group, i.e. SMEs innovating in-house (3.1), innovative SMEs cooperating with others (3.2), innovation expenditures (3.3), and organisational innovation (3.6) were last calculated in 2004. Evaluation of their performance is thus to be found in Chapter 2.1.2 of the Czech Republic's *Country Report* for 2007.

Applications

This group of EIS indicators presents an innovation dimension in which the Czech Republic outperforms as many as three innovation leaders. The Czech Republic's standing is well above the EU average (156) especially in the medium-high/high-tech manufacturing employment indicator (4.5). Moreover, this figure has been constantly increasing since 2002. This is the result of the Czech Republic's traditional mid-tech and partly high-tech industrial orientation of its economy, with a high share of human resources. These manufacturing sectors concern especially the production of motor

³ Technology Centre AS Czech Republic (2008): *Green Paper on Research, Development and Innovation in the Czech Republic*. Currently available (in Czech only) at <http://forum.tc.cz/> online.

⁴ Ministry for the Regional Development of the Czech Republic (2005): *Final Report of the Project on CSF Evaluation 4/04: Barriers to the Growth of Competitiveness of the Czech Republic*. Available at <http://www.strukturalni-fondy.cz/evaluace/bariery-rustu-konkurenceschopnosti-cr> online.

vehicles, the production of chemicals and chemical products, the production of machinery and equipment, and the production of electrical equipment and devices. Because of the prevailing orientation towards mid-tech production, the indicator of high-tech product exports (4.2) ranks below the EU average (76 in 2006).

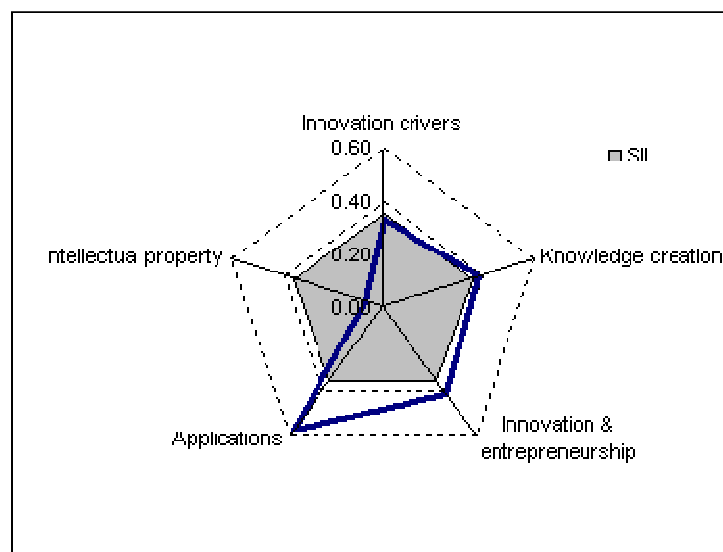
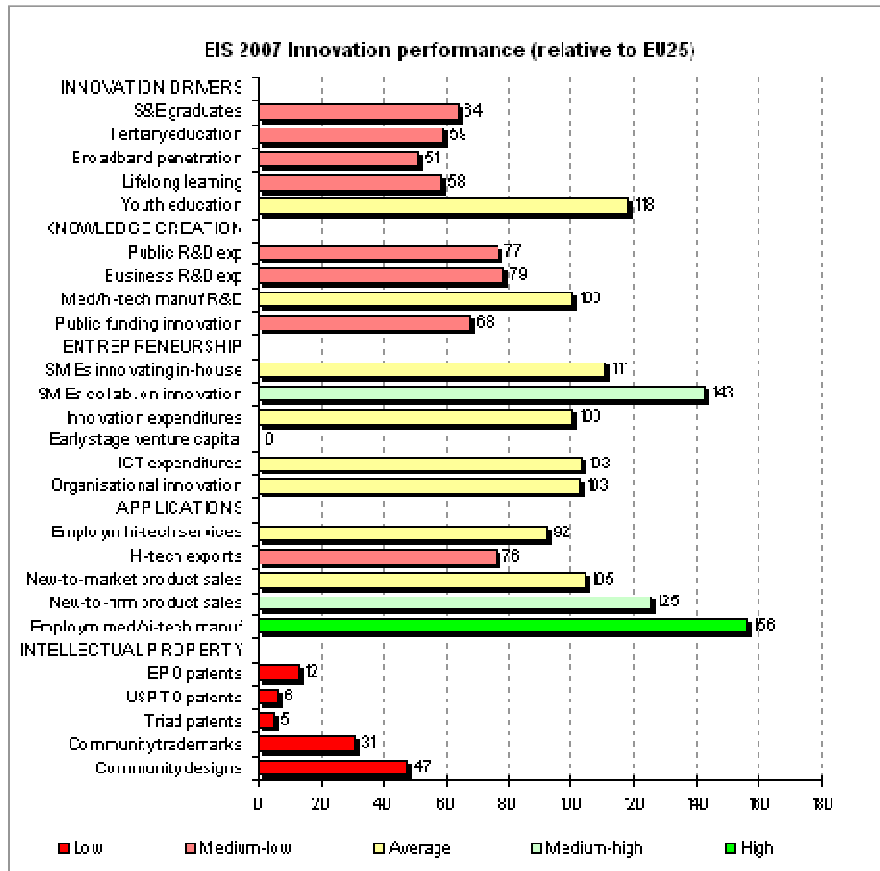
Other EIS indicators are also above the EU average: sales of new-to-firm products (4.4), and Indicator 4.3. Sales of new-to-market products are on an average level (105 in 2004), as is employment in high-tech services (4.1); however, the latter has decreased slightly since 2004.

Intellectual Property

The main reasons why the Czech Republic performs so poorly in this group of EIS indicators were identified in the study *Barriers to the Growth of Competitiveness of the Czech Republic* (⁵). In particular, these are the high financial needs in applying for a patent abroad and insufficient awareness/knowledge of industrial property rights among researchers. The weak level of protection of intellectual property in the Czech Republic thus results in extremely low figures of all the indicators within this group.

⁵ Ministry for the Regional Development of the Czech Republic (2005): *Final Report of the Project on CSF Evaluation 4/04: Barriers to the Growth of Competitiveness of the Czech Republic*. Available at <http://www.strukturalni-fondy.cz/evaluace/bariery-rustu-konkurenceschopnosti-cr> online.

Exhibit 2: European Innovation Scoreboard: country pages



INNO-Policy TrendChart

	Czech Republic	1999	2000	2001	2002	2003	2004	2005	2006	Rel. to EU	Ref. year
	Summary Innovation Index				0.32	0.33	0.33	0.34	0.36		
	<i>rank</i>				22	22	22	22	21		
	INPUT — Innovation drivers				0.30	0.30	0.29	0.32	0.33		
1.1	S&E graduates	5.0	5.5	5.6	6.0	6.4	7.4	8.2	--	64	2005
	<i>relative to EU</i>	54	54	52	53	52	60	64	--		
1.2	Population with tertiary education	11.1	11.5	11.6	11.8	11.9	12.3	13.1	13.5	59	2006
	<i>relative to EU</i>	--	59	59	59	57	57	58	59		
1.3	Broadband penetration rate	--	--	--	--	--	0.7	4.3	8.4	51	2006
	<i>relative to EU</i>	--	--	--	--	--	9	36	51		
1.4	Participation in lifelong learning	--	--	--	--	5.1	5.8	5.6	5.6	58	2006
	<i>relative to EU</i>	--	--	--	--	60	62	58	58		
1.5	Youth education attainment level	91.8	91.2	90.6	92.2	92.1	91.4	91.2	91.8	118	2006
	<i>relative to EU</i>	--	119	118	120	120	119	118	118		
	INPUT — Knowledge creation				0.35	0.37	0.36	0.36	0.38		
2.1	Public R&D expenditures	0.42	0.48	0.48	0.47	0.48	0.46	0.50	--	77	2005
	<i>relative to EU</i>	66	74	74	71	73	72	77	--		
2.2	Business R&D expenditures	0.71	0.73	0.72	0.73	0.76	0.80	0.92	--	79	2005
	<i>relative to EU</i>	60	60	60	60	64	68	79	--		
2.3	Share of med-high/high-tech R&D	83.1	84.0	86.5	85.4	85.4	85.4	--	--	100	2004
	<i>relative to EU</i>	97	99	102	100	100	100	--	--		
2.4	Enterprises receiving public funding						6.1			68	2004
	<i>relative to EU</i>						68				
	INPUT — Innovation & entrepreneurship				0.41	0.41	0.41	0.41	0.41		
3.1	SMEs innovating in-house						24.0			111	2004
	<i>relative to EU</i>						111				
3.2	Innovative SMEs cooperating with others						12.9			143	2004
	<i>relative to EU</i>						143				
3.3	Innovation expenditures						2.15			100	2004
	<i>relative to EU</i>						100				
3.4	Early-stage VC	0.001	0.026	0.010	0.001	0.001	0.000	0.000	0.000	0	2006
	<i>relative to EU</i>	3	35	23	4	5	0	0	0		
3.5	ICT expenditures	--	--	--	--	6.5	6.5	6.6	--	103	2005
	<i>relative to EU</i>	--	--	--	--	102	102	103	--		
3.6	Organisational innovation						35.0			103	2004
	<i>relative to EU</i>						103				
	OUTPUT — Applications				0.53	0.53	0.55	0.55	0.58		
4.1	Employment in high-tech services	3.1	3.0	3.2	3.1	3.2	3.1	3.1	3.0	92	2006
	<i>relative to EU</i>	--	95	94	92	96	96	95	92		
4.2	Exports of high technology products	7.9	7.8	9.1	12.3	12.4	13.7	11.7	12.7	76	2006
	<i>relative to EU</i>	38	36	43	65	67	74	62	76		
4.3	Sales new-to-market products						7.7			105	2004
	<i>relative to EU</i>						105				
4.4	Sales new-to-firm products						7.8			125	2004
	<i>relative to EU</i>						125				
4.5	Med-high/high-tech manufacturing employment	8.8	9.0	9.2	8.9	8.7	9.0	9.4	10.3	156	2006
	<i>relative to EU</i>	--	122	125	124	125	133	143	156		
	OUTPUT — Intellectual property				0.02	0.02	0.05	0.06	0.07		
5.1	EPO patent	10.6	10.4	11.3	12.0	15.9	--	--	--	12	2003
	<i>relative to EU</i>	9	8	9	10	12	--	--	--		
5.2	USPTO patents	3.3	2.8	2.8	3.5	3.2	--	--	--	6	2003
	<i>relative to EU</i>	5	5	5	7	6	--	--	--		
5.3	Triad patents	1.0	0.6	0.9	1.0	1.1	1.1	1.1	--	5	2005
	<i>relative to EU</i>	4	3	4	5	5	5	5	--		
5.4	Community trademarks	--	1.2	2.7	2.4	8.2	27.1	21.2	33.1	31	2006
	<i>relative to EU</i>	--	2	4	4	10	33	26	31		
5.5	Community designs	--	--	--	--	1.8	10.7	39.1	51.6	47	2006
	<i>relative to EU</i>	--	--	--	--	3	12	38	47		

1.3 Identified Challenges

Although the Czech Republic improved its position in innovation efficiency among the EU-27 countries, several areas still remain in which a lot of effort should be made to reach the EU average. The figures from EIS described above show that there are major shortcomings in the unprepared state of human resources for innovation, the weak use of IPR protection and the lack of VC and other instruments on the private equity basis.

Based on the position and recent trends in macroeconomic and innovation development in the Czech Republic described above, the following main challenges arise (see also Exhibit 3 and the detailed description below):

- cooperation between public R&D and industry;
- human resources for the knowledge economy;
- financing research, development and innovation.

Exhibit 3: Main innovation policy challenges

Description of challenge	Relevant indicators and trends
<p>1. Cooperation between public R&D and industry Insufficient cooperation between public R&D sector and industry is the most significant challenge for the Czech Republic's innovation system. This is a result (among other things) of deficiency in the evaluating system for R&D results, missing agencies for technology transfer and unfavourable conditions for establishing spin-off firms. Also cooperation among enterprises in form of clusters is not yet sufficiently developed in the Czech Republic.</p>	<ul style="list-style-type: none"> • Share of university and public research organisation R&D expenditures financed by business sector • New EPO patents (EIS indicator 5.1) • New USPTO patents (EIS indicator 5.2) • New Triad patents (EIS indicator 5.3) • New Community trademarks (EIS indicator 5.4) <p>Private sources constantly form less than 1 % of total expenditures on R&D realised in the public sector. The 5.1 indicator has reached 12 % of the EU average, the 5.2 indicator only 6 % and the 5.3 indicator only 5 %. The 5.4 indicator shows a slightly better situation with a positive trend of development, reaching 31 % of the EU average.</p>
<p>2. Human resources for the knowledge economy There are insufficient human resources for R&D in the Czech Republic: the graduate structure remains unsatisfactory and their skills do not necessarily correspond to market demand, universities are not sufficiently market oriented, education is not adequately related to practice, university management lacks flexibility, excellent students are not sufficiently supported, curricula do not develop creativity in students nor prepare them for flexibility on the labour market, and lifelong learning has not become a matter-of-course part of life for the economically active population.</p>	<ul style="list-style-type: none"> • Number of S&E graduates (EIS indicator 1.1) • Population with tertiary education (EIS indicator 1.2) • Participation in lifelong learning (EIS indicator 1.4) <p>The Czech Republic has been performing poorly in the above indicators, amounting to approximately 60 % of the EU average. A positive trend may be observed both for the number of S&E graduates (1.1) and for the population with tertiary education (1.2).</p>
<p>3. Financing research, development and innovation The extent of financing R&D and innovation in the Czech Republic is insufficient and the mechanism unsuitable. The public support of R&D is fragmented into 22 budget chapters; this increases the administrative costs considerably and prohibits the achievement of a critical mass of resources for excellent research projects. The Czech Republic is characterised by a low ratio of provided micro financing for start-up firms, a low ratio of credits and guarantees for SMEs to GDP, and by the existence of only two networks of the business angels. In addition, VC financing has not really been developed in the Czech Republic.</p>	<ul style="list-style-type: none"> • Public R&D expenditures (% of GDP) — (EIS indicator 2.1) • Business R&D expenditures (% of GDP) — (EIS indicator 2.2) • Share of target-oriented funding • Early-stage VC (% of GDP) — (EIS indicator 3.4) <p>Although both public and private expenditures on R&D in % of GDP have increased, these indicators remain below the EU average (less than 80 %). Early-stage VC in the Czech Republic is practically nonexistent. The relative position to the EU average declined from 35 % in 2000 to 0 % in 2006.</p>

Challenge 1: Cooperation between Public R&D and Industry

The separation of the two worlds and the difficulties in their interconnection is considered to be the most significant shortcoming and challenge for the Czech Republic's innovation system. Also, some statistical data confirm insufficient cooperation between public research organisations (including universities) and enterprises. The Czech Republic belongs to the group of countries with a low share of private financial resources in expenditures on R&D carried out in public sector. This low share of private financial resources is evident above all in the sector of tertiary education, where private sources formed less than 1 % of the total expenditures on R&D in 2005.

As results of the survey in research organisations (⁶) indicate, insufficient demand for R&D results is a significant obstacle which hampers cooperation between public research and the private sector. The lack of demand for R&D results is probably caused not only by a lack of financial resources in smaller firms, but also by the orientation of firms towards exploitation of a still relatively cheap labour force and production with lower added value. Insufficient motivation of researchers to applied research also constitutes a significant hampering factor for cooperation between those two sectors. Flaws in the evaluating system for R&D results, where the allocation of public resources on R&D is not interconnected enough with achieved results, are clearly reflected right here. Also, the lack of agencies for technology transfer from universities and public research organisations discourages efficient collaboration. The excessive expectations of the business sector, which frequently require complete research results in the prototype or pilot plant phase constitute yet another obstacle for cooperation between public research and the private sector. Also, favourable conditions for establishing spin-off firms have not been created yet. Up till now, the targeted searching of topics for newly viable technologies in research (so-called technology scouting) has been an underrated activity.

Also, cooperation among enterprises in the form of clusters is not sufficiently developed yet in the Czech Republic. Significant clusters in the Czech Republic were identified in a study of the Berman Group (⁷). These clusters appear in the automotive industry, and the electrotechnics, machinery, chemistry, and brewery fields. These clusters are usually involved in supraregional networks which channel activities to world business. At the same time, this study identified some cross-sectional activities with a long-term potential in contributing to the international competitive advantage of the Czech economy (e.g. biology with electronics and machinery, environmental technologies and alternative sources of energy, or information and communication technologies). The survey carried out within this study proved that clusters and their importance for regional economic development are not sufficiently recognised either in the private sector or in the public sector, even though this concept was supported within the Operational Programme 'Industry and Enterprise' in 2004 – 2006.

Challenge 2: Human Resources for Knowledge Economy

Although the Czech Republic has a number of top-quality researchers and scientific teams, especially in the field of medicine, biochemistry, material sciences, mechanical engineering and nanoscience, the insufficient number of qualified R&D personnel remains one of the most significant barriers limiting development of the Czech R&D. This is reflected in low values of EIS indicators related to human resources — the number of S&E graduates, the population with tertiary education, and participation in lifelong learning.

The substantially lower number of researchers in the Czech Republic in comparison with the European average is evident both in the public and the private sector, whereas there is a lack of younger researchers in particular, in all scientific fields. Since the EU Structural Funds in the programming period 2007 through 2013 allocated through the OP RDI (approximately CZK 60 billion, i.e. EUR 2.4 billion) will be exploited for the creation of a new research infrastructure or the extension of the existing research infrastructure, the lack of researchers may become critically evident in this context.

⁶ Ministry for the Regional Development of the Czech Republic (2005): *Final Report of the Project on CSF Evaluation 4/04: Barriers to the Growth of Competitiveness of the Czech Republic*. Available at <http://www.strukturalni-fondy.cz/evaluace/bariery-rustu-konkurenceschopnosti-cr> online.

⁷ Berman Group: Project on Cluster Identification, *National Report*, 2006.

A significant limitation in respect to the sufficient number of qualified R&D personnel is a relatively low share of population with university education (including PhDs). Also, the structure of tertiary education graduates which does not correspond to the future needs of industry is an important potential barrier to improving human resources in innovation activities development. The Czech Republic has significantly less graduates from science and engineering study programmes than other EU Member States, though the situation has improved in recent years.

Also, the readiness of university graduates to solve practical problems and the inadequate level of their language and managerial abilities is criticised by entrepreneurs. S&E graduates lack entrepreneurial thinking and knowledge on protection of industrial property rights. In addition, there is a lack of courage and desire to use the knowledge learnt at university for the establishment of their own enterprises.

All the issues mentioned above are more or less connected with a rather rigid educational system, which does not promote excellence among students. Although there are some initiatives of large industrial companies attempting to improve the level of university graduates by initiating contacts with universities and establishing joint centres (worksites) for training of students, private subjects of the knowledge economy continue to have no opportunity to influence the education curriculums in universities in favour of the subjects most in demand by business.

Challenge 3: Financing the Research, Development and Innovation

As compared with the developed economies, R&D expenditures in the Czech Republic continue to be relatively low, and the rate of their growth rather slow. The extent of financing R&D and innovation in the Czech Republic is insufficient and the mechanism unsuitable. Although the R&D intensity (i.e. the total R&D expenditures on GDP) rose to 1.55 % in 2006 against 1.41 % in 2005, the fulfilment of the 3 % Lisbon objective is uncertain.

R&D and innovation activities in the Czech Republic are financed by different financial resources. As far as private investment in innovation is concerned, Czech enterprises invest an above-average amount of their turnover in innovation. The detailed structure of these expenditures indicates (see Community Innovation Survey (CIS) results) that Czech enterprise in their innovation activities focus mainly on adoption of technologies developed abroad. The figures on private R&D expenditures also shows that R&D activities are carried out especially by multinational enterprises located in the Czech Republic and the R&D investment of Czech enterprises remains low. One of the most significant barriers forming a financial constraint for private investment in R&D and innovation is the lack of VC and other forms of private equity investment in the Czech Republic (see below).

National budget resources focus mainly on support of R&D, whereas public support is provided in the form of institutional support and project-oriented support. Innovation activities are supported from EU Structural Funds within the cohesion policy framework.

The public support of R&D is fragmented into 22 budget chapters, which have their own system of administration. This fragmentation increases the administrative costs considerably both from the provider's side and from the applicant's side. The complicated system also hinders achieving a critical mass of resources for excellent research projects on the frontier of knowledge and providing support to large intersectoral research and innovation projects. On account of this complicated system, only relatively small research projects are supported and a lot of effort must be made to avoid double-financing of individual projects. Except for a substantial decrease in the number of budget chapters for R&D and innovation, establishment of a technology agency responsible for providing public support of applied research, development and innovation is a necessary step forward.

The support of R&D from public funds can be divided into institutional financing (financing of specific research intentions, specific research at universities and selected activities involving international cooperation) and target-oriented funding (funding of research projects on the basis of public competition). In 2006, the share of target-oriented funding was approximately 47 % and in 2007 even less (approximately 44 %). Nevertheless, the Czech Republic's aim, according to the National Reform Plan, is to give preference to programmes involving financial co-participation of the private sector, and to bring the ratio between the target-oriented and institutional financing of R&D to 60:40, for the benefit of target-oriented funding.

According to several analyses ⁸, the Czech Republic is characterised by a low ratio of provided micro financing for start-up firms, a low ratio of credits and guarantees for SMEs to GDP, insufficient VC activity (compared to GDP and other central European countries), an insufficient degree of transfer of knowledge and by the existence of only two networks of the Business Angels.

International comparison shows that VC financing has not really developed in the Czech Republic (as also testified by the EIS indicator on early-stage VC). The Czech Republic belongs to the EU-27 countries at the end of the rankings, whereas early-stage VC investment in the Czech Republic is practically nonexistent. The absence of early-stage VC hinders the bridging of the financial gap in the start-up phase of innovative development.

The lack of VC investments in the Czech Republic is due to the legislative and tax environment, but also the demand for this type of financing for innovative projects is deficient. As far as the environment for VC investments is concerned, the major shortcomings can be seen in double taxation and regulatory constraints, which does not allow pension funds and insurance companies to invest their resources in the form of private equity. In addition, fiscal incentives for VC investors do not exist in the Czech Republic. Also the proactive role of the state in this area (establishment of pre-seed and seed capital funds on the PPP basis) is insufficient. Moreover, an adequate demand for VC investments is also missing. Entrepreneurs are anxious mainly about the loss of their independence in this respect.

⁸ For instance, see the European Innovation Scoreboard 2007 or the European Private Equity and Venture Capital Association (EVCA) (2007): *Central and Eastern Europe Statistics 2006*. An EVCA Special Paper. Available at http://www.cvca.cz/miranda2/export/sites/www.cvca.cz/cs/sys/galerie-download/EVCA_CEE_Statistics_2006.pdf online.

2. Innovation Governance and Policies: Key Trends in Structures and Performance

2.1 The National Innovation Governance System: an Appraisal

This section of the report provides a short summary of the Czech innovation governance system. Since the last *Country Report of 2007*, the main attributes of the innovation governance have not changed significantly. Therefore, further details and a comprehensive review can be found in the 2007 *TrendChart Report* via the INNO-Policy TrendChart website.

The National Innovation Policy for the years 2005 through 2010 (NIP), which is the main strategic document for innovation policy in the Czech Republic, was adopted by the government on 7 July 2005. Strategic objectives, concrete tasks, tools and measures of success are defined, responsibilities are allocated, deadlines set, success indicators established and evaluation methods prescribed. The NIP as such is implemented by a number of bodies within the state administration, depending on the tasks assigned to them.

The Research and Development Council (R&D Council) is an advisory body to the Government of the Czech Republic in the area of R&D. The R&D Council was assigned the role of a coordination body for the NIP (2005 – 2010), by a Government resolution in October 2005, since no ministry is responsible for innovation policy issues; the Ministry of Industry and Trade and the Ministry of Education are the closest in terms of innovation issues.

The Ministry of Education, Youth and Sports (MEYS) is a central body of the state administration responsible for preschool and school institutions, primary and secondary schools, universities, science policy, R&D, including international cooperation in this field, academic degrees, state care of children and youth, physical education, sport, tourism and state representation in sports. The Ministry of Education is administrating the Operational Programme 'Education for Competitiveness' (2007 – 2013). Furthermore, it will be responsible for administration of the Operational Programme 'RDI' (2007 – 2013). Within its competence for R&D issues, the ministry is responsible for formulating national R&D policy and supervising its realisation by giving its opinion on proposed R&D programmes, identifying priorities by means of a National Research Programme (NRP), administering the NRP, preparing R&D legislation, and international cooperation of the Czech Republic in R&D.

The Ministry of Industry and Trade (MIT) is a central body of state administration for national industrial policy, trade policy, foreign economic policy, power engineering, gas engineering, treatment of oil, natural gas, solid fuels, exploitation of mineral resources, for a range of industries, foreign trade, SME-related issues, and also for technical standardisation, industrial research and technology development. The Ministry of Industry and Trade is a management authority of the OP EI (2007 – 2013).

The most closely related to innovation among the institutions within the competence of the Ministry of Industry and Trade is CzechInvest. CzechInvest is the investment and business development agency of the Czech Republic whose services and development programmes contribute to the attraction of foreign investment and to developing Czech companies. Its mission is to support investment activities not only through information service and consultancy but also through linking with the structural funds of the EU.

At regional level, several regional governments approved their own Regional Innovation Strategies (RIS) aimed at improving the regional innovation environment to increase the attractiveness of their region for innovative enterprises (further information about the regional governance system can be found in Section 2.1.2 below).

2.1.1 Main changes in the national governance system

Since late 2007, there has been an intensive policy debate about the future constitution of the Czech R&D and innovation governance system. This debate resulted in the formulation of a plan to reform the Czech research, development and innovation system, which was approved by government on 26 March 2008. The *Reform of the Research, Development and Innovation System in the Czech Republic* is a strategic document summarising and explaining the need to take action to remove barriers in the Czech R&D and innovation system, which hamper research and innovation activities. The *Reform Plan* sets out seven key objectives.

- Simplify the R&D support system in such a way that research institutions are supported according to their research results and that research teams receive support on a project basis. This objective will be accompanied by reform of the evaluation system for R&D results and by strengthening the project-oriented financing of R&D activities. The improvement of the evaluation system for public-financed R&D is the cornerstone of the effort towards more efficient public investment in R&D and support of R&D projects with a high potential to be transformed into successful innovation.
- Reduce the number of budget lines which allocate public resources to R&D activities from the present level of 22, while at the same time simplifying the administrative procedures for R&D support. A set of unpopular legislative and non-legislative changes connected with redistribution of competencies among central policy bodies are needed to achieve this objective. Simplification of the administrative procedures for R&D support will be further achieved through establishment of the Technology Agency, which will be responsible for providing support to industrial research projects.
- Encourage and support excellence in R&D, and facilitate the application of R&D results in innovation. The infrastructure for excellent research should be established with the support of EU Structural Funds within the OP RDI. In order to ensure effective use of this infrastructure, the *Reform Plan* proposes to change the evaluation system for R&D results. More emphasis will be put on excellent results in basic research and on applicable results in industrial research.
- Strengthen cooperation between the research sector and users of R&D results by providing project-oriented support to research projects that are cofinanced by the private sector. The project-oriented support of industrial research will be provided by the new established Technology Agency. Furthermore, it is proposed to extend the current indirect support of R&D (tax reliefs) to R&D purchased by enterprises from public research institutions and universities.
- Establish a more flexible organisational structure of public research organisations to promote better collaboration with the business sector and to create suitable conditions for the commercialisation of research results.
- Provide qualified human resources for R&D and innovation. This objective is primarily addressed within the framework of the Operational Programme 'Education for Competitiveness'. Simplification of the conditions for hiring researchers from third countries is also planned.
- Intensify the involvement of the Czech Republic in international research, development and innovation cooperation, especially within the European Research Area (ERA).

The *Reform Plan* will be followed by a set of legislative, financial and organisational actions to improve the management and coordination of research, development and innovation policy. Most measures proposed by the *Reform Plan* are to be implemented by the end of 2010.

In addition to the *Reform Plan*, which proposes rather short-term changes in the national governance system, there are ongoing public consultations on the strategic direction of Czech R&D and innovation in the longer term. These consultations have been launched by the *Green Paper on R&D and Innovation* issued by the Technology Centre AS Czech Republic. The *Green Paper* was adopted by the government together with the *Reform Plan* as a supporting document for the follow-up debate about the future national innovation system of the Czech Republic. Following the consultation process a *White Paper on R&D and Innovation* will be issued in summer 2008. The *White Paper* will provide a

relevant background for designing new policy for R&D and innovation and other strategic documents in this field.

With the context of policy measures for R&D and innovation co-financed by the EU Structural Funds in the programming period 2007 through 2013, coordinating mechanisms between responsible ministries has been set out. When formulating the National Strategic Reference Framework (NSRF), and the individual operational programmes, the agreement was reached that the MEYS will be responsible for the supply side of the innovation process and the Ministry of Industry and Trade, which represents the business community, will be responsible for the demand side. Thus the operational programmes of both ministries (OP EI under responsibility of the MIT and OP RDI under responsibility of the MEYS) cover the whole innovation process, from the R&D phase to market commercialisation of the results without overlaps in supported activities.

2.1.2 Main changes in the regional governance system

From the regional point of view, the Czech Republic is divided into 14 regions, including the capital city of Prague. By law, the regions are granted the right to execute autonomous powers especially in the areas of regional healthcare, infrastructure, and education as well as in coordinating the development of the region and in approving, implementing and controlling programmes of their regional development. Since the last *Country Report* of 2007, these competences in regional governance haven't changed. However, at national level, several measures simplifying administration for entrepreneurs were passed; these had an impact on the way regions execute state powers.

Since August 2006, a system of so-called 'one-stop shops' was established in the Czech Republic, where entrepreneurs are able to register their businesses or make changes in their registration by means of a single registration form (one for legal entities and one for individuals). One-stop shops were established in Trade Licensing Offices. In addition to the actual registration of the business, entrepreneurs are able to carry out also tax registration and notification of the Czech Social Security Administration, the Employment Office and the appropriate health insurance company.

In March 2008, the Parliament of the Czech Republic approved the amendment of the *Trade Licensing Act*. This amendment significantly simplifies the administrative procedure of receiving a trade licence in order for entrepreneurs to start their own business.

- Trading authorisation certificates will be replaced by a single document, a statement from the trade registers.
- In the amendment, a single unregulated trade with 80 fields is introduced, and the entrepreneur simply announces the field in which he or she will trade within the context of this trade.
- The local competence of trades licensing offices is now abolished. The entrepreneurs will be able to make notifications of trades, submit request for licenses and discharge their reporting and notification obligations at any municipal trades licensing office throughout the Czech Republic.
- An entrepreneur's notification duty towards trade licensing offices will only apply to changes of such data which the trade licensing offices cannot gain from databases which public and state administration have at their disposal.
- Requirements for an obligatory practice⁹ of entrepreneurs starting their own business will be significantly reduced. Entrepreneurs starting a business have significantly reduced requirements for an obligatory practice.

⁹ If an entrepreneur's field of education is as same as the field of his/her business activity, there will be no obligation to have an obligatory practice, i.e. work experience in the respective field. In the case of a similar field of education to that of a business (or in the case of a retraining certificate in the respective field), a one-year period of obligatory practice is required. In case of an 'education and business mismatch', a six-year duration of obligatory practice is required to start one's own business.

Together with the one-stop shops, this amendment of the Trade law removes administrative and procedure barriers in establishing a business, and thus makes the entire system of trade licences administration faster and more efficient.

In December 2007, all seven Regional Operational Programmes for seven Cohesion regions in the Czech Republic were approved. Cohesion regions can now fully exploit the financial sources for regional development through their priorities and measures identified in their Regional Development Programmes as well as Regional Innovation Strategies. The system of governance and administration of the Regional Operational Programmes, as described in the *Country Report* of 2007, remains the same.

Concerning state support for regional innovation potential, the Ministry for Regional Development approved and is conducting a programme entitled 'Research and Development for Solving the Regional Disparities' ⁽¹⁰⁾ aimed at supporting the development of regional economies and tightening relations between research institutes and regional administration. The receivers of the block grants are to be subjects of the public sectors, and the projects eligible for this support will be cofinanced from the regional budgets. The total amount of the financial support through this programme will reach EUR 6 million in 2009 (the final year of the programme).

2.2 Focus and Trends of National and Regional Innovation Policies

2.2.1 The innovation policy mix

By innovation policy mix we mean the combination of direct (grants) and indirect (for example, tax incentives) innovation policy measures implemented by one or more national organisations and agencies in order to stimulate enterprise innovation activities. In the Czech Republic, the policy mix consists of direct support for R&D provided mainly via the national budget, direct support for innovation financed via EU Structural Funds, and indirect policy measures represented mainly by the tax allowance for private R&D expenditures.

The innovation policy mix in the Czech Republic is reflected especially in the above-mentioned NIP, and also recently in the National Strategic Reference Framework of the Czech Republic (2007 – 2013) and consequent Operational Programmes for the next programming period for drawing financing from the EU Structural Funds (2007 – 2013).

As far as the indirect innovation policy measures are concerned, a tax deductible amount representing 100 % of costs expended on the implementation of R&D projects (without state budget support) was introduced in the Czech Republic on 1 January 2005. In this way, private R&D investors have finally been provided with some of the conditions similar to those in advanced European countries. The first evaluation of this indirect support tool was published by the Ministry of Finance in June 2007. In the income tax calculation for the taxation period of 2005, 0.17 % of the total number of 259 490 entities that filed tax returns (approximately 22 % of the R&D active enterprises) claimed deduction of expenditures on R&D projects. The relatively low interest in the above tax incentive can be explained by the fact that a number of projects commenced before 2005, and had been awarded grants from the state. The total reduction of the tax liability amounts to CZK 0.86 billion (approximately EUR 35 million).

Since the targeted application of tax incentives for research, development and innovation leads to an accelerated interest in investing in these areas, thus encouraging the continuous and healthy growth and development of enterprises, maintenance of the introduced tax relief is assumed for the in-house R&D of enterprises. Further improvement can be seen in the extension of this tax relief to R&D purchased by enterprises from public higher education institutions and public research organisations. Such progress in indirect innovation policy measures could contribute to developing the necessary partnership of the private sector with public research.

¹⁰ Ministry for the Regional Development of the Czech Republic (2006): *Research and Development for Solving the Regional Disparities*. Available at http://www.mmr-vyzkum.cz/_Dokumenty/Legislativa/KoncepceVaVMMR.doc online.

The innovation policy mix in the form of direct policy measures is mainly reflected in the NSRF of the Czech Republic (2007 – 2013) and consequent operational programmes for drawing financing from the EU Structural Funds (2007 – 2013). Three major operational programmes have been prepared which tackle R&D and innovation issues: OP EI, OP RDI, and OP Education for Competitiveness. The OP EI (approved by the European Commission on 3 December 2007) is focused on support of the business development and the transfer of research results into business. It supports the establishment of new businesses and the development of existing firms, improves their innovative potential, their exploitation of modern technologies and their use of renewable energy resources. Furthermore, it enables the improvement of the infrastructure and services for business and helps to establish cooperation between companies and research institutions (more details about this main innovation policy measure are described below in Subsection 2.2.2). OP RDI (approved by the Czech government on the 2 April 2008, expected to be approved by the European Commission in summer 2008) is focused on strengthening the research, development and innovative potential of the Czech Republic, in particular through universities, research institutions and their cooperation with the private sector. It supports the purchase of new equipment for research workplaces, purchase of modern technologies, construction of new research laboratories and the capacity enlargement of tertiary education. Finally, the Operational Programme 'Education for Competitiveness' (approved by the European Commission on 12 October 2007) is focused on quality improvements in and modernisation of systems for basic, tertiary and further education, their interconnection with comprehensive lifelong learning systems and conditions for improvements of human resources for R&D and innovation.

In addition to the operational programmes, further policy measures towards promoting innovation activities of businesses, especially SMEs, have come into force in recent years. The Framework Programme for the Support of Technology Centres and Centres of Business Support Services (CZ 61), which was launched in 2004, supports investment projects focused on advanced technologies and activities with high added value and strong export potential. The aim is to enhance the Czech Republic's international competitiveness in the areas of innovation, information technologies and business support services. The framework programme was updated by Government Decree No. 217/2007 in March 2007 (more details about the main changes are described below in Subsection 2.2.2).

In 2007, small and medium-sized enterprises (SMEs) were supported by national resources (Ministry of Industry and Trade) according to the National Programmes Supporting Small and Medium-sized Enterprises. The following measures were launched (or relaunched) in 2007.

- Programme 'Aliance' (CZ 48) — Programme for Creating Alliances and Their Presentation Abroad (continuation of CZ 37);
- Programme 'Certifikace' (CZ 45) — Programme for Supporting Certification and Participation in Tenders (before 2006, activities supported by this programme were covered by the Programme 'TRH' — CZ 33);
- Programme 'Design' (CZ 47) — Programme on Design Support for SMEs (continuation of the CZ 36);
- Programme 'TRH' (CZ 44) — Programme of Interest-free Loans and Guarantees for Starting SMEs on the Territory of the Capital Prague (continuation of the CZ 33);
- Programme 'VYVOJ' (CZ 46) — Programme Supporting SMEs Participating in FP7.

Summing up, the innovation policy mix in the Czech Republic is relatively complex and covers almost all major dimensions of the innovation process (R&D, human resources, transfer of knowledge into commercial applications, innovation efficiency in the business sector, etc.). Different types of support (direct — through providing funding through schemes/programmes, and indirect — through tax reliefs) are applied. The most important resources for innovation support in the Czech Republic are generated through the EU Structural Funds.

2.2.2 New or significantly changed innovation policy measures

The OP EI, which is the main policy measure most related to innovation, was approved by the European Commission on 3 December 2007. It consists of 15 individual programmes: 13 focus on supporting SMEs and innovation and 11 have come into force so far.

- 'Progres' ('Progress' — CZ 49) enables the realisation of business development projects of SMEs which may have difficulties in finding external financing for further development due to their lower capital capacity or lack of collateral for securing a standard commercial loan (especially projects of small enterprises that are still relatively new). The support is available in the form of subordinated loans with or without financial subsidies. This programme is based on 'Kredit' (CZ 31).
- 'Start' ('Start' — CZ 52) helps first-time entrepreneurs, or entities opening a business after a longer break, to start implementing their business plans by means of interest-free loans or preferential loan guarantees with financial subsidies. This programme is a continuation of 'Start' (CZ 27).
- 'Záruka' ('Guarantee' — CZ 54) supports the realisation of investment projects of SMEs by means of preferential bank guarantees with or without financial subsidies that help SMEs have easier access to external finance. Special attention is paid to businesses operating in economically weak regions where more intensive public support is needed. This programme is a continuation of 'Záruka' (CZ 32) and supports also activities formerly supported by 'Certifikace' (CZ 45).
- 'Rozvoj' ('Development' — CZ 56) supports SME competitiveness by purchasing new technologies in areas with the concentrated support of the state, i.e. in economically weak regions. This programme is based on ROZVOJ (CZ 28).
- 'Ict a Strategické Služby' ('ICT and Strategic Services' — CZ 58) is focused on the development of ICT services for enterprises, extending the offer of software applications supporting enterprises processes, e-business, and digitalisation of information, as well as increasing the accessibility of digital data, the development of ICT strategy centres, etc. Although this programme is a new measure, it reflects some attributes of the Framework Programme for the Support of Technology Centres and Centres of Business Support Services (CZ 61).
- 'Ict v Podnicích' ('ICT in Enterprises' — CZ 60) aims to develop and improve the ICT infrastructure in small and medium-sized enterprises, connect enterprises to external networks and to high-speed internet, implement e-commerce and modern managerial and control systems (MIS), develop human resources in the use of ICT for the control of enterprises, etc. This programme is completely new.
- 'Inovace' ('Innovation' — CZ 59) supports projects focused on product, process, organisational and marketing innovation. Particular emphasis is placed on the support of eco-innovations. In addition, it supports activities leading to the protection of IPR (namely activities regarding patents) of SMEs, R&D institutions and universities. This programme is based on 'Inovace' (CZ 29).
- 'Potencial' ('Potential' — CZ 57) aims to support companies that establish new R&D activities or extend existing development capacities. R&D activities should be focused on high-tech products and technologies, including development of specific software applications needed for production. Although this programme is a new measure, it reflects some attributes of the Framework Programme for the Support of Technology Centres and Centres of Business Support Services (CZ 61).
- 'Spoluprace' ('Cooperation' — CZ 55) will support the set-up and development of regional, national as well as international collaborative groups — clusters, poles of excellence, technology platforms and other cooperation projects. This programme substantially enhances the support of the previous programme, 'Klastry' (CZ 26).
- 'Prosperita' ('Prosperity' — CZ 53) focuses on establishing, operating and further developing science parks, business incubators, innovation centres, centres for technology transfer and other subjects of the infrastructure for industrial research, development and innovation. This programme is a continuation and enhancement of 'Prosperita' CZ 25).
- 'Poradenství' ('Advisory Services' — CZ 51) will be aimed at improving the quality and availability of advisory, information and training services for SMEs, and thus increasing their competitiveness.

This programme is based on 'Poradenství' (CZ 35) and will also support activities formerly supported by 'Design' (CZ 47).

- 'Marketing' ('Marketing' — CZ 50) supports SME participation in foreign trade fairs, grouping or alliance activities of SMEs for the purpose of reducing costs arising in connection with their presentation in foreign trade fairs, etc. This programme is a continuation of 'Marketing' (CZ 30).
- 'Eko-Energie' ('Eco-Energy' — CZ 62) is focused particularly on increasing the effectiveness of the generation, transmission and consumption of energy and the use of renewable and alternative energy sources. This programme is based on the programmes 'Energy Savings' and 'Renewable Energy Sources' that were launched within the previous Operational Programme 'Industry and Enterprise' 2004 – 2006.

The Framework Programme for the Support of Technology Centres and Centres of Business Support Services (CZ 61) was updated in March 2007, and the new version has been in place since 18 April 2007. The Framework Programme supports two types of projects. First, the establishment and development of technology centres, i.e. centres focused on development and innovation of high-tech products and technologies, especially in aerospace, office and computer equipment, electronics and microelectronics, telecommunications and pharmaceuticals, scientific instruments and professional equipment, motor vehicles, industrial electrical machinery, production of chemical products, road transport equipment, engines, turbines and agricultural machinery. The second type of supported activities encompasses business support services in the form of customer contact centres, shared services centres, ICT expert solution centres, software development centres and high-tech repair centres. The main changes constitute a reduction of the minimum investment eligible for subsidy, from CZK 15 million (EUR 0.6 million) in the case of technology centres, and CZK 30 million (EUR 1.2 million) in the case of centres of business support, to the current level of CZK 10 million (EUR 0.4 million). In this way, smaller investment projects are also eligible for support. Further, more emphasis is placed on the creation of new jobs — the minimum number of newly created jobs has increased from 15 to 30 in the case of technology centres and from 50 to 100 in the case of customer contact centres. The maximum rate of public support has decreased to 10 % to 40 %, with respect to the new state aid map for regional support.

As far as the national programmes for SMEs are concerned, two of the programmes mentioned above has been transformed into the individual programmes launched in the OP EI framework. The activities supported previously from the programme 'Certifikace' (CZ 45) have been transferred into the programme 'Zaruka' (CZ 54), and the programme 'Design' (CZ 47) has been partly merged with the programme 'Poradenství' (CZ 51). The remaining three programmes, i.e. 'Aliance' (CZ 48), 'TRH' (CZ 44), 'VÝVOJ' (CZ 46), have been closed from the end of 2007. However, the size of those three programmes was rather small ⁽¹¹⁾. Since January 2008, no programmes for SMEs at national level financed solely from the state budget have been in force. The decision to merge the policy measures, which aim to encourage business activities of SMEs, resulted mainly from the effort to avoid the overlap of supported activities from different resources, as well as from the existing state budget constraints.

Almost all policy measures launched within the OP EI described above were included in the table of new policy measures in the 2007 *TrendChart Report*. Therefore, the following exhibit provides only a short summary of the policy measures not mentioned in the previous report.

¹¹ Subsidies provided under programmes in 2007 are as follows: 'Aliance' (CZ 48) — 16 subsidies (EUR 260 000), 'TRH' (CZ 44) — 40 subsidies (EUR 2.4 million), 'VÝVOJ' (CZ 46) — 7 subsidies (EUR 24 000).

Exhibit 4: New Innovation Policy Support Measures

IPM N°	Title	Innovation policy framework category	Organisation responsible
CZ 61	Framework Programme for the Support of Technology Centres and Centres of Business Support Services	4.1.1 Support for sectoral innovation in manufacturing 4.1.2 Support for innovation in services 4.2.2 Support for organisational innovation including e-business, new forms of work organisations, etc.	Ministry of Industry and Trade
CZ 62	EKO-ENERGIE (ECO-ENERGY)	4.1.1 Support for sectoral innovation in manufacturing 5.1.1 Support for the creation of a favourable innovation climate (e.g. road shows, awareness campaigns)	Ministry of Industry and Trade

2.2.3 Trends in innovation policy at regional level

In the last decade, at regional level, there has been an increasing emphasis on regional development in terms of regional competitiveness. Many regions in the Czech Republic formulated and started to implement their own Regional Innovation Strategies (RIS) aimed at raising the competitiveness of regional entrepreneurial environment and attractiveness for innovation enterprises, attempting to exploit sources from the Structural Funds. Also cluster initiatives, which often formed part of the Regional Innovation Strategies' priorities, emerged.

In the *Country Report* of 2007, the development of the RIS across regions was thoroughly described. Since then, one more region has formulated its own RIS. In the Zlín region, the formulation of RIS terminated the Action Plan (2008 – 2013) on 31 January 2008. Specific measures and their timetable were set, financial resources were identified, and appropriate monitoring and evaluation indicators were determined. In the Hradec Králové region, the process of formulation of RIS was launched in November 2007. The main conducting and coordination body in this process of formulation is the Council for Research, Development and Innovation of the Hradec Králové region. Also, the Vysočina region created a Preliminary Regional Analysis for Formulation of RIS, which is understood to be a step leading to the subsequent formulation of RIS in this region. Regions still without their own Regional Innovation Strategy are Vysočina region, Hradec Králové region, Central Bohemian region, and Olomouc region.

As mentioned above, some of the measures of support to creation and development of clusters are often to be found in RIS. The main initiative, however, came from national level in the form of the National Cluster Strategy (2005 – 2008), adopted by the Czech government in July 2005. In this way, national government is trying to view clusters as tools for broader economic development and growing competitiveness in the Czech Republic regions. The key financial fund of clusters and cluster initiatives was the Operational Programme 'Industry and Enterprise' (2004 – 2006); within this Operational Programme, the programme 'Klastry' (CZ 26) aimed to support projects establishing and developing sectoral clusters at regional and higher levels.

Despite the fact that the programme 'Klastry' was terminated in 2006 (i.e. at the end of programming period 2004 through 2006), the support of clusters will be renewed in broader scope: within the OP EI (programme SPOLUPRACE, CZ 55), clusters as well as poles of excellence and technology platforms will be supported. The additional fund's support is targeted mainly at measures regarding education, development of professional structure, and qualification as well as creation of educational and training centres (the Operational Programme 'Human Resources Development' (2004 – 2006)). For the

programming period 2007 through 2013, the most convenient programme with similar objectives regarding education is the Operational Programme 'Education for Competitiveness'.

In the 2007 *Country Report*, an exhibit presenting clusters that are recognised by the government and therefore supported by the national funds in regions of the Czech Republic was presented. Since then, a new cluster in the Zlín region in wood processing and furniture production has been established. In the Czech Republic, there are therefore 22 identified and supported regional and suprarregional clusters.

It should be pointed out that the institutionally established clusters eligible for the financial support are only those of a particular industrial sector in a region; service clusters have not been recognised for the support yet.

In addition, CzechInvest, a government agency of the Ministry of Industry and Trade, is a partner of the CEE-ClusterNetwork consortium, which involves 11 neighbouring cluster regions in central and eastern Europe. The aim is to support national and regional innovation policy actors to carry out and design cooperation activities together with other competent public authorities and therefore to shape a common policy by defining common strategic issues, strategies and programmes. The consortium now offers the possibility of cooperation to other Czech subjects and organisations involved.

2.2.4 Focus sub-theme: policies in support of creativity and innovation

We are increasingly observing a trend for innovation policies to 'intrude on' neighbouring areas such as education and skills in order to unlock/mobilise other sources of innovation. It is therefore interesting to investigate if and how Member States are implementing policies in support of innovation and creativity (precisely, where the two meet). This is **not** about the creative industries or policies in support of artistic creativity *per se*. It is more about horizontal policies, such as:

- awards for design and innovation;
- policies to unleash the creativity of user groups;
- policies in support of design;
- policies in support of trademarks (see also the EIS indicator);
- general awareness raising on creativity and innovation;
- policies in support of urban creative clusters (a creative region/cluster may be defined as one revolving around the 3Ts of economic growth: technology, talent and tolerance — see Richard Florida (2005). *Cities and the Creative Class*, Routledge. New York.)
- entrepreneurship and design.

Governments and regional authorities in several countries see creativity as an important driver for increased competitiveness and growth. The need for policies in support of creativity is also perceived as crucial in this regard. In many countries, there are programmes set up specifically to promote creativity and innovation. Such programmes may be carried out by existing actors (for example a government agency), or new actors may be set up to run them. This year's theme will provide an overview and analysis of the existing mix of policies in support of creativity and innovation and programmes in the Czech Republic at national and regional level.

Before starting, it must be emphasised that if the support of neighbouring areas of innovation is to gain more importance, then the Czech Republic shows shortcomings in this effort. There are no explicit and coherent policies of support for creativity and other areas mentioned above that are to represent the other sources of innovation. The enhancement of creativity is disregarded in major papers and policies on R&D and innovation in the Czech Republic. Nevertheless, the insufficient creativity and entrepreneurship in the Czech population is addressed by the *White Paper on Research, Development and Innovation*, which proposes several changes in the system of primary, secondary and tertiary education towards strengthening creative thinking, increasing the ability to solve practical problems and improving entrepreneurship.

One of the few measures dedicated to enhancing creativity in design, which also shows an awareness of IPR has been programme 'Design' (CZ 47): this is one of the state support measures for SMEs, administrated by the Ministry of Industry and Trade.

Since 1999, financial support through the 'Design' programme was provided by the Design Centre of the Czech Republic. Its aim was to provide methodical support to SMEs in incorporating design into their business strategy, to assist in choosing the proper designer, contribute to financing the authorial work (up to the 50 % with a limit of EUR 3 200), and therefore promote these new quality-design products. In 2007, the 'Design' programme supported 95 projects with the total amount of EUR 400 000. SMEs' interest in the 'Design' programme's support was striking.

However, the Design Centre of the Czech Republic was dissolved by the beginning of 2008, as was the 'Design' programme in its original form. The 'Design' programme was transformed into two support subsequent programmes.

The first of them is a state support programme 'Design for export', administrated by CzechTrade. The rationale is to support the exporting capabilities of industrial quality-design products made by Czech SMEs. Through this programme SMEs will be provided by a two-segment service — design development and design promotion. Individual consultancy services will be targeted solely to industrial and product design.

The second programme is 'Poradenství' (CZ 51), which is aimed at improving the quality and availability of advisory, information and training and education services for SMEs. At the same time, strengthening the general awareness of the necessity of carrying out innovation (including design strategy), as well as modern enterprise methods, are supported. This programme runs within the OP EI (2007 – 2013) and it is thus funded from the Structural Funds. So far, the programme 'Poradenství' has not been launched.

Another innovation policy measure of the Czech Republic partly fitting into the content of this section is 'Inovace' (CZ 59). The financial sources within this measure also support activities leading to the protection of IPR of inventions (patents) and utility models, both in the Czech Republic and abroad. The crucial emphasis is placed on industrial design and trademarks. The call in 'Inovace – Patent' was launched in January 2008.

Besides these policy measures directly contributing to the development of creativity and awareness of IPR in the Czech Republic, there are various competitions for creativity and design as a means of enhancing the awareness and motivation to be creative. The competitions are organised mainly by public entities. There are several examples:

- CzechInvest ('Innovation project of the year', 'Business plan of the year')
- Economic Chamber ('CzechSkills Contest')
- Association of Innovative Entrepreneurship Czech Republic ('Innovation of the year').

The above-mentioned Design Centre of the Czech Republic (which has now been dissolved) organised design contests: examples are 'Excellent product of the year' and 'Student design'.

To sum up, systematic public support for creativity skills is rather limited. There is no coherent policy that would support subjects of both private and public sectors in this regard. Moreover, one of the most significant entities that promoted design awareness was dissolved by the beginning of 2008. There are only a few measures dedicated to the support of design and IPR running in the Czech Republic. These are Design for Innovation administrated by CzechTrade, and 'Inovace' as one of the programmes within the OP EI. Besides the measures described above that promote creativity and innovation skills and design, there are also less institutionalised measures in the Czech Republic, such as contests.

2.3 Innovation Policy and Competitiveness: Main Conclusions

2.3.1 How well does policy respond to innovation challenges?

As mentioned above, the policy mix is relatively complex in the Czech Republic. The identified challenges are tackled more or less successfully by different policy measures financed by the EU Structural Funds. Implementation of further improvements (especially systemic) may be expected in

the context of the *Reform of the Research, Development and Innovation in the Czech Republic*, which will be carried out in the coming years.

Exhibit 5: Summary table: innovation challenges, policy responses and impact

Challenge	Relevance of policy response	Evidence of impact
Cooperation between public R&D and Industry	4	2
Human Resources for Knowledge Economy	4	3
Financing Research, Development and Innovation	4	4

Policy response ranking scored from 1 to 5: (1) No specific measures addressing the challenge (possibly a debate but no evidence of any real policy development); (2) Policy development under way to respond to challenge (policy debate or design launched, e.g. announced in National Lisbon Reform Plan, etc.); (3) Specific measures existing for some time but insufficient to respond fully to challenge; (4) Existing measure plus one or more newly launched measures (during last 18 months); (5) A comprehensive set of measures which potentially responds fully to the challenge.

Evidence of impact scored from 1 to 5: (1). Trend for indicators has worsened since measure(s) introduced; (2). No observable change in trend since measure(s) introduced; (3). Too early to appraise (measures introduced in last 24 months); (4). Trend for indicators has improved since measure(s) introduced; (5). Evaluation or study indicates measure(s) has clearly contributed to improving performance of country.

Responses to Challenge 1: Cooperation between Public R&D and Industry

One of the main barriers to development of the Czech knowledge economy is insufficient communication and collaboration between public research, represented by universities and public research organisations, and the business sphere. Creation of a favourable environment for collaboration between both of these sides is the aim of policy measures responding to this challenge.

One of the main responses to this challenge is the law on public research institutions, transforming state-owned research institutions into public research institutions, which enables them to set up spin-offs. The law has been passed, and in January 2007 the transformation came in effect.

The *Reform of the Research, Development and Innovation System in the Czech Republic* which has been approved by the government, introduces more opportunities for strengthening cooperation between public R&D and industry. In this respect, the evaluation system for the public support of R&D should place more emphasis on collaborative R&D and financial participation of the private sector in joint research projects.

Furthermore, the OP EI (2007 – 2013) for drawing financing from the EU Structural Funds includes four programmes closely related to transfer of R&D results into practice and the IPR issues. Firstly, the programme 'Potencia' (CZ 57) is aimed at strengthening development capacities of enterprises and increasing cooperation between enterprises and R&D institutions. Secondly, the programme 'Spoluprace' (CZ 55) supports establishment and development of clusters, technology platforms and other cooperation projects. Thirdly, the programme 'Prosperita' (CZ 53) focuses on support of establishment and further development of infrastructures for industrial research, technological development and innovation, and finally also the programme 'Inovace' (CZ 59) supports IPR issues.

This challenge is also addressed by Paragraph 4.2.5 (intensify the use of instruments securing the IPR of scientific and research institutions and enterprises) and Paragraph 4.2.6 (develop innovation infrastructure) of the National Lisbon Reform Programme.

Although several policy measures aimed at increasing cooperation between public R&D and industry already exist, there is no evidence of a significant improvement in this respect. However, there are positive expectations for strengthening the role of collaborative research in the evaluation system for public R&D.

Responses to Challenge 2: Human Resources for the Knowledge Economy

It is broadly agreed that people are the primary driving force behind the development of knowledge society, whereas professionally qualified and motivated human resources are essential in all stages of the innovation process.

For the programming period 2007 through 2013, the Operational Programme 'Education for Competitiveness', drawing financing from the EU Structural Funds, was designed to be dedicated solely to improving the quality of human resources in the Czech Republic. Especially the implementation of Priority Axis 2, called 'Tertiary education, R&D' may have a significant impact on improvement of human resources for R&D and innovation. Within this priority axis, new systems supporting entrepreneurial attitudes and innovative solutions in institutions for tertiary education and public R&D organisations will be designed and implemented. Also, further education of workers in R&D departments, workers' mobility between R&D departments and the business sector, cooperation between tertiary educational institutions and the private sector in the creation and realisation of study programmes will be supported.

This challenge is addressed by the National Lisbon Reform Programme as one single objective in the Paragraph 4.2.4 (provide human resources in R&D).

Also, the National Innovation Policy (2005 – 2010) includes human resources among its strategic goals and its objectives, and proposed measures also concretely address human resources (see also the 2007 *TrendChart Report* — Chapter 2.2.1).

Furthermore, the *White Paper on Tertiary Education*, which is currently underway, intends to improve the whole system of tertiary education.

Responses to Challenge 3: Financing the Research, Development and Innovation

This challenge is addressed by the National Lisbon Reform Programme in Paragraph 4.2.1 (increase YOY R&D public expenditures), in Paragraph 4.2.2 (change the structure of public R&D expenditures), in Paragraph 4.2.3 (promote private R&D expenditures by means of indirect support), and in Paragraph 4.2.7 (increase availability of funds to innovative firms).

The *Reform of the Research, Development and Innovation System in the Czech Republic* addresses the lack and inappropriateness of public support for R&D and innovation, and proposes legislative changes to be made to decrease the fragmentation of public support, and thus to cut related administrative costs. In order to increase the effectiveness of financial support of industrial R&D, the *Reform Plan* proposes to place more emphasis on the support of joint public-private projects with financial participation of private resources. This measure should also increase the potential for an effective application of the research results in practice.

The OP EI comprises programmes providing financing through loans under favourable conditions, with subsidies and guarantees for innovative enterprises in their start-up phase (see Chapter 2.2.2 above).

Within the OP EI, new activities are currently being prepared that are focused on the use of new non-subsidy financial instruments to support the innovative projects of companies in the start-up and growth phases of business associated with a higher level of risk during implementation. These instruments will not take the form of credit or subsidies, but will concern the entry of investors' capital into a given enterprise with the aim of its further development. One of the possibilities for implementation of this area is the utilisation of financial instruments within the JEREMIE joint initiative. This concerns an instrument of the European Commission and European Investment Fund for the support of VC, micro-loans and guarantees for SMEs. It is currently in the preparation phase, which includes mapping the situation in the Czech Republic with the aim of determining the needs of SMEs in this area.

2.3.2 Lessons learned from policy evaluation and good practice

Over the years 2006 and 2007, several evaluations within the Community Support Framework (CSF) were elaborated. The main aim of those evaluations was to assess the policy measures launched within the programming period of the EU Structural Funds (2004 – 2006); based on the results changes will be proposed for the orientation of new policy measures in the period 2007 through 2013. The following evaluations were focused on the innovation policy measures:

- Assessment of Priorities and Formulation of Recommendations for Implementation Measures towards Developing Knowledge Economy within Preparation of National Programming Documents of the Czech Republic for 2007 – 2013 (¹²);
- Assessment of the Absorption Capacity in the Area of Innovations and Knowledge Economy and Proposals for its Support from 2007 to 2013 (¹³);
- Proposal for a New Distribution of Development Programmes and for the Coordination of National and European Support Programmes vis-à-vis the Utilisation of Money from EU Funds in 2007 – 2013 (¹⁴).

The evaluations have proved that generally speaking, the existing policy measures are sufficient to cover the main areas of innovation and the knowledge economy, and are also in compliance with the strategic documents in this field, both at the level of the Czech Republic and the European Union. However, the above-mentioned analyses have highlighted several areas which should be addressed by new or transformed policy measures, an enhanced implementation system, and a generally improved system of innovation policy governance. These measures are explained below.

System measures

- strengthening feedback and interconnection among separate Operational Programmes (especially OP EI and OP RDI);
- strengthening feedback of activities created by separate departments;
- coordination of activities affecting the development of human capital creation of research capacities and research infrastructure and financial resources;
- establishment of an effective monitoring system (monitoring the number of projects and applications and their quality, analysing them and subsequently strengthening them).

Active creation of absorption capacity

- active searching of projects and their support, even at the preparatory stages;
- support of multidisciplinary projects;
- application of pilot projects (verification of the functional/operational utilisation of prepared activities);
- creation of a system enabling the filing of complex projects;
- approaching potential applicants geographically (knowledge of the local environment and personal relations);
- support of cooperation among all the participating actors (feedback among individual applicants);
- creation of the quality consulting expert network with participation of universities and R&D institutions;
- support of shared utilisation of research capacities by the public and private sectors;
- networking of similarly orientated projects.

¹² Ministry for the Regional Development of the Czech Republic (2006): *Assessment of Priorities and Formulation of Recommendations for Implementation Measures towards Developing Knowledge Economy within Preparation of National Programming Documents of the Czech Republic for 2007 – 2013*. Available at http://www.strukturalni-fondy.cz/uploads/old/1140449513.posouzeni_priorit_final_en.pdf online.

¹³ Ministry for the Regional Development of the Czech Republic (2006): *Assessment of the Absorption Capacity in the Area of Innovations and Knowledge Economy and Proposals for its Support from 2007 to 2013*. Available at http://www.strukturalni-fondy.cz/uploads/documents/Rizeni_fondu_EU/Evaluace/Preklad_Summary.pdf online.

¹⁴ Ministry for the Regional Development of the Czech Republic (2007): *Proposal for a New Distribution of Development Programmes and for the Coordination of National and European Support Programmes vis-à-vis the Utilisation of Money from EU Funds in 2007 – 2013*. Available at http://www.strukturalni-fondy.cz/uploads/documents/Rizeni_fondu_EU/Evaluace/Final_Report_ProgrammesII_en.pdf online.

Simplification of the implementation structure

- continuous analysis of the existing programmes and their appropriate modification to achieve greater effectiveness;
- ensuring sufficient cooperation in respect of implementation of individual policy measures;
- comprehensible implementation structure for applicants;
- centrally coordinated structure (revision of transferred competence of regional offices);
- transfer of responsibility for the project preparation to the applicant;
- paperless office or electronic account (elimination of project documentation preparation);
- multistage system of project evaluation (reflection of the degree of risk and financial demands of projects in the area of innovation);
- reduction of frequency of monitoring reports at advanced stages of implementation;
- greater stress on the good measurability of indicators.

Increased publicity

- increasing publicity exposure and publication of information on the implemented and prepared measures;
- transfer of 'best practices' from EU countries;
- support of replication of approaches to the project and its results (seminars, brochures, Web presentation);
- disseminating information on methodology and tools used within the framework of project solutions;
- organising topical seminars and workshops.

Good practice case for the Czech Republic

Although the programmes aimed at encouraging innovation have not been running for a sufficient length of time (since 2004) to be able to evaluate their broader impact on competitiveness, the programme 'Inovace' ('Innovation') can be rated as one implementing good practice, especially due to its popularity in the business community and its durability and extension over several funding cycles.

The earlier programme, 'Inovace' (CZ 29) supported implementation of projects focused on product and process innovation with the purpose of strengthening the ability of long-term competitiveness of enterprises and their sustainable growth. For innovation projects, particularly the link-up to a completed phase of R&D and its use in the form of a prototype, or a product sample were evaluated. Further, demonstration of a market gap for the product or service in question, the meaningfulness and feasibility of the project and its economic efficiency were evaluated.

During the whole period 2004 through 2006, a total of 332 support applications were submitted, of which 97 projects with aggregate amount of grants provided CZK 1.43 billion (EUR 57 million) were approved (i.e. success rate around 30 %). In terms of sectoral structure of the projects approved, the highest number of projects were represented in the electro-technical, chemical, plastics, metal working and engineering sectors. Most of the successful applicants came from the Central Bohemian regions, while applicants from the South Moravian and Zlín regions were also significantly represented.

Enterprises' interest in the Innovation programme was high during the entire 2004 to 2006 period. Therefore, in the new programming period (2007 – 2013), the previous policy measure has been relaunched within Priority Axis 4 of the OP EI. The new 'Inovace' programme (CZ 59) is implemented under the same name, which is already familiar to the broad business community. The programme went through a number of partial and also more important changes that reflected its position within OP EI and the corresponding allocation and practical knowledge and experience acquired. A fundamental novelty within the programme is the support of protection of industrial property rights, which is ensured in the form of separately announced calls ('Inovace-Patent'). In particular, protection of inventions by

patents and utilisation of other tools of protection of IPR (industrial design or trademarks granted abroad) are supported.

Within the second part of the programme 'Inovace' (the separately launched calls 'Inovace-Projekt'), the focus, as in the previous version, is on support of projects aimed at launching product and process innovation. Beyond these activities, SMEs are able to apply for support even for the introduction of new methods of organisation for the firms' processes, and cooperation with firms or public institutions (organisation innovation), or for the introduction of new sales channels (marketing innovation). SMEs are thus encouraged to accompany their technological innovation activities with non-technological innovation activities that increase their potential for the successful realisation of the whole innovation process.

To sum up, the programme 'Inovace', which improves the financial stability of innovative enterprises, has become an integral part of the innovation policy measure scheme. Due to its complexity, the recent extension of the supported activities promises an increase of effectiveness of the support and further growth of its popularity within the business community.

2.3.3 Possible orientations for future policy actions

In the context of fulfilling particular tasks of the NIP, the expected future actions will be oriented particularly on institutional changes of the research, development and innovation governance. The new policy mix proposed in the *Reform of the Research, Development and Innovation System in the Czech Republic* should be more effective due to the coordination of policy actions and the more intensive inclusion of the private sector in joint public-private research projects.

The *Reform Plan* is accompanied by the *Green Paper on R&D and Innovation*, which has launched a public discussion on further actions to increase the innovation-based competitiveness of the Czech economy. The issues identified in the *Green Paper* and consequent public discussion will be addressed by the set of actions defined in the *White Paper on R&D and Innovation*, which is currently underway. In addition, the proposed policy actions are being elaborated in close coordination with the modification of the tertiary education system proposed in the *White Paper on Tertiary Education*.

The below areas have been identified as the most significant for future actions (proposed tools and measures are in brackets):

Human resources

- to increase the number of graduates, especially those in science and engineering (Reform of the tertiary education system proposed by the *White Paper on Tertiary Education*);
- to improve the profile of graduates towards practical knowledge and entrepreneurship (Reform of the tertiary education system proposed by the *White Paper on Tertiary Education*);
- to increase the attractiveness of the R&D sector for young researchers (Reform of the evaluation system of R&D results and consequent wage growth in the public R&D sector proposed by the *Reform of the Research, Development and Innovation System in the Czech Republic*).

Financing

- to increase the efficiency of public funds for R&D due to the leveraging private resources in the public-private research projects (Reform of financing R&D projects proposed by the *Reform of the Research, Development and Innovation System in the Czech Republic*);
- to place more emphasis on the evaluation system of R&D results with consequent linkage to the future public financing of R&D (Reform of the system for evaluation R&D results and financing R&D projects proposed by the *Reform of the Research, Development and Innovation System in the Czech Republic*);
- to stimulate the private equity investment in the innovation projects in their seed and early stages (the utilisation of the JEREMIE initiative as projected in the OP EI).

Infrastructure for innovation and cooperation between public research and industry

- to build infrastructure for excellent R&D at universities and public research organisations (The utilisation of EU Structural Funds — the priority of the OP RDI);
- to develop an innovation infrastructure for effective collaboration between research and industry and for putting new ideas into practice organisations (the utilisation of EU Structural Funds — the priority of the OP EI);
- to intensify cooperation between public administration, the business sector and the research sector, at regional and national level (partly addressed by the OP EI, particularly due to supporting establishment of regional clusters and national technology platforms).

Environment for innovation and innovation governance

- to enhance the coordination of the educational, research, industrial and regional policy (institutional reform proposed by the *Reform of the Research, Development and Innovation System in the Czech Republic*);
- to extend the societal responsibility of universities, in the so-called third role (reform of the tertiary education system proposed by the *White Paper on Tertiary Education*).

3. Thematic Focus: Support for Innovative Start-ups, Including Gazelles

Innovative start-ups are seen as important vehicles for economic growth. Without business conditions that facilitate the creation of business start-ups, the contribution of investment in science and technology to innovation and growth will remain limited. New technology-based firms are significant employers of scientific and engineering personnel and key actors in the innovation process. These conditions may include well-functioning VC markets, regulatory reform to enable greater entry and exit and a business climate stimulating risk taking in the creation of new innovative firms.

In this section, we are therefore investigating the role of policies to support innovative start ups in the national innovation system.

3.1 General Framework Condition for Innovative Start-ups

The Czech Republic's general conditions for starting new companies are less favourable, according to its standing in 'Doing Business' and the OECD comparison with 178 other world economies⁽¹⁵⁾. The Czech Republic ranks 91 in the indicator of 'Starting business', far below other advanced economies. The main reason is the rather large administrative and financial burden of starting a new business, although positive changes are to come, with the approved amendment of the Trade Licensing Act which simplifies the registration procedure. Another major reason is that in the Czech Republic, there is insufficient natural entrepreneurial spirit both in the population and within the tertiary and research sector. Certain limitations were also imposed by the legislation framework; until the beginning of 2007, only universities were allowed to generate spin-offs (from that date, spin-offs could also be created from research institutes).

The general policy framework of support to innovative start-ups in the Czech Republic has been created by the *Conception of support for small and medium-sized enterprises 2007 – 2013*⁽¹⁶⁾, conducted by the Ministry of Industry and Trade and the OP EI (2007 – 2013). In both cases, the main bodies responsible for managing measures for innovative start-ups are the Ministry of Industry and Trade and its agency, CzechInvest.

CzechInvest, the investment and business development agency, is the most significant entity responsible for providing consultancy and support to SMEs nationwide in their initial stages. CzechInvest provides free of charge (or with preferential rates) advisory services tailored precisely to the needs of start-ups and early-stage firms. Entrepreneurs can choose among top-quality proven advisors, can compare themselves anonymously with their competitors worldwide, and can also become the first choice of investors in the local market. Thus, they have open access both to the current economic and technological trends and to the consulting infrastructure.

As identified in the EIS scoreboard (for the indicators of 'Intellectual property' and 'Early stage VC'), the Czech Republic lacks support of VC financing; moreover, the system of business angels doesn't function properly. On the other hand, there is a solid system of support to the innovative start-ups via state loans, grants and tax deduction in the Czech Republic. Also, support for the establishment and development of technology parks and business incubators has had a long and steady tradition.

Most of the business incubators in the Czech Republic arose in the 1990s when emphasis was placed on the creation of new job opportunities after a high increase of unemployment in some regions affected by the collapse of strong regional industries. However, since the beginning of the new century, there has been a substantial change in the public understanding of the role played by

¹⁵ See <http://www.doingbusiness.org/ExploreEconomies/?economyid=55> online.

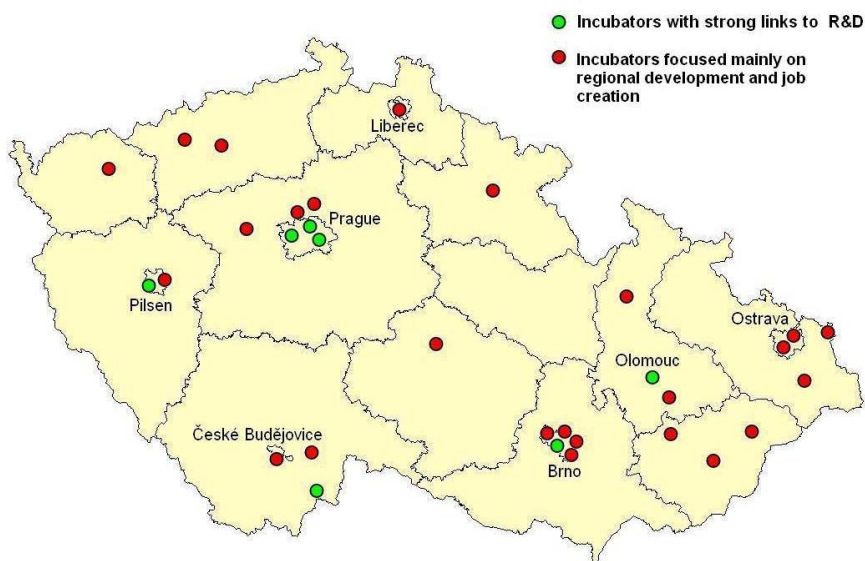
¹⁶ Conception of support for small and medium-sized enterprises 2007 – 2013. See <http://www.mpo.cz/zprava24151.html> online

business incubators. Today, it is generally agreed that business incubators should, besides their role of creating new business opportunities, also act as a powerful tool for stimulation and development of linkages between creative academic sectors (e.g. universities or research facilities, whether private or state owned) on the one hand, and industry, business and trade in general on the other hand.

A proper acceptance of the importance of business incubators and the related environment for innovative start-ups in the Czech Republic resulted in some changes in the legislation (e.g. research institutes can have a share in spin-offs generated from them, tax deduction of research expenses is possible), and most importantly, national funding schemes have allocated substantial amounts for the creation and development of science and technology parks, business incubators and technology transfer centres.

The evaluation of science and technology parks (carried out regularly by the Science and Technology Park Association Czech Republic) shows that there are already some technology business incubators with strong cooperation links to the research base in the Czech Republic. These incubators create favourable conditions for development of new innovative firms and their fast technology-based growth. Incubators with strong cooperation links to research institutions are located close to the national centres of research excellence — cities or regions with a high concentration of research institutions — leading national universities, or clusters of research institutes of the Academy of Sciences (see Exhibit 6).

Exhibit 6: Business incubators in the Czech Republic – 2007



Source: Klusacek, K. (2008)

3.2 Specific Policies and Programmes for Innovative Start-ups

The proposed innovation policy measures that have been launched within the OP EI (2007 – 2013) intend to promote development of innovative start-ups both indirectly and directly. Support of infrastructure for start-ups provided by the programme 'Prosperita' (CZ 53) consists in promoting development of business incubators, technology transfer centres and business angels networks. The aim is to create a favourable environment for establishing start-up firms with new ideas and innovative projects. These new firms can get grants from the operator of the incubator for rental of office, laboratory and other spaces, and additional grants for consulting services, training and retraining. Furthermore, the programme 'Progres' (CZ 49) enables the realisation of business development projects of SMEs which may have difficulties in finding external finance for further development due to their lower capital capacity or lack of collateral for securing a standard commercial loan (especially projects of small enterprises with a short history of existence). Support is available in the form of

subordinated loans with or without financial subsidies. Another programme, 'Start' (CZ 52), helps first-time entrepreneurs, or entities starting a business after a longer break, to start implementing their business plans by means of interest-free loans or preferential loan guarantee with financial subsidy. Also, the programme 'Zaruka' (CZ 54) supports the realisation of investment projects of start-ups and other SMEs by means of preferential bank guarantees with or without financial subsidies that help SMEs gain access to external finances. Special attention is paid to businesses operating in economically weak regions where more intensive public support is needed.

Another policy measure focused on promoting SMEs in their start-up and expansion phase is the 'Competitiveness' programme (CZ 41). The purpose of this programme is to aid the development of SMEs in their start-up and expansion stages. Its primary aim is to strengthen the competitiveness of such companies through the provision of quality consulting services implemented by experts. This programme enables applicants to analyse the strengths and weaknesses of their firms and to identify opportunities and areas for improvement and successful development of their business activities. The scope of areas of supported consultancy projects is broad, ranging from the definition of individual strategies of management, financing and resources, to marketing activities, personnel issues, and training. The pilot phase of this programme has been successfully completed and its evaluation is currently underway. It has resulted in 36 successfully implemented and supported consultancy projects, with the amount of nearly CZK 7 million (EUR 280 000) in paid subsidies.

Since 2005, the agency CzechInvest has been organising the Financial Forums for Small and Medium-sized Enterprises⁽¹⁷⁾ with the aim of showing start-up SMEs various alternative paths to financing. The Financial Forum for Small and Medium-sized Enterprises is a two-day programme for owners and managers of SMEs. The target group of the Forums is primarily composed of dynamic SMEs that are either in the seed, start-up or early stage of business, or launching an innovative product. The purpose of Financial Forums is to show SMEs various alternative paths to financing, i.e. bank financing, including possibilities of combining subsidies with bank credit, as well as information on how VC investments and financing through business angels work, and what it is necessary to do in order to gain this type of investor. Also, a basic overview of the opportunities for drawing resources from EU Structural Funds is offered. Together with CzechInvest, partners from a range of financial and regional institutions participate in Financial Forums. Such partners include important banks, VC funds, business angels networks and business incubators. Financial Forums are organised in various regions of the Czech Republic: in Prague, Brno, Ostrava and Plzen.

For innovative firms in the seed, start-up and expansion phases, the agency CzechInvest has launched the project 'Investment Forum for Small and Medium-sized Enterprises'⁽¹⁸⁾, within which firms can present their innovative projects and future plans for further development with the aim of interesting assessors from a range of VC funds, representatives of business angels networks and individual investors. Every firm interested in participating in a forum must first submit for evaluation documentation on its project, which then undergoes a preliminary selection procedure, as only the 10 most interesting projects will have the opportunity to compete for financial resources. CzechInvest offers selected firms the following assistance in the preparation of their presentations:

- preparation of the business plan;
- preparation of the presentation of the investment project before the financial assessment;
- advisory service and expert consultation from professionals in the area of company financial management.

Also, at regional level, several activities with the objective to support SMEs in their initial phase of development have arisen. These regional policy measures are usually mediated by innovation and other business support centres. One of the good practices is the micro credit scheme provided by the innovation Centre of the South Moravia (JIC) — details can be found in the box below or at <http://www.jic.cz/en/finances.html> online.

¹⁷ More details can be found at <http://www.czechinvest.org/en/financial-forums> online.

¹⁸ More details can be found at <http://www.czechinvest.org/en/investment-forums> online.

Micro credits provided by the Innovation Centre of South Moravia (JIC)

Entrepreneurs (individuals as well as legal entities) residing in the Technological incubator of the Technical University in Brno can use special micro credits to cofinance their innovation projects aimed to create new products, enlarge existing range of products or services, improve existing products' characteristics, access new markets, launch new methods or changes in production, distribution, management, organisation of work or qualification of labour force.

Micro credit is a specific medium-term credit ranging from CZK 250 000 to 750 000 (EUR 10 000 to 30 000) with a 3 % interest rate. The JIC Micro Credits Fund offers credit to companies/entrepreneurs as a means of cofinancing their innovation projects. The maturity period is usually 3 years with a possible grace period of up to 12 months and a possibility of early repayment without extra fees.

Micro credits are used above all for financing the early stages of company development, the period when obtaining financial resources is often the most difficult. As companies can only prove a short history and have a minimal possibility of guarantees, in most cases they can't obtain a regular bank credit.

Companies residing in the incubator are generally well aware of the possibility of obtaining financial resources from the JIC Micro Credits Fund, and information about conditions of credit granting are frequently requested. To assure a maximal success rate in obtaining a micro credit, the JIC team demands that companies analyse in detail the projects that they want to realise during the incubation period, to prepare high-quality documents for credit application as well as for the project's realisation. Companies in the incubator are subsequently able to identify not only the strengths of their product but also its weak points and possible risks, and are able to define target groups of users and convenient marketing strategies.

The Micro Credit Fund seems to be an advisable and effective tool supporting innovation companies. Not only does this tool offer advantageous credit but it is also a tool for deep elaboration of applicants' business plans and therefore a means of preparation for possible risks and critical points in the realisation of those business plans. The probability of successful incubation of the above-mentioned companies and their setting up in a market environment increases as a result.

3.3 Integration with Other Competitiveness Policies

While formulating various measures, programmes and policies of support to innovative start-ups, special attention was paid to compatibility with other policy papers. The specific measures of support for starting new businesses and innovative start-ups form an integral part of wider programmes of support to SMEs. In particular, these are the OP EI (2007 – 2013), and the *Conception of support for small and medium-sized enterprises* (2007 – 2013).

As far as the support for a favourable environment for innovative start-ups in the form of infrastructure for innovation is concerned, the programme 'Prosperita' (CZ 53) focuses on both infrastructure for start-ups (business incubators) and infrastructure for a fast growth and further development of innovative businesses (technology parks, etc.). The support of the environment for start-ups is thus integrated in the general framework of support aiming at establishing closer relations of the scientific and research institutions, including universities, with the business sphere.

The above-mentioned programmes 'Progres' (CZ 49), 'Start' (CZ 52) and 'Zaruka' (CZ 54) are involved in the policy framework for support of SMEs. When the innovative start-ups reach a development phase, i.e. they have at least a three-year history of successful development, they become eligible for support provided from several other supporting programmes. The main suitable policy measures for innovative SMEs in a development phase are programme 'Inovace' (CZ 59) (see also good practice in Chapter 2.3.2) and 'Rozvoj' (CZ 56). These two measures help the innovative SMEs to bridge the financial gap in the phase of starting new innovative projects.

Further, the 'Competitiveness' programme falls mainly into the policy framework focused on support provided in the form of advisory services for SMEs. In addition to this programme, further activities led especially by the agency CzechInvest have been launched or are to be launched in 2008. The programme 'Poradenství' (CZ 51), which is a part of the OP EI but which has not been launched yet, should constitute the backbone of the consultancy services provided to SMEs on preferential conditions. SMEs may also take advantage of access to the free-of-charge database of professional consultants (National Registry of Consultants¹⁹), which is managed by CzechInvest. In addition, CzechInvest through its programme 'Support to the Development of Subcontractors' (CZ 39) helps

¹⁹ See <http://www.nrp.cz/vm/wbeans/ConsultantBrowsingTopWBean-eng> online.

SMEs to reach higher production and management standards and enables them to become suppliers of large multinational enterprises or foreign investors acting on the local market.

Finally, the accompanied support of start-up companies provided by the agency CzechInvest in the form of organising financial and investment forums is related especially to the new financial instruments for the support of innovative projects (VC and other forms of private equity financing). Although the use of these instruments is strongly underdeveloped in the Czech Republic, the discussion about their utilisation has started. The first attempt in this respect can be found in the programme 'Prosperita' (CZ 53), which is focused inter alia on the development of business angels networks and on preparatory works for the new JEREMIE joint initiative.

Annex: Sources of Further Information

Annex 1: Websites of key innovation organisations

List of the key innovation organisation in the Czech Republic can be found at <http://www.proinno-europe.eu/index.cfm?fuseaction=wiw.whoiswho&page=list&CO=22> online.

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