Support to SMEs - Increasing Research and Innovation in SMEs and SME Development

Work Package 2

Czech Republic
Operational Programme ERDF 2007-2013 Enterprise and Innovation

Case Study

Ex post evaluation of Cohesion Policy programmes 2007-2013, focusing on the European Regional Development Fund (ERDF) and the Cohesion Fund (CF)

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Quotation is authorised as long as the source is acknowledged along with the fact that the results are provisional.
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<th>Description</th>
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<tbody>
<tr>
<td>AIR</td>
<td>Annual Implementation Report</td>
</tr>
<tr>
<td>CEECs</td>
<td>Central and Eastern European Countries</td>
</tr>
<tr>
<td>CSO</td>
<td>Czech Statistical Office</td>
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<tr>
<td>ERDF</td>
<td>European Regional Development Fund</td>
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<tr>
<td>ESF</td>
<td>European Social Fund</td>
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<td>ESIF</td>
<td>European Structural &amp; Investment Fund</td>
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<tr>
<td>EU</td>
<td>European Union</td>
</tr>
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<td>EU27</td>
<td>European Union 27</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>HEI</td>
<td>High Education Institution</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>MA</td>
<td>Managing Authority</td>
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<tr>
<td>MIT</td>
<td>Ministry of Industry and Trade</td>
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<tr>
<td>OP</td>
<td>Operational Programme</td>
</tr>
<tr>
<td>OPEI</td>
<td>Operational Programme Enterprise and Innovation</td>
</tr>
<tr>
<td>OPRDI</td>
<td>Operational Programme Research, Development for Innovation</td>
</tr>
<tr>
<td>PI</td>
<td>Policy Instrument</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>R&amp;I</td>
<td>Research and Innovation</td>
</tr>
<tr>
<td>RDI</td>
<td>Research Development and Innovation</td>
</tr>
<tr>
<td>ROP</td>
<td>Regional Operational Programme</td>
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<tr>
<td>SMEs</td>
<td>Small and Medium-sized Enterprises</td>
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</table>
1 EXECUTIVE SUMMARY

The objective of the present study is to perform an ex-post evaluation of the measures implemented by the Operational Programme Enterprise and Innovation 2007-2013 in the Czech Republic. The purpose of the programme was to strengthen the competitiveness of the economy by supporting the growth and innovation performance of small and medium-sized enterprises (SMEs) as well as large enterprises.

The data and information for processing the case study were obtained from various sources. First of all, data from the monitoring system were used (financial data as well as physical progress measured by monitoring indicators). In addition, information from the programme annual reports, supporting analyses and evaluation studies was used (including but not limited to counterfactual impact evaluations). Last but not least, 19 structured interviews were conducted with representatives of the Managing Authority, intermediate bodies, external evaluators and beneficiaries. All data and information were obtained over the period November 2014-May 2015.

1.1 Regional context

In the Czech Republic the economic structure is undergoing dynamic changes at the national and regional level. One of the reasons is for this is the massive inflow of foreign investments taking advantage of the low costs. As a result, the intensity of inter-firm links as well as science-industry links, which are widely considered important drivers of competitiveness, is limited. Thus, the nature of the economic structure of the Czech Republic is the so-called “branch plant syndrome” (Blážek et al. 2014). It is clear that the Czech economy has had to face fundamental challenges and the associated consequences during reintegration into the global economy.

Small and medium-sized enterprises represent a crucial number of entrepreneurs in the Czech economy, but they also play a significant role due to their contribution to exports, employment and the overall GDP of the Czech Republic. On the other hand, SMEs should (in the long-term perspective) improve patenting activities, intensity of cooperation with scientific and research institutions or technical and non-technical innovation (MITOF\(^1\) 2012a).

SMEs, along with the rest of economy, had to tackle the economic recession, which took a different form than in other EU countries. A delayed crisis was followed by a downturn in domestic demand, lack of trust of households and significant reductions in investment.

1.2 Policy framework and the OP's intervention logic

The Czech Republic is characterized by a high fragmentation of regional innovation systems and poor coordination of the innovation policy. The OPEI and its policy instruments were prepared in this context. Experience with the previous operational programme from the period 2004–2006 played a major role. It is therefore not surprising that the planning of policy instruments was affected primarily by demand and absorption capacity. A typical feature is the wide range of strategies and the large number of related support activities. But generally speaking “the strategy, as well as the forms of support, was considered to be mostly in line with the modern European approaches” (Blážek 2012). The purpose of the OPEI was to increase the competitiveness of industry and the development of services for enterprises while maintaining the conditions for sustainable development. The programme is relatively open, i.e. for example, the industries that are of greater importance in the economic structure of the Czech Republic and that would receive more support, have not been specifically identified. Only selected policy instruments had a regional dimension (e.g. PI "Support for the purchase of new equipment with higher technical and operational parameters", which was aimed exclusively at assisted regions).

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\(^1\) MIT Ministry of Industry and Trade of the Czech Republic.
Furthermore, it is evident that the majority of policy instruments relate to “hard” investments, and fewer to support for local entrepreneurial initiatives and “soft projects”. In this sense the OP contributes little to changing the situation and encouraging regional innovation systems. Individual policy instruments behaved relatively autonomously and approved individual projects rather than integrated and coherent business/innovation projects at regional level. Last but not least, one can emphasize that a wide range of policy instruments have been implemented through various forms of support (direct grants, guarantees, etc.)

1.3 Main findings

- The OPEI supports a large variety of policy instruments and business-related activities, however just seven policy instruments (from the total 14) claim more than two-thirds of the whole allocation for the OP.

- The joining of two institutions (i.e. the Ministry of Industry and Trade and CzechInvest Agency, the implementing body) was especially important for the implementation of the programme (specific steps were taken towards true simplification of administration).

- The strategic relevance of ERDF resources is crucial for encouraging an entrepreneurial and innovational environment. Compared to the national policy framework, its financial possibilities and real activities, the significance of ERDF is highly visible. On the other hand, it increases the reliance of companies on external sources of financing.

- The policy instrument with the crucial role of enhancing the innovative performance in companies was the “PI – Support for innovative performance of firms” (it claimed the largest allocation as well). However, the greatest interest was shown for “PI - Support for the purchase of new equipment with higher technical and operational parameters”.

- During the period 2007-2013, 25 evaluation studies were externally commissioned. However, the majority of evaluations relied more on the evaluation of processes and less on the results/impact orientation (but three of them applied counterfactual impact evaluation approaches).

- Although the results and benefits of policy instruments identified in this study seem relatively positive (based on evaluation studies, analysis and interviews), it is also necessary to point out some critical aspects. For example, it is not clear to what extent supported companies will be able to replace the purchased technology and equipment using their own resources (in coming years). The issue of long-term sustainability of all these positive effects of policy interventions is therefore unclear.

- Ideally, it is expected that projects trigger positive cumulative mechanisms (spread effects like finding new markets, development of new innovative products etc.) and that some companies will, for example, change their positioning in global production networks. But increasing competitiveness may only be temporary for many companies. Data available from the evaluation reports does not allow us to assess the contribution of ERDF support to the major long-term challenges of competitiveness and changing economic evolution in the Czech Republic.

- Despite being declared in both programming documents, synergies and interdependencies between OPEI and OPRDI (Operational Programme Research, Development for Innovation) projects (large Centres of Excellence) are rather weak (random). This is mainly due to delays in the implementation of OPRDI.

- Specific linkages can be identified in relation to the EU research programme. Some companies that cooperate with research centres (with support from OPRDI) and also received a grant from the OPEI are also active and try to be successful, for example, in the HORIZON 2020 or FP7 programmes.

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2 In this case, a soft project refers, for example, to activities that support cooperation between universities and companies (such as innovation vouchers) or measures that should aim at increasing cooperation between companies in the development of new products, etc.
1.4 Lessons learned

- The fragmentation of the programme into 14 policy instruments allows better focus on the needs of enterprises (mainly SMEs) and entrepreneurship in the Czech Republic. On the one hand, the operational programme responds to the need to increase the innovation performance of industry and the service sector, support for competitiveness, etc. On the other, the purpose was also to support small and medium-sized enterprises that do not have a high potential for innovation, but have an important stabilizing function in structurally affected or economically weak areas. Experience shows that there was great interest in this type of support for enterprises that "just" want to keep up with the competition. However, the sustainability of supported projects is uncertain, especially in structurally affected regions. Generally the diversification and selective support (e.g. only in regions with concentrated state support, structurally affected regions and regions with high unemployment) appear to be sensible, but from the long-term perspective it is necessary to assess them cautiously. The wide setting of priorities and supported activities of individual policy instruments contributed to the strong interest from SMEs, but real (and long-term) enhancement of competitiveness may be less positive than expected.

- In this study specific attention was paid to the policy instrument “Support for innovative performance of firms”. This policy instrument can be described as the flagship of the OPEI. In the context of cooperation between companies and scientific research institutions, the grants had a rather neutral effect. It turns out that firms with innovation potential often had established cooperation before the implementation of the project. The subsidies did not significantly affect such cooperation. It is therefore clear that those “who want to cooperate, already cooperate” (regardless of the project). This is a confirmation of the path dependency trajectory. OPEI projects cannot be expected to fundamentally change this situation. The Czech Republic is one of the Central and Eastern European countries with the highest fragmentation in regional innovation systems, in which there is no tradition of firm-university linkages and distrust between these institutions prevails (more in Isaksen, Trippi 2014).

- Furthermore, field research and evaluation studies showed a positive effect of innovation projects (funded under this instrument) on the competitiveness of enterprises at the time of the economic crisis (2008 and 2009). The experience can be generalized to say that at the time of the economic crisis, the projects had a stabilizing role (compared with a decline in unsupported companies). While in subsequent years, when demand was stagnating, supported companies recorded a positive development (in both production and labour productivity). Thus, the policy instrument focusing on innovative projects had a positive effect on the development of companies. Realized investments clearly contributed to improving the quality of innovative products, which often allowed them to increase production and possibly also expand into new markets. But such evidence relates only to the flagship policy instrument focusing on firms with innovative potential.

3PI – Support for innovative performance of firms - focused on the development of technical and non-technical innovation in enterprises, including the development of their cooperation with research and development organisations, and the strengthening of their own company capacities for R&D and related activities.
2 CONTEXT AND BACKGROUND

This section provides a concise description of the regional context by illustrating the key socio-economic features, the characteristics of the economic fabric - and SMEs in particular - and the policy framework for industrial and innovation development.

2.1 Socio economic context

Figure 1. Czech Republic

Source: CSIL

The Czech Republic is one of the Central and Eastern European countries - CEECs, where the structure of the economy (and the associated competitiveness) experienced a very dynamic development during the transformation period. Novotný, Blažek and Květoň (2015) emphasized three main specific features of the former command economies, especially for the Czech Republic: i) weak endogenous SMEs sector, ii) wide prevalence of the branch-plant syndrome (branch-plant oriented exclusively to the assembly of standard goods without strong spillover effects) and, iii) locking-in of a sizeable part of companies as lower-tier suppliers of global production networks (a large number of Czech firms operate as lower-tier suppliers of global chains and they are exposed to tremendous cost pressure). In other words, we can emphasize the different evolution path in the Czech Republic, where there are limited inter-firm linkages or science-industry links, weak innovation activity in SMEs, low financial stability of enterprises that implement product, technology and service innovations, and generally low-cost production.

Based on Regional Innovation Scoreboards (2014, 2012) the Czech Republic ranks among “Moderate Innovators” in Europe. The position has been stable in the mid-term period. Only regional variability is apparent. The capital city of Prague shows the highest regional performance. On the other hand, there are still structurally affected less developed regions for which the majority of macroeconomic and innovation indicators are below-average level.

Some of the main strengths of the Czech economy3F4 are the increasing growth in spending on research and development in the foreign enterprises sector as well as in the public sector, a strong export performance, high-quality technical competence and a tradition of industrial know-how. Furthermore, there has been a noticeable shift in investments in recent years from manufacturing towards strategic services (ICT support activities, help desks etc.), research and innovation, and an increase in the number of

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3The source is the Concept of Development of Small and Medium-Sized Enterprises for the Period 2014-2020 (MIT 2012)
firms carrying out their own research, development and innovation-related activities. In the long-term perspective, the strong export potential of the economy should be emphasized, especially that of the manufacturing industry.

Nevertheless, there are still many weaknesses that should be solved by various tools. A typical example is the dependence on foreign trade: Czech products reach the global markets mainly indirectly, through foreign (parent) companies. The performance of the domestic market was significantly lower than that of the foreign ones and there is a dominance of traditional disciplines or activities whose competitiveness is based on traditional factors (increasing efficiency and productivity). Unfortunately, there is very limited cooperation in innovation activities and fragmented/limited regional innovation capacities are typical for the Czech Republic. A significant part of owners of originally local SMEs do not aspire to further expand their businesses. In a context of strong reliance on exports, local businesses are highly affected by the economic cycle.

The Operational Programme Enterprise and Innovation was planned and prepared at the time of the economic boom (but with the awareness of all the above mentioned weaknesses). In the past decade, especially over the period 2003–2008, the Czech Republic and its economy probably experienced the best period of its modern history. GDP growth was around 6%, exports grew annually by 9% and imports by about 5%. Not only these, but also other macroeconomic characteristics, were significantly linked to the development of business (not only SMEs). The accession to the European Union, which contributed to the setting up of the institutional legislative environment and allowed free movement of goods, services and capital, is one of the main positive impulses of Czech GDP growth.

**Figure 2. Evolution of GDP and unemployment in the Czech Republic**

![Graph](image_url)

Source: own processing based on Eurostat

In the Czech Republic the effects of the economic crisis occurred significantly later than in the neighbouring countries. Indeed, the crisis did not show until the second half of 2009 (this was due to the decline of foreign trade flows). Moreover, when the neighbouring countries gradually resumed their economic growth after 2012, the Czech economy was still stagnating or slightly declining. This was mainly due to a downturn in domestic demand, lack of trust of households and a significant reduction in investment. The OPEI was implemented in the context of the above developments, i.e. first during a strong economic boom and then during the subsequent long period of stagnation.

### 2.2 Regional industrial fabric and SMEs

Small and medium-sized enterprises account for the majority of businesses in the Czech economy and they also play a significant role due to their contribution to exports,
employment and the overall GDP of the Czech Republic. Below are the basic characteristics of SMEs valid for 2013:

- There are 1,066,787 entrepreneurs in the group of SMEs (99.84% of all businesses in the Czech Republic).
- The share of SMEs of GDP is 36.1% (small and medium-sized enterprises contribute over a third of the GDP of the Czech Republic. From the long-term perspective, the SMEs share of GDP is increasing slightly).
- The share of SMEs of total exports is 51.5% (exports of small and medium-sized enterprises have been showing continuous, steady growth since 2002).
- SMEs employ 1,856,000 workers (60.85% of the workforce in the Czech Republic)
- Wages paid in SMEs are below average compared with wages in the Czech Republic (about 84% of the average wage in the Czech Republic).

The increase in the number of SMEs is rather volatile. However, there are no significant declines. In the period after the first wave of economic recession, the number of SMEs increased (until 2012) but there was a slight decrease in the following year. This is a rather natural trend of the formation and dissolution of enterprises. Based on structured interviews with representatives of the Ministry of Industry and Trade, this is a natural process.

**Figure 3. The development of the number of SMEs 2009 – 2013**

Source: Report on the development of small and medium-sized enterprises and their support in 2013, MIT

According to NACE, the largest share of registered SMEs is in the service sector. The second major group consists of enterprises operating in the wholesale and retail trade, and in the repair and maintenance of motor vehicles. The third most important group is the manufacturing industry and construction (16%). In terms of contribution to employment, however, the manufacturing industry (32%) and wholesale and retail trade (20%) claim the largest shares. Micro-enterprises thus dominate in the tertiary and quaternary sectors, while medium-sized enterprises, which mainly contribute to employment, are involved in manufacturing.
The weaknesses and needs of SMEs are long-term and reflect the structure and focus of the Czech economy. One specific problem is the low innovation activity of SMEs. According to recent surveys of the business environment, it seems that mainly large enterprises pursue innovation (78.8%), unlike medium-sized (57.6%) or small enterprises (38.2%). Increasing innovation activities and performance should, therefore, be long-term priorities of the development of SMEs. In addition, non-technological innovation activities predominate in groups of SMEs (marketing and organisational innovation), while in large enterprises innovation activities are represented more evenly (technological and non-technological). The future benefits of SMEs for the economy are subject to an increase in their competitiveness (by reducing costs and increasing innovative products and processes). At the same time, it is necessary to mention that the
innovative process in the Czech Republic is affected by the position of Czech firms in global production networks and chains. Firms thus assume technologies, processes and other methods instead of creating their own innovative solutions. (MIT 2014, Analytical materials to the National Innovation Strategy of the Czech Republic). This is partially due to the strong influence of foreign capital, which was allocated to the Czech Republic during the transition period and is still being allocated. The result is less autonomy of companies in the development and manufacture of products with higher added value. Another weakness is also the very low co-operation between firms and cooperation with scientific research organisations. This is due to the high fragmentation of innovative systems in the Czech Republic and low coordination of innovation policy. The above-mentioned problems and needs are not new and the effort to eliminate them is repeatedly stressed in strategic documents of the Czech Republic.

The main needs of SMEs therefore include:

- Increased access to capital for the development of innovative activities;
- Increased patenting activities;
- Higher intensity of cooperation with scientific and research institutions;
- Development of technical and non-technical innovation in SMEs;
- Increased activity in the commercialisation of results of research and development;
- Increased spending for the implementation of technological innovation.

Furthermore, it is necessary to emphasize that large companies play a crucial role in the very open Czech economy. Any decline in production of these companies has a multifold impact on the economy. Experience shows that the relationship of large enterprises and SMEs is complementary (multiplier effect on SMEs). Large enterprises generate demand for the products and services of small and medium-sized enterprises. Furthermore, large companies form the basis for industrial investment and foreign direct investment in general. In addition to the economic effect, large enterprises play a crucial role in the development of human resources and contribute to the image of the entire country. Finally, it is important to emphasize the relationship of large enterprises to research and development. These companies have their own research and development departments and work on the innovation of their products. In this sense, they essentially contribute to the development of applied research which has been at a low level in the Czech Republic for a long time. However, in addition, large companies also generate significant demand for research and development results. The number of people employed in R&D in large companies has been increasing for a long time (SRSV 2013).

Table 1. Selected indicators by company size categories in the Czech Republic (2011)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>0 – 9 empl.</th>
<th>10 – 49 empl.</th>
<th>50 – 249 empl.</th>
<th>250+ empl.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution of companies to value added</td>
<td>19.71%</td>
<td>15.12%</td>
<td>20.79%</td>
<td>44.38%</td>
</tr>
<tr>
<td>Number of companies in different size categories per 1 million inhabitants</td>
<td>95,794</td>
<td>93,846</td>
<td>633</td>
<td>135</td>
</tr>
<tr>
<td>Proportional representation of company size groups in overall employment</td>
<td>31.79%</td>
<td>18.40%</td>
<td>19.19%</td>
<td>30.62%</td>
</tr>
<tr>
<td>Contribution of companies to the gross turnover by size category</td>
<td>19.19%</td>
<td>17.76%</td>
<td>20.83%</td>
<td>42.21%</td>
</tr>
</tbody>
</table>

Source: own processing based on SRSV (2013)

2.3 Policy framework

2.3.1 The regional innovation system

A variety of empirical evidence indicates low levels of development of national as well as of regional innovation systems in the Czech Republic (Novotný, Blažek, Květoň 2015).
Although it has brought the structure of its economy much closer to the traditional market economies, the Czech economy is likely to follow a different evolutionary trajectory (see also Ženka, Novotný and Csank, 2014; Ženka et al., 2015). Therefore, the empirical evidence suggests that the Czech Republic is following the path dependent market-based model (Smith and Swain, 2010).

The Czech Republic is characterized by a high fragmentation of regional innovation systems and poor coordination of the innovation policy. An important step was the establishment of regions (NUTS III) in the Czech Republic in 2001. Until then, there was no self-government at the regional level and coordination of regional development was difficult from the national level. Measures for more intensive inter-firm linkages and linkages between companies and research organisations have been recently implemented in some regions with a clear innovation development strategy (from a financial point of view, these were grants from EU Structural Funds as well as from regional and national financial resources). For example, various support centres for start-ups and innovation-oriented entrepreneurs were created (business incubators, technology accelerators, science and technology parks, innovation centres, hubs and clusters, etc.). The main purpose was to support innovative entrepreneurship, increase cooperation between various institutions and intensify technology transfer. But the construction of “hard” infrastructure is only the first step. The most important aspects are the activities and results that this infrastructure will bring. And in this sphere the Czech regions differ significantly. The support of local innovative initiatives that can enhance the effects of infrastructure is substantial. The most successful example in the Czech Republic is the South Moravian Region that introduced some very successful tools (e.g. innovation vouchers, etc.). However, there are very significant differences between regions in terms of support for small and medium-sized enterprises, innovation systems and entrepreneurship overall (MIT 2014).

2.3.2 The role of national and EU funds for SMEs

Small and medium-sized enterprises in the Czech Republic have a number of possible sources of financial support for their development (especially national programmes sponsored by the Ministry of Industry and Trade, as well as other sectoral ministries). In terms of the volume of funds, however, OPEI is clearly the most important source and thus an essential tool for utilizing funds from the EU Structural Funds. Furthermore, in terms of target groups, OPEI focuses mainly on supporting small and medium-sized enterprises.

At the beginning, it was determined that at least two-thirds of beneficiaries would be small and medium-sized enterprises and therefore they constitute the dominant component of all beneficiaries. According to information from the annual reports, this proportion was met.

The measures financed from national sources (for enhancing SMEs) include, for example, various instruments to support small and medium-sized start-ups, to support design, the introduction of technical and non-technical innovations, to support the participation of SMEs in specialized fairs and exhibitions, to support SMEs in public procurement etc. The volume of funds allocated is marginal compared to the policy instruments in OPEI (MIT 2014). National funds are intended mainly to support fields that were not supported by operational programmes, but also to complement the supported activities. In this context it is evident that the strategic relevance of ERDF resources is crucial for fostering

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7 Traditional market economies refer to countries that have not undergone a phase of centrally planned economy and do not have to transform their economic structure due to the negative consequences of the socialist regime.

8 Large foreign companies were taking the low-cost advantage and located numerous branch-plants in the Czech Republic, while keeping their core activities with high value-added in highly developed regions. This gave a rise to a dependency development model of the economy.

9 From national sources, which are used to support SMEs, this includes the national programme Guarantee, the Ino start programme to support innovative SMEs, programmes to support industrial research and development, the EFEKT 2013 programme to support energy savings and the use of renewable energy, the EDUCA global grant, economic diplomacy projects, international development cooperation projects, KONTAKT II, programmes to support exports, programmes to support international technological cooperation, and more.
an entrepreneurial and innovation environment. Compared to the national policy framework, the significance of ERDF, its financial possibilities and real activities are highly visible.

In the period 2014–2020, support for small and medium-sized enterprises will look very similar. The new operational programme supporting entrepreneurship and innovation has become the third largest operational programme in the Czech Republic in terms of volume of allocated resources from EU funds.
3 ERDF STRATEGY ON SMES

The aim of the present section is, first, to account for the intervention logic underpinning the mix of policy instruments selected to address SMEs and, secondly, to describe the actions put in place, their implementation mechanisms and the preliminary evidence on their expected or actual achievements.

3.1 Objectives and priorities

Current approaches to support for innovative entrepreneurship and regional development can be divided into two main groups (Blažek 2012). On the one hand, there is the belief that the activity of companies (as well as other institutions) is affected by the "surrounding environment" (stressing the spatial proximity of actors, quality of the innovation environment, etc.). The basic theoretical concept is the Regional Innovation System (more in Cooke 2002). However, even other concepts such as learning regions, clusters or triple helix can be emphasized. On the other hand, some authors (Dicken et al. 2001, Pavlínek 2010) emphasize that a region's competitiveness is primarily affected by the relationships and ties of regional companies to global production networks (GPNs) and chains. Advocates of this concept, therefore, emphasize the possibility of upgrading companies within GPNs. Both main theoretical concepts have their practical implications for promoting innovation policy. At this point, it is necessary to emphasize that the objectives, priorities and measures supported within OPEI were not purposefully and deliberately affected by these approaches. Based on contextual analyses, as well as experience from the previous period 2004–2006, the main objective of OPEI was defined as an effort to "increase the competitiveness of the Czech economy by the end of the programming period and bring the innovative performance of the sector of industry and services closer to the level of leading industrial countries of Europe" (OPIE, p. 57). The purpose was therefore to increase the competitiveness of industry and the development of services for enterprises while maintaining the conditions for sustainable development. Weaknesses in and threats to the Czech economy, and especially in entrepreneurship, were identified in the preparatory phase of the operational programme. The dependence of Czech businesses on imports of licenses, technical expertise and know-how, machinery and advanced technologies, which are unattainable for many companies (mainly SMEs) was addressed. The result is a long-term focus on production on qualitatively less demanding products in many industries and products with lower added value. Most Czech firms are therefore at the end of global production networks and chains, which does not contribute to the competitiveness of the Czech economy. It was, therefore, evident that the state had to intensively tackle the debts and handicaps of the past.

Thus, the objective was to support companies that are able to increase their innovation potential and develop the knowledge of their employees. In this sense, the important sectors are mainly those that have the potential to become competitive on a European and global scale and that may change the economic structure. On the other hand, it is necessary to emphasize that the strategy does not include a clear definition of the entrepreneurial environment that should be achieved at the end of the programming period. In other words, the designed strategy tries to address various barriers to innovation and growth of SMEs very extensively. For this reason the spectrum of supported activities and interventions is very broad. Furthermore, it is evident that the majority of policy instruments relate to "hard" investments (new machines, new infrastructure etc.) and less to support for local entrepreneurial initiatives and soft projects.

An important role in the discussion and the preparation of new priorities and policy instruments was played by the experience of the shortened programming period 2004–2006 when the Czech Republic gained its first experience of the utilisation of EU Structural Funds. At that time, there was the "Operational Programme Industry and Entrepreneurship", which contained a variety of policy instruments. The policy instruments "Start", "Credit", "Development" and "Innovation" were among the most successful ones (according to the MA). However, it can be critically stated that this "success rate" refers rather to the high absorption capacity of companies to prepare and implement viable projects that meet the criteria of the Operational Programme. For this reason, the continuity was maintained and these instruments continued also in the period...
2007–2013. More policy instruments were added that reflected the current needs and shortcomings associated with the development of SMEs and innovative entrepreneurship.

3.2 Synergies with other OPs and strategies

The OP supports measures for the establishment of new innovative firms, development of R&D capacities for firms and commercialisation of outputs from R&D through individual firms. Concerning the interventions addressed to develop R&D capacities, the programme shows synergies with the OP “R&D for Innovation” focused on large R&D infrastructure and encouraging innovation. Moreover, there is a link with the OP Human Resources and Employment (OP HRE) which focuses, amongst other things, on developing human resources in the industrial and related services sector (including R&D). The links that developed between the programme and the OP HRD in the previous programming period continued in the 2007–2013 period. Other complementarity – including Operational Programme Environment and Rural Development Programme - is not directly related to innovation and SMEs. Furthermore, the OPEI as a whole is very closely linked to implementing the National Reform Programme, which provides a list of measures needed to implement recommendations made by the Integrated Guidelines for the Europe 2020 Strategy (e.g. to optimize efforts to support research, development and innovation, support the knowledge triangle and develop the digital economics potential).9F10

3.3 Policy mix

A total of 14 policy instruments were identified that were relevant to this ex-post evaluation. In terms of the basic properties and characteristics of policy instruments, the following can be highlighted:

For most policy instruments, financial support is provided in the form of grant subsidies. Within individual policy instruments, the amount of the subsidy was restricted by a lower and an upper limit. Generally, however, it is a traditional form of support. Subsidies granted under Commission Regulation (EC) no. 800/2008 varied depending on the size of the enterprise, i.e. small, medium-sized or large enterprises. At the beginning, the operational programme set relatively ambitious objectives related to the implementation of financial instruments. For some policy instruments, their pilot application was not successful and significant problems were identified as well. For example, the so-called Seed Fund and Venture Capital Fund were supposed to be created under Priority Axis 1.10F11 However, the implementation of the Seed Fund project was suspended due to the administrative proceeding conducted before the Office for the Protection of Competition and, what is more important, due to significant audit findings detected in the implementation of other financial instruments for which financial corrections had to be applied by the European Commission. For this reason, it was decided to reallocate funds from the Seed financial instrument of Priority Axis 1 into Priority Axis 2.11F12 Therefore, the implementation of financial instruments cannot be assessed very positively. This was reflected, among other things, in the fact that grant subsidies prevail again in the new programming period post-2014. From the long-term perspective, however, there should be an effort to intensify the application of financial instruments (although most interviewees believe that grant subsidies are correct and the only ones possible for most supported activities). In this sense, the limited experience with the implementation of other types of modes of delivery is apparent. Implemented policy instruments were aimed at removing various weaknesses and barriers to business (with a specific and particular emphasis on SMEs). Most often, the instrument focused on strengthening the competitiveness of Czech enterprises. However, the purpose was not only to support the

10 Based on AIR OPEI 2014.
11 Priority Axis 1 should be made up of two areas of support focused on creating conditions for the establishment of new companies with support aimed at innovation-oriented companies. Attention should be paid mainly to the issue of accessibility of appropriate financial resources, including creating new pro-innovation financial instruments. The main purpose should be to facilitate the access of starting entrepreneurs to capital. The beneficiaries will be exclusively SMEs (AIR OPEI 2013).
12 Priority Axis 2 focused on increasing the competitiveness of small and medium-sized enterprises through support provided for the implementation of small-scale business development projects of small enterprises with a short history (that do not have sufficient equity). The second part of the Priority Axis was focused on improving the technical equipment of businesses through purchase of new modern technologies, including information and communication technologies (ICT). The beneficiaries were mostly SMEs.
most innovative companies, but great emphasis was also placed on measures that are supposed to contribute to keeping up with the competition on foreign markets. Last but not least, ICT tools and services in business and support for cooperation as well as projects of energy efficiency were strongly supported. It is therefore evident that it was a balanced mix of policy instruments that responded to the real demand of companies. The appropriate setting is evidenced by the high absorption capacity and overall relative lack of problems in the drawing of funds. But the absorption capacity does not say anything about the real contribution to long-term competitiveness. In this context the results and impacts of policy interventions should be evaluated cautiously.

Most policy instruments focused exclusively on individual firms (very often SMEs, but sometimes also large companies). There were associations of multiple companies only in a limited number of cases. Support targeted at larger companies focused primarily on a close connection between research and development and production and also energy efficiency measures (where huge energy savings can be made in case of LE). Furthermore, supporting such larger enterprises could enhance their potential to produce innovative production of prototypes and technologies (much more than in SMEs) and to increase competitiveness. According to interviewees, it seems that the directive rule about the mandatory share of supported SMEs (at least two-thirds) was unnecessarily strict.

Figure 6. Overview of the policy mix by the mode of delivery, target beneficiaries and type of intermediaries

![Figure 6](image)

Source: own processing based on AIR

Generally speaking, removing the handicaps (technological, production, etc.) of individual companies was therefore a priority. It is also necessary to emphasize that the programme and its policy instruments were not supposed to focus primarily on creating new jobs. Nevertheless, about 35,000 new jobs were created. The primary objective was to increase R&D and the innovation level.
Figure 7. Overview of the policy mix by barriers to SME growth and innovation and main expected changes

3.4 Intervention logic

The Operational Programme Enterprise and Innovation was approved on 3 December 2007. Over the programming period 2007-2013, more than EUR 3.12 billion was allocated from EU funds. The total allocation for the implementation of the OPEI programme in the period 2007–2013 was EUR 3.67 billion including 15% compulsory public and private co-financing.

Already at the beginning of the programming period, it was clearly established that not all policy instruments would have the same significance.

- Support for innovation became the main "flagship". The aim of the instrument "Support for innovative performance of firms" (under Priority axis 4) was to increase the innovation potential of the business sector through subsidies for the implementation of innovative projects of enterprises (especially SMEs). The overall purpose was to strengthen the long-term competitiveness, sustainable growth and balanced regional development of the Czech economy. Therefore, a third of the entire allocation focused specifically on this instrument (and in another part of this case study, the results are evaluated in the context of this instrument). The absorption capacity was high – at the end of March 2015, 1,620 projects had been successfully completed.

- The second major part of the allocation was focused on Priority Axis 2 (almost a third of the total financial allocation – after the last OP modification) where five policy instruments were identified. The most important of these is the instrument "Support for the purchase of new equipment with higher technical and operational parameters", the main objective of which was to support the growth of the performance and competitiveness of small and medium-sized enterprises. This was supported to lead primarily to an improvement in their position in the market and the related maintenance of or increase in the number of jobs. The geographic restriction on beneficiaries was a specific feature. The purpose was to support only entrepreneurs in structurally affected and economically underdeveloped regions of the Czech Republic (which are defined by a government resolution). Entrepreneurs were able to purchase new technologies and machinery with higher technical parameters that allowed them to remain competitive. Instruments implemented as a repayable financial support (loans and guarantees) under Priority Axis 2 also had a remarkable
influence. Despite significant audit findings they were important for enterprises as no similar national programmes existed. Both these policy instruments were oriented towards improving the competitiveness of SMEs and the total expenditure exceeded EUR 300 million.

- The third largest allocation was focused on Priority Axis 5,12\(^\text{13}\) where policy instruments supporting an increase in the quality of the environment for the creation and development of innovative entrepreneurship were implemented. An example was the infrastructure (incubators) for new entrepreneurs (especially in cases of innovation-oriented projects). Projects were also supposed to contribute to the intensification of cooperation between businesses and scientific research institutions.

- The remaining priority axes and policy instruments played a rather limited role (as regards the amount of funds allocated). However, again here SMEs were the main target group. An example was the support of relevant consulting services for businesses, promotion of support services focused on marketing and promotion of SMEs, etc.

\(^{13}\) Priority Axis 5 was focused on creating a suitable environment for the creation and development of innovative entrepreneurship. The purpose was to encourage the creation of infrastructure for new entrepreneurs (especially in the case of innovation-oriented projects) in the form of business incubators. In addition, the goal was to expand and improve cooperation between businesses and educational institutions and research and development institutions with the aim of supporting and accelerating innovative processes in businesses (OPEI 2012).
<table>
<thead>
<tr>
<th>Instrument</th>
<th>Logic of intervention</th>
<th>Objective</th>
<th>Mode of delivery</th>
<th>Number of projects</th>
<th>Total expenditure (EUR million)</th>
<th>Priority Axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aid for entrepreneurship (START)</td>
<td>This policy instrument is focused on increasing the motivation to create an enterprise by purchasing of machinery and equipment for leased premises, the renovation of buildings and the initial procurement of inventories.</td>
<td>Growth</td>
<td>Repayable financial support</td>
<td>182</td>
<td>3.4</td>
<td>1</td>
</tr>
<tr>
<td>Aid to SMEs for development and expansion (PROGRESS)</td>
<td>The instrument should enhance the development and expansion of SMEs. This policy instrument is oriented towards improving the competitiveness of SMEs through supporting the implementation of small-scale business development projects of small entrepreneurs with a rather short history.</td>
<td>Growth</td>
<td>Repayable financial support</td>
<td>455</td>
<td>71.13</td>
<td>2</td>
</tr>
<tr>
<td>Aid to facilitate the implementation of business projects in SMEs (GUARANTEE)</td>
<td>The aim is to facilitate the implementation of business projects of SMEs focusing on investment through preferential guarantees and subsidized guarantees with the financial contribution to the secured loan and to increase the competitiveness of these enterprises.</td>
<td>Growth</td>
<td>Repayable financial support</td>
<td>1,984</td>
<td>137.4</td>
<td>2</td>
</tr>
<tr>
<td>Support for the purchase of new equipment with higher technical and operational parameters (DEVELOPMENT)</td>
<td>The instrument support for growth in the performance and competitiveness of SMEs through the purchase of new equipment with higher parameters. It should improve market positions and or increase the number of jobs. Support under this instrument is directed to regions with concentrated state support and to regions with higher unemployment rates.</td>
<td>Growth</td>
<td>Grants</td>
<td>2,796</td>
<td>452.2</td>
<td>2</td>
</tr>
<tr>
<td>Aid to enterprises for access and use of ICT and advanced technologies (ICT and strategic services)</td>
<td>The aim of the instrument is to use subsidies to encourage competitiveness and growth in the ICT sector in the Czech Republic, to encourage the supply of new information systems, ICT solutions, new software products and services. In addition, the instrument aims to support selected strategic services closely linked to information and communication technology.</td>
<td>Innovation AND Growth</td>
<td>Grants</td>
<td>1,754</td>
<td>207.4</td>
<td>2</td>
</tr>
<tr>
<td>Aid to SMEs for access and use of ICT and advanced technologies (ICT in enterprises)</td>
<td>The aim of this policy instrument is to support the competitiveness of SMEs through greater use of their potential in acquiring and spreading the use of modern information and communication technologies, respectively. Support the demand for information and communication technologies to improve the efficiency of small and medium-sized enterprises.</td>
<td>Innovation</td>
<td>Grants</td>
<td>1,651</td>
<td>95.1</td>
<td>2</td>
</tr>
<tr>
<td>Support for innovative performance of firms (INNOVATIONS)</td>
<td>This instrument focuses on stimulating and increasing the innovative activities of SMEs and large firms in both manufacturing and services. The support improves the financial stability of firms producing innovative products, technologies and services. A further objective of this instrument is to support the patent activities of R&amp;D institutions.</td>
<td>Innovation</td>
<td>Grants</td>
<td>1,965</td>
<td>577.8</td>
<td>4</td>
</tr>
<tr>
<td>Establishment or expansion of industrial research, development and innovation centres (POTENTIAL)</td>
<td>The aim of the instrument is to support the establishment and expansion of companies’ capacities for implementation of research, development and innovation activities and to increase the number of companies that conduct their own research, development and innovation. The programme also aims to strengthen cooperation between companies and research and development organisations.</td>
<td>Innovation</td>
<td>Grants</td>
<td>972</td>
<td>228.4</td>
<td>4</td>
</tr>
<tr>
<td>Support of clusters</td>
<td>The objective of this policy instrument is to support the creation and</td>
<td>Innovation</td>
<td>Grants</td>
<td>168</td>
<td>37.5</td>
<td>5</td>
</tr>
<tr>
<td>Instrument</td>
<td>Logic of intervention</td>
<td>Objective</td>
<td>Mode of delivery</td>
<td>Number of projects</td>
<td>Total expenditure (EUR million)</td>
<td>Priority Axis</td>
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</tr>
<tr>
<td>(COOPERATION – clusters)</td>
<td>Development of cooperative sectoral associations/clusters at regional and national levels as a tool for the development of the economy’s competitiveness and economic growth.</td>
<td>AND Growth</td>
<td>Innovation</td>
<td>157</td>
<td>4.6</td>
<td>5</td>
</tr>
<tr>
<td>Support of technology platforms (COOPERATIONS – technological platforms)</td>
<td>The instrument supports the establishment and development of national technology platforms and linkages between the public and private sector in R&amp;D and in strategic major technology areas.</td>
<td>Innovation</td>
<td>Grants</td>
<td>298</td>
<td>200.2</td>
<td>5</td>
</tr>
<tr>
<td>Establishment and development of science parks, transfer centres and incubators (PROSPERITY)</td>
<td>The main objective of this instrument is to use grants to support the establishment and further development of infrastructure for industrial research, technological development and innovation mainly focused on implementing new technologies and competitive products and services.</td>
<td>Innovation AND Growth</td>
<td>Grants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction and reconstruction of infrastructure for education and human resource development of enterprises in selected sectors (TRAINING CENTRES)</td>
<td>The aim of this instrument is to increase the competitiveness of enterprises and businesses through the provision of quality facilities for implementation, organisation and management training, personnel and other activities related to the development of human resources.</td>
<td>Growth</td>
<td>Consulting, advice, technical assistance</td>
<td>744</td>
<td>118.2</td>
<td>5</td>
</tr>
<tr>
<td>Aid to access and use of information and consulting services (ADVISORY SERVICES)</td>
<td>The sense of the instrument is to improve the quality and availability of consultancy, information and educational services for SMEs and thus increase their competitiveness through an integrated approach to advisory services.</td>
<td>Growth</td>
<td>Consulting, advice, technical assistance</td>
<td>463</td>
<td>4.4</td>
<td>6</td>
</tr>
<tr>
<td>Aid to SMEs access to international fairs and market (MARKETING)</td>
<td>The aim of this instrument is to strengthen the international competitiveness of SMEs through individual participation in international fairs and exhibitions.</td>
<td>Growth</td>
<td>Consulting, advice, technical assistance</td>
<td>1,183</td>
<td>26.1</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: internal data MIT – ISOP monitoring system (31. 5. 2015)
Note: PIs marked in bold are evaluated in more detail in the achievements section. The expenditure of these PIs makes up two-thirds of the total expenditure of the programme and cover more than a half of the projects supported.
3.4.1 Implementation and reprogramming

The implementation of the Operational Programme followed the experience obtained in the period 2004–2006 (but also in the period before accession to the EU). The cooperation of two institutions, i.e. the Ministry of Industry and Trade (Managing Authority) and the Business and Investment Development Agency CzechInvest (intermediate body), was especially important for the implementation of the programme. The division of competencies was defined already in the preparation of the OPEI. The intermediate body had a decisive role in the selection of projects, but the first level controls, for instance, are kept within the MA. CzechInvest implemented the OPIE 2004-2006 programme and earlier the pre-accession programme Phare and it also uses the experience and knowledge of these programmes in the implementation of OPEI. Moreover, it has a very large regional representation with several regional branches. Regional representation enables intensive cooperation with the beneficiaries. The set implementation structure has its justification and is based on past experience, when a similarly large operational programme with a high number of companies (grant applicants) was implemented.

With regard to the implementation system, the active approach of both institutions to programme management should be emphasized. Specific steps were taken leading towards real simplification of administration. Based on the evaluation experience of the Czech Republic, it may be generally emphasized that the implementation system is significantly burdened by administrative obstacles. These obstacles are mainly of national character (national legislation, rules, regulations). Administrative problems are emphasized in most operational programmes. In this sense, actions within the OPEI were very positive and proactive. The OPEI implementation system was previously evaluated, for example, within interim evaluations. In this context, the evaluators state, for example, that "measures were taken "inside" the implementation system for the purposes of making the implementation of OPEI more efficient, as well as "outside" in an effort to simplify and make the programme accessible to the applicants, while maintaining and complying with all obligations associated with the implementation of the operational programme co-financed from EU funds" (MIT 2012, p. 10). Such measures include the "electronic support" and communication with applicants/beneficiaries, wide publicity and promotion of the programme, organising seminars in the regions, increasing allocations of calls and accelerating their announcement, ad-hoc measures taken in order to accelerate the administration of project applications and applications for payments, etc.

3.4.2 Reprogramming

In response to the economic crisis, the Czech government has implemented two types of stimulating measures, some of which represented typical, immediate stimuli applicable only for the purposes of softening the impact of the crisis (a typical example is the increase in investments in transport infrastructure construction). Other ones may be seen as tools for promoting competitiveness in long term (export support, legislative and tax regulations, etc.). In total, the volume of such incentives was less than 2% of GDP in the Czech Republic (see more in MIT 2012).

In connection with the implementation of OPEI, cash flow problems on the part of the projects' final beneficiaries and slowed down the implementation of projects as a result of the crisis, because the final beneficiaries did not have enough funds for the necessary co-financing. In this respect, representatives of the Managing Authority tried to be accommodating. One of the realizable options was to divide projects into several stages in order to obtain partial payments and use them to cover additional costs incurred in the project.13F14 Another step was permitting an extension of schedules compared to the original plan of the project implementation etc. However, representatives of the Managing Authority did not implement any specific measures in connection with the

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14 According to official rules the final beneficiary has to ensure sufficient financing for projects since the expenditures incurred are being reimbursed by the MA only ex-post. There are no advances paid to final beneficiaries (compared with OPs financed by the ESF). But the anti-crisis action mentioned was focused on the possibility of dividing projects into several stages.
economic crisis (e.g. the selection criteria for the acceptance of the project did not change - projects had to maintain quality regardless of the crisis).

Five packages of revisions were approved by the European Commission during the implementation of the OP. The changes mostly concerned the following areas of intervention: reallocation of financial resources; changes in target values of relevant OP indicators; changes in the method of calculation of the EU contribution in relation to the total eligible expenditure; and some formal (technical) changes (AIR, 2013). The reallocation was always justified by low absorption, while the means were directed at interventions with a high demand from applicants (mainly SMEs) to avoid loss of funds.
4 EVIDENCE ON ACHIEVEMENTS

4.1 Measuring achievements

The key monitoring system for OPEI is the so-called ISOP7-13. The monitoring system helps in managing the operational programme and in securing the necessary data for monitoring and evaluating the programmes and projects, including regular data collection from beneficiaries for the purposes of monitoring the progress of project implementation. Structured interviews confirmed that the monitoring system is fully functional and user friendly. It enables the creation of fast, but also detailed, reports on current progress. Data are updated every 24 hours. The system manages thousands of registration applications and a significant problem has yet to be encountered. Despite this, the so-called single monitoring system, which will be the same for the entire implementation structure, is currently prepared in the Czech Republic for the period 2014-2020.

The added value for the evaluation and measurement of the results achieved is the amount of data that are monitored in the ISOP system. The Managing Authority collects a number of corporate (business) indicators, which include not only data on grants and the physical progress of projects, but also various economic variables (e.g. value added, sales, turnover, etc.). Thanks to that, it is possible to clearly monitor the possible impact and benefits of grants on the subsidized companies. The scope of collected data is unique to OPEI, as the majority of other Managing Authorities monitor only project indicators (and only in the basic form, i.e. mandatory indicators).

The ISOP 7-13 information system was created to allow fully electronic support and communication between the applicant and representatives of the Managing Authority. This again is unique because most of the operational programmes still use paper (printed) documents that must be delivered in person, which causes unnecessary administrative obstacles. In this sense, the fully electronic environment of the OPEI is highly appreciated by the beneficiaries.

The evaluation activities of the Managing Authority can be highlighted. During the period 2007-2013, it commissioned 25 external evaluation studies. Some studies responded to the ad hoc current needs of the Managing Authority, but all of them were performed in accordance with the so-called evaluation plan. The majority of evaluations were more focused on evaluating the processes and less on the results/impact. Many aimed to evaluate the administrative procedures and the set-up of the monitoring system, some focused on material progress (including interim evaluation) and, last but not least, there were evaluations aimed at assessing and targeting the follow-up programme for the next programming period (ex-ante evaluation). But assessing the benefits and impact through counterfactual impact evaluation methods is a very positive specificity.14 This way, the most significant support policy instruments within the OPEI (a total of three evaluation studies) were evaluated. A total of five key policy instruments (Support for innovative performance of firms, Establishment or expansion of industrial research, development and innovation centres, Support for clusters, Aid to enterprises for access and use of ICT and advanced technologies, Support for the purchase of new equipment with higher technical and operational parameters) were assessed by counterfactual impact evaluation. It was already possible to use this method in 2012, when there were a sufficient number of completed projects. The fact that the evaluated effects of OPEI grants were related to the period of economic crisis in the Czech Republic (2008-2010) is even more valuable. Moreover, thanks to good data records from the monitoring system (value added, turnover), it was possible to monitor the influence on the economic indicators of subsidized and unsubsidized companies. The results of the counterfactual impact evaluation will be further processed in this case study.

Beyond the scope of the evaluation activities, great attention was also paid to case studies that present the most successful examples of projects (so-called best practice) in

15 Concerning the quality of the methodology, these evaluations were based on combination of primary data (questionnaire, survey) and quantitative data (firm-level data) in both categories (with and without grants). Critically should be emphasized that advanced statistical analysis have not been used (such propensity score matching or instrumental variables etc.).
individual programmes (policy instruments). The purpose was both to positively present the OPEI, but especially also to inspire other potential applicants.

Overall, we can summarize that measuring achievements is implemented at several levels. The functional monitoring system, which contains a large amount of current data and information (approximately 160 indicators) not only of a project nature, as well as firm-level data (turnover, value added, etc.) can be emphasized. Generally there are many output indicators and fewer results or impact indicators. However, compared to other OPs in the Czech Republic, the monitoring system and the whole process of collecting data are well developed. The system provides support in both material and financial terms. With such complexity of services, the administrative burdens of the Managing Authority and the applicant are eased.

4.2 **Characteristics of the assisted SMEs**

The majority of applicants and beneficiaries are SMEs (in line with the adopted OPEI, at least two-thirds of the funds must be allocated to SMEs by the end of 2014, in fact 87% of the allocation was directed at SMEs). Some policy instruments also allow aid to large enterprises or non-business entities (public research institutions, universities and other educational institutions, including private, local governments, non-profit organisations etc.).

Geographically, almost all policy instruments are implemented in all cohesion regions in the Czech Republic (those regions that belong to the "Convergence" objective – meaning all regions other than Prague metropolitan region, which is excluded from OPEI support). However, there are exceptions and, for example, the "Support for the purchase of new equipment with higher technical and operational parameters" policy instrument is aimed only at beneficiaries in economically weak and structurally affected regions. Such selective aid has a stabilizing role in economically undeveloped regions. The purpose is to support existing businesses that are often dominant employers in disadvantaged regions. Experience shows that there was great interest in this type of support for enterprises that "just" want to keep up with the competition (high absorption capacity, the highest number of applications and supported projects). Selective support only in regions with concentrated state support appears to be appropriate. The sensible setting of priorities and supported activities of individual policy instruments contributed to the high interest of SMEs.

Despite the above, the main purpose of the programme was to promote industries and companies that are or have the potential to become competitive on the European and global scale. Therefore, the aid was aimed at the use of new knowledge in science and research, implementation of innovative measures, support for quality workforce and a functioning network of services for entrepreneurs.

At the end of 2014 a grant or loan/guarantee agreement was provided to 11,168 SMEs and 571 large enterprises (AIR15F16 2014). It is therefore evident that the specified objective of promoting SMEs is being fulfilled. Policy instruments that allow support for large enterprises as well as SMEs achieved a real share of subsidies provided to SMEs of between 60.5% and 100%. Other entities of a non-corporate nature that applied for subsidies include universities, public research institutions, local governments and organisations established by them. These institutions were recipients of grants especially within policy instruments focused on developing infrastructure for industrial research, technological development and innovation. In connection with support for innovation infrastructure for newly established innovation companies, the policy instruments also focus on supporting the establishment, operation and further development of business incubators. By the end of 2014, these entities were granted support for a total of 88 projects (AIR 2014).

In terms of technological intensity of the fields in which the companies supported by the programme operate, the situation is relatively uniform. Although companies classified as "low tech" dominate (36%), a significant share is claimed also by "medium high tech"
and "high tech" companies (see Figure 9). Considering the previously described facts about the economic structure of the Czech Republic, these results are not surprising. As a result of the influx of foreign investment and the weak position of Czech companies in global production networks, production of rather simple products with low added value prevails. However, OPEI interventions are intended to contribute to a change in the orientation of companies towards more technology knowledge-intensive products that will be competitive in global markets.

According to the NACE classification of economic activities, the largest number of supported entities (75%) come under C – Manufacturing. Given the strong industrial tradition not only of the automotive industry in the Czech Republic, these results were only to be expected.

**Figure 8. Assisted beneficiaries by size and technologic intensity**

![Diagram showing the distribution of assisted beneficiaries by size and technologic intensity.](image)

Source: own processing based on AIR

**Figure 9. Assisted beneficiaries by NACE**

<table>
<thead>
<tr>
<th>NACE Classification</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Agriculture, forestry and fishing</td>
<td>7</td>
</tr>
<tr>
<td>B - Mining and quarrying</td>
<td>3</td>
</tr>
<tr>
<td>C - Manufacturing</td>
<td>3508</td>
</tr>
<tr>
<td>D - Electriciy, gas, steam and air conditioning supply</td>
<td>7</td>
</tr>
<tr>
<td>E - Water supply; sewerage, waste management and remediation</td>
<td>22</td>
</tr>
<tr>
<td>F - Construction</td>
<td>241</td>
</tr>
<tr>
<td>G - Wholesale and retail trade; repair of motor vehicle and motorcycles</td>
<td>207</td>
</tr>
<tr>
<td>H - Transportation and storage</td>
<td>9</td>
</tr>
<tr>
<td>I - Accommodation and food service activities</td>
<td>3</td>
</tr>
<tr>
<td>J - Information and communication</td>
<td>359</td>
</tr>
<tr>
<td>L - Real estate activities</td>
<td>12</td>
</tr>
<tr>
<td>M - Professional, scientific and technical activities</td>
<td>243</td>
</tr>
<tr>
<td>N - Administrative and support service activities</td>
<td>6</td>
</tr>
<tr>
<td>P - Education</td>
<td>37</td>
</tr>
<tr>
<td>Q - Human health and social work activities</td>
<td>1</td>
</tr>
<tr>
<td>R - Arts, entertainment and recreation</td>
<td>1</td>
</tr>
<tr>
<td>S - Other service activities</td>
<td>30</td>
</tr>
</tbody>
</table>

Source: own processing based on AIR

### 4.3 Achievements

In this part the results and impacts are first evaluated at the programme level and then at the level of selected policy instruments.16 The most important part is dedicated to the evaluation of the instrument called "Support for innovative performance of firms" that can be described as the flagship of the programme. Other policy instruments are

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17 The data presented in this section is more up to date than that reported in the OP fiche included in the First Intermediate Report – Volume II.
briefly evaluated in the other parts for a comprehensive expression of effects. The purpose is not to describe all of the identified instruments, but only the most significant ones (they are marked in colour in Table 2). Overall, achievements are analysed using the example of seven policy instruments. The expenditure of these instruments makes up two-thirds of the total expenditure of the programme and covers more than a half of the projects supported.

### 4.3.1 Results at the programme level

The objective of the OP is gradually fulfilled using various types of policy instruments. OPEI had an influence in various spheres of supported companies (employment, market potential, etc.). This included increased motivation to start a business, intensification of the activity of small and medium-sized enterprises, introduction of new production technologies, intensification of the development of information and communication technologies, introduction of innovative technologies, products and services, improvement of the infrastructure for industrial development or intensification of development in consulting services. Many significant results were achieved at the level of the entire programme. Overall, 11,965 projects (including financial instruments) were supported (as of March 2015) and 35,566 jobs were generated by the operational programme (of which 28.4% were women). Of the above figure, 4,619 jobs were created in research and development. Generally one can emphasize that ERDF support through the OPEI is helping to combat the after-effects of the economic recession by maintaining public investment levels. On the other hand, there is still little available data and evidence that can confirm whether ERDF support made a significant contribution in context of competitiveness.

#### Table 3. Values of selected monitoring indicators for OP Enterprise and Innovation

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Cut-off date</th>
<th>Unit</th>
<th>Projected</th>
<th>Realized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly created jobs</td>
<td>13.3.2015</td>
<td>Number</td>
<td>40,000</td>
<td>35,731</td>
</tr>
<tr>
<td>Newly created jobs - R&amp;D</td>
<td>13.3.2015</td>
<td>Number</td>
<td>3,100</td>
<td>4,738</td>
</tr>
<tr>
<td>Share of innovated products on turnover of supported firms (%)</td>
<td>13.3.2015</td>
<td>%</td>
<td>15.2</td>
<td>25</td>
</tr>
<tr>
<td>No. of new CTT and of Science and Technology Parks</td>
<td>13.3.2015</td>
<td>Number</td>
<td>55</td>
<td>57</td>
</tr>
<tr>
<td>No. of new business incubators</td>
<td>13.3.2015</td>
<td>Number</td>
<td>40</td>
<td>39</td>
</tr>
<tr>
<td>No. of newly installed technology (devices, machines etc.)</td>
<td>13.3.2015</td>
<td>Number</td>
<td>9,025</td>
<td>11,000</td>
</tr>
<tr>
<td>Growth of added value in supported firms</td>
<td>13.3.2015</td>
<td>%</td>
<td>30</td>
<td>57</td>
</tr>
</tbody>
</table>

Source: MIT – ISOP monitoring system

### 4.3.2 PI – Support for innovative performance of firms

In the next section of this chapter specific attention is paid to the main policy instrument, which was aimed at making a significant contribution to the competitiveness of enterprises. Specifically, these were grants for the development of technical and non-technical innovation in enterprises, including the development of their cooperation with research and development organisations, and the strengthening of their own company capacities for R&D and related activities. The purpose was to significantly strengthen innovative activities and the number of enterprises that conduct their own research and development. Below are an overview and the achieved status of indicators that were monitored and achieved under this policy instrument. The results show very detailed records of project and corporate indicators that are associated with the beneficiaries.
### Table 4. Values of selected monitoring indicators: PI – Support for innovative performance of firms

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Cut-off Date</th>
<th>Unit</th>
<th>Realized</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch of new or innovative products (a)</td>
<td>13.3.2015</td>
<td>Number</td>
<td>1,179</td>
<td>Total number of new or innovative products.</td>
</tr>
<tr>
<td>The introduction of new or innovative production processes or provision of services (b)</td>
<td>13.3.2015</td>
<td>Number</td>
<td>708</td>
<td>Total number of new or innovative processes.</td>
</tr>
<tr>
<td>Introduction of new methods of organising company processes and cooperation with companies and public institutions (c)</td>
<td>13.3.2015</td>
<td>Number</td>
<td>12</td>
<td>Total number of new or innovative methods.</td>
</tr>
<tr>
<td>Introduction of new sales channels (d)</td>
<td>13.3.2015</td>
<td>Number</td>
<td>20</td>
<td>Total number of new or innovative sales channels.</td>
</tr>
<tr>
<td>Revenue from the sale of innovative products</td>
<td>13.3.2015</td>
<td>Thousand CZK</td>
<td>Currently not available</td>
<td>Revenue from the sale of own new or innovative products and services</td>
</tr>
<tr>
<td>Revenue</td>
<td>13.3.2015</td>
<td>Thousand CZK</td>
<td>Currently not available</td>
<td>As per the profit and loss account - (sales of own products and services)</td>
</tr>
<tr>
<td>Added value</td>
<td>13.3.2015</td>
<td>Thousand CZK</td>
<td>Currently not available</td>
<td>Added value shown in the profit and loss account.</td>
</tr>
<tr>
<td>Newly created jobs</td>
<td>13.3.2015</td>
<td>Number</td>
<td>4,385</td>
<td>Number of newly created recalculated gross jobs associated with project implementation; reported in FTE - equivalent to annual working time.</td>
</tr>
<tr>
<td>Newly created jobs - R&amp;D</td>
<td>13.3.2015</td>
<td>Number</td>
<td>Currently not available</td>
<td>Number of newly created recalculated gross jobs in research and development associated with the implementation of the PI activity; reported in FTE - equivalent to annual working time. Researchers and technical and equivalent workers, whose activities are a direct service to R&amp;D, are considered research and development workers.</td>
</tr>
<tr>
<td>Labour productivity per employee</td>
<td>13.3.2015</td>
<td>Currently not available</td>
<td>= added value/average number of employees</td>
<td></td>
</tr>
</tbody>
</table>

Note: some indicators were not available during the preparation of the case study, but the information is collected in the monitoring system for future evaluation.

The main benefits of the policy instrument are listed below based on structured interviews with beneficiaries, interviews with representatives of the Managing Authority, as well as the externally processed counterfactual impact evaluation for the MA and examples of best practice.

#### 4.3.3 Evidence of investments generated

Current knowledge suggests that 87% of the projects of supported companies would not have been implemented without grants (based on evaluation survey - MIT 2011). If they had not received grants, most companies would have postponed the implementation of their projects for a few years. It is therefore clear that the OPEI projects helped to accelerate development in companies, where the development was planned but financial resources were lacking. Moreover, it was shown that without grants under this policy instrument the amount of investment in new technologies would have been limited as well (by as much as 52%). Although these numbers were recorded in 2011, a similar effect can be expected for current projects. The projects enabled a substantial increase in capacity, efficiency and partly also in the volume of production. One very important contribution of the projects was, however, that in most cases they enabled the introduction of such product or process innovations that the relevant enterprises had to introduce to be able to stay competitive with other companies on the market. From the perspective of the beneficiaries, it was crucial especially in reducing the production costs...
and increasing their efficiency and capacity. In many cases, they succeeded: see the examples of "best practice" (MIT 2011). Although the above results seem to be very positive, some critical aspects were not evaluated. For example, it is not clear to what extent supported companies will be able to replace the purchased technology and equipment using their own resources (over the years). An analysis of demand for the post-2014 period indicates an increased reliance of companies on external sources of financing. The question of long-term sustainability of all these positive effects of the interventions is therefore unclear. Ideally, it is expected that positive cumulative mechanisms will be triggered by the projects and some companies could change the position in global production networks. However, increases in competitiveness may only be temporary for many companies.

Based on a questionnaire survey conducted on behalf of the Managing Authority, it is clear that thanks to the implemented innovative projects, 61% of enterprises managed to gain a competitive advantage and 35% of them managed to keep up with their competitors. The beneficiaries frequently emphasize the reduction in prices of products/services, an improvement in their quality, but also the introduction of completely new products. These factors contribute significantly to increasing the competitiveness of the companies concerned as well as the Czech economy as a whole. Interviewees also confirmed that new products contribute increasingly to sales (after the completion of project implementation). The total volume of production is, on average, 24% higher than the year prior to project implementation (MIT 2013). In addition, it is necessary to emphasize that this survey was carried out in a period of strong economic crisis accompanied by reduced demand. The resulting effects of policy instruments can therefore be evaluated extremely positively.

Specifically, we can describe the counterfactual situation17F18 of a group of enterprises supported and unsupported by this policy instrument. Selective samples of projects supported in 2008 and 2009 were evaluated. Positive impacts of projects on the competitiveness of enterprises were confirmed in both groups. At the time of a sharp contraction in demand for products, the projects had a stabilizing role (compared to a decline in unsupported companies). In 2009 most supported companies reported positive developments (in terms of manufacturing and employee productivity, etc.). The investments realized clearly contributed to improving the quality of innovative products, which often allowed SMEs to increase production and possibly also expand into new markets. Changes in supplier-customer relationships were also marginally evaluated. Generally, there was an increase in the number of customers (after the completion of implementation) and a decrease in the number of suppliers in the supported companies. This policy instrument probably also contributed to a change in supplier relationships. This topic could be further explored in detail in the future because of the strong connection of the Czech economy to global production networks. However, as mentioned previously, the key issue is the long-term sustainability of all these positive effects. The reliance of companies on external financial sources is increasing and therefore gains in competitiveness may only be temporary for some of them.

### 4.3.4 Evidence of employment effects

Impacts on employment in supported companies should be evaluated carefully, because the operational programme is not focused primarily on supporting employment, but rather on supporting competitiveness. In the case of the policy instrument, which is evaluated in this chapter, this applies twice as much. The processed analyses (MIT 2011) showed that enterprises supported within the OPIE maintained employment at a relatively unchanged level in times of economic crisis. On the other hand, the control group of enterprises without grants tended to lay off many more employees. Of course, this is true in all cases, but the described tendencies were demonstrated. This shows that a side effect of innovative projects was a certain stabilizing role in the area of employment. At the same time, the supported enterprises started to utilize part-time workers much more frequently. In general, however, the supported enterprises managed

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18 Based on the counterfactual study "Evaluation of Economic Effects and Settings - Support Programmes Innovation, Cooperation and Potential OPEI" (MIT 2011).
to respond very efficiently in the face of a collapse in demand. They significantly reduced personnel costs but they kept more employees than other enterprises.

4.3.5 Evidence of research and innovations

The purpose of the evaluated policy instrument was the development of technical and non-technical innovation in enterprises, including the development of their cooperation with research and development organisations, and the strengthening of their own company capacity for R&D and related activities. The output and result indicators of this type are presented in the table above. In addition to information from the monitoring system, additional analyses focusing on this were performed (MIT 2011). A survey of beneficiaries showed that "the implemented project resulted in the introduction of a new product by most respondents (91%); 61% of respondents reported a change in the properties of previously offered products e.g. due to an increase in quality, technical or utility values; 13% of them increased value added/processing stages of the product; 9% of respondents replaced the input previously purchased from suppliers by their own production of this input". It is therefore evident that corporate research and related grants allowed an increase in the value added of final products.

The aim of the intervention was also to promote cooperation between companies and research institutions. In this context, it was found that highly innovative companies had cooperated with scientific institutions already prior to the actual project implementation. The grants did not significantly affect such cooperation. It is, thus, clear that those who want to cooperate find their partners in the research sector and collaborate (or already collaborated prior to obtaining the project). The contribution of the supported projects is rather neutral. It cannot be expected that OPEI projects will fundamentally change this situation because of less developed research and innovation systems (but certain progress should be made and projects contribute to a change in the behaviour of companies and research institutions). The Czech Republic is one of the Central and Eastern European countries with the highest fragmentation in regional innovation systems, in which there is no tradition of firm-university linkages and distrust between these institutions prevails (more in Isaksen, Trippl 2014).

4.3.6 PI - Support for the purchase of new equipment with higher technical and operational parameters

This instrument is implemented within Priority Axis 2. The main purpose is to stimulate the development of SMEs in selected regions (great emphasis is placed on structurally affected regions). The aim was to promote the purchase of new technologies, thus allowing the maintenance and development of existing employment. The purchases of new technologies should contribute to streamlining production processes, improving the product quality, increasing production volumes, etc. By focusing on economically less efficient regions, this instrument significantly supports one of the fundamental objectives of the Cohesion Policy, specifically the very idea of promoting regional cohesion. The investments were aimed at improving the situation of enterprises in terms of their competitiveness, either directly by obtaining a competitive advantage or by catching up with the competition. In less developed regions, it was more about keeping up with the competition.

Not only the beneficiaries and applicants themselves, but also representatives of consulting companies and the managing and mediating authority of OPEI (MIT 2011c) are convinced of the benefits for the competitiveness of the supported businesses. On the other hand, it is necessary to critically say that the positive perception is influenced by rather high absorption capacity and great interest on the part of companies. A total of 3,220 projects have been supported and the expenditure has exceeded EUR 268 million. Although this is a regionally limited instrument, the largest number of applications of the entire programme were submitted for it.
Table 5. Values of selected monitoring indicators: PI - Support for the purchase of new equipment with higher technical and operational parameters

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Cut-off date</th>
<th>Unit</th>
<th>Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly created jobs</td>
<td>13.3.2015</td>
<td>Number</td>
<td>5,889</td>
</tr>
<tr>
<td>Newly created jobs - R&amp;D</td>
<td>13.3.2015</td>
<td>Number</td>
<td>239</td>
</tr>
<tr>
<td>Technology installation - the number of newly installed technologies (machines, equipment or machine assemblies, equipment used for production or trade)</td>
<td>13.3.2015</td>
<td>Number</td>
<td>9,025</td>
</tr>
</tbody>
</table>

Note: The target values are determined only at the level of priority axes and not at the level of policy instruments

The results and impacts were evaluated for the Managing Authority in 2010 and 2011. The dead weight of the instrument may be estimated at about 51% based on a questionnaire survey. This means that about a half of the investments would have been implemented without grants. Companies would have implemented certain investments without grants, but they would instead have been purchases of older technologies or an older or smaller/less efficient machine. The investment time schedule is also important. Most companies would not have been able to invest to such an extent. About 33% of companies would have postponed the investment by one to two years. This shows that the intervention accelerated the purchase of machinery and technology. However, the question is to what extent these companies are able to renew their technology in future years when similar interventions are no longer supported. From the short-term perspective, these effects are apparent, but from the long-term perspective they may be questionable. Largely, the target group were not businesses with a high innovation potential, but rather companies producing products with low added value. Effects on employment were also examined through counterfactual evaluation. In this case, it showed that there was a more radical decline in employment in the supported group than in the control group of businesses without support. This development may be due to the fact that the new technology increases labour productivity. It is therefore evident that the impact of the investment on employment can vary. Thanks to the new technologies, business became more competitive, but with lower demands on the size of the labour force (MIT 2011c).

It became clear that the purchases of technology significantly contributed to an increase in production capacity (by about 22%-23%). There was also an increase in the quality of products and their properties, which is an important factor for further development from the perspective of beneficiaries.

Overall, however, this instrument is slightly questionable. On the one hand, there is high demand and interest from applicants. On the other, it is an intervention that to some degree addresses "only" the infrastructural handicaps of companies (purchases of new machinery). The big question is the sustainability and long-term benefits of the investments. The instrument supports "normal" companies without innovation potential. The role of this instrument is one of providing stability (at least in the short-term). The great interest in this instrument confirms the previously mentioned fact that many companies in the Czech economy are dependent on industry and produce rather simple products with lower added value. There are only a limited number of innovation leaders.

4.3.7 PI - Aid to enterprises for access to and use of ICT and advanced technologies

This instrument was supposed to promote the range of new information systems, ICT solutions, new software products and services. This instrument was indirectly aimed at developing an information and knowledge society. Last but not least, the purpose was to develop human resources and to create skilled jobs in the service sector.
This policy instrument was also evaluated externally. The results confirm that the investments promoted the emergence of new IS/ICT solutions and applications in companies. Critically, however, it can be noted that part of the support (about 32%) is used for a simple "upgrade" of currently provided products/services. The added value may be questionable in such cases. At the same time, it showed that the vast majority of projects are based on the long-term strategic plans and priorities of the supported businesses. The programme, thus, has the ability to significantly accelerate the implementation of business plans in supported businesses - without support they would probably have been implemented in gradual steps over a significantly longer time and usually to a more limited extent (MIT 2011b).

Generally, however, the investments supported an increase in the efficiency of production in supported businesses. The evaluation also showed that the effects of the crisis and the decline in sales were significantly mitigated in the supported businesses due to the fact that the projects allowed them to focus their capacities on the development of new products that subsequently helped to increase their competitiveness.

The impacts of the instruments on human resources development cannot be overestimated – specific training is provided in close connection with the implemented project only in about 40% of cases. In most cases, the human resources development would have occurred even without the support – it has an impact only in the form of improving the quality of employee education.

### 4.3.8 PI - Establishment or expansion of industrial research, development and innovation centres

The instrument "Establishment or expansion of industrial research, development and innovation centres" should support the introduction and improvement of the capacities of companies for the implementation of research, development and innovation activities. At the same time, it should contribute to an increase in the number of businesses that carry out their own research, development and innovation. Lastly, the aim was to strengthen cooperation between companies and research and development organisations and to improve conditions for the participation of companies in national and European research and development programmes.

### Table 6. Values of selected monitoring indicators: PI - Aid to enterprises for access and use of ICT and advanced technologies

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Cut-off date</th>
<th>Unit</th>
<th>Realized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly created jobs</td>
<td>13.3.2015</td>
<td>Number</td>
<td>9,525</td>
</tr>
<tr>
<td>Cooperation within partnerships and networks between educational institutions, research centres and businesses (horizontal mobility)</td>
<td>13.3.2015</td>
<td>Number</td>
<td>872</td>
</tr>
<tr>
<td>Newly created jobs - R&amp;D</td>
<td>13.3.2015</td>
<td>Number</td>
<td>2,433</td>
</tr>
</tbody>
</table>

Note: The target values are determined only at the level of priority axes and not at the level of policy instruments.

### Table 7. Values of selected monitoring indicators: PI - Establishment or expansion of industrial research, development and innovation centres

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Cut-off date</th>
<th>Unit</th>
<th>Realized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly created jobs</td>
<td>13.3.2015</td>
<td>Number</td>
<td>1,140</td>
</tr>
<tr>
<td>Newly created jobs - R&amp;D</td>
<td>13.3.2015</td>
<td>Number</td>
<td>812</td>
</tr>
<tr>
<td>Results of the centre (number of product/technology innovations of the fifth and higher order generated due to the activity of the centre)</td>
<td>13.3.2015</td>
<td>Number</td>
<td>28,404</td>
</tr>
</tbody>
</table>

Note: The target values are determined only at the level of priority axes and not at the level of policy instruments.
These declarative objectives were verified within the evaluation of results for the Managing Authority. The impact of the grant on the implementation of projects is absolutely clear - 89% of respondents would have implemented the project on a much smaller scale, or to half the extent. They would also have delayed the time of implementation of the projects, usually by one to two years. It showed that the projects contributed to increased efficiency in supported businesses. Overall, the costs were reduced in the case of 67% of respondents. In most projects, the investment had an impact on accelerating the production process (MIT 2011a).

Intensive cooperation with educational or research institutions was also proven. More than half of respondents within the project cooperated with educational or research institutions (52%). This was mostly a follow-up to previous cooperation. We cannot reliably say that the projects initiated an entirely new cooperation. In most cases, previous connections were supported and enhanced.

The situation is unclear in terms of the effects on employment. In the monitored years, employment in supported businesses stagnated or even declined. The control group of companies without support behaved similarly or even hired new employees.

4.3.9 PI - Support of clusters and technology platforms

Both policy instruments were aimed at supporting the creation and development of sectoral cooperation - clusters and technology platforms. The basic purpose was to support the creation of a favourable business environment, the improvement of the conditions for entrepreneurship and innovation, and the improvement of the links between research and the business sphere.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Cut-off date</th>
<th>Unit</th>
<th>Realized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly created jobs</td>
<td>13.3.2015</td>
<td>Number</td>
<td>519</td>
</tr>
<tr>
<td>Newly created jobs - R&amp;D</td>
<td>13.3.2015</td>
<td>Number</td>
<td>295</td>
</tr>
<tr>
<td>Joint projects in research, development and innovation</td>
<td>13.3.2015</td>
<td>Number</td>
<td>211</td>
</tr>
<tr>
<td>Associated entities</td>
<td>13.3.2015</td>
<td>Number</td>
<td>903</td>
</tr>
</tbody>
</table>

Note: The target values are determined only at the level of priority axes and not at the level of policy instruments

The evaluation findings proved that the participation of businesses in activities of the supported clusters and platforms led to the diversification of production/introduction of new products. These new products represent on average 22% of the total number of products offered by the businesses involved. With diversification and cooperation, companies were able to eliminate business risks. Participation of businesses in the activities of the cluster also helped to improve product quality. Most companies involved in clusters also confirmed the possibility of responding more quickly to trends in demand for products/services (MIT 2011).

However, the effects on employment are unclear. MIT evaluation results (2011a) on the example of two clusters show that employment in supported businesses was decreasing, while businesses without support reported completely the opposite (but the situation is significantly influenced by the specific cases and situations of evaluated clusters – it cannot be considered as a general trend.). Different effects were also reported in connection with labour efficiency. However, the situation was strongly influenced by the sectoral focus of the cluster/technology platform and other factors. The specific development of individual clusters can be emphasized in connection with this instrument. The impacts cannot be easily generalized (MIT 2011).

The promotion of cooperation with various types of institutions was undoubtedly positive. Within their participation in a cluster, nearly 55% of businesses cooperated with scientific research institutions (universities, research institutes, scientific research institutions, etc.). Most often, this was cooperation with one or two educational institutions. The
participation of research and educational institutions in the activities of supported clusters contributed to further developing their cooperation with businesses in two thirds of cases.

4.3.10 Evidence of synergy linkages

Synergy linkages should also be mentioned in the context of the above condition and the projects' contribution to firm level research and innovation. Many enterprises became beneficiaries under different policy instruments. This accumulates and multiplies the potential effect of the entire programme. A typical example is the purchase of new technologies, machines and support for collaboration of other services.

Specifically, it is necessary to mention the potential linkages between the OPEI and OPRDI (Operational Programme Research and Development for Innovation). Although mutual synergies were expected at the beginning of the programming period 2007-2013, the reality is different. Targeted synergies are quite rare, despite the fact that they could significantly contribute to enhancing the achievements. There are several reasons: a) the long delay in the implementation of OPRDI research projects (European centres for excellence), b) the possibility of linking these centres with potential partners, i.e. companies, was also significantly underestimated, c) many centres did not carry out an analysis of demand for their services and products at the beginning, d) distrust prevails between companies and research centres and there are no visible efforts to remove these barriers in a targeted manner. However, there are also positive cases. In some cases (e.g. COMTES FHT a.s.), after the purchase of laboratory equipment, the beneficiary also became a beneficiary within the OPRDI. The result was the construction of a highly competitive regional centre which is one of the best in Europe in its field (i.e. in research of prospective metallic materials and the technology of their production and industrial applications).

Specific linkages can be identified in relation to the EU research programme. Some companies that cooperate with research centres (with support from OPRDI) and also receive a grant from the OPEI are also active and try to be successful, for example, in the HORIZON 2020 or FP7 programmes. In total, private businesses account for about 31% of all types of institutions where they are in the position of a project partner or coordinator within the HORIZON 2020 programme (however, the project was supported only in 13% of cases). Some of these businesses benefit from ERDF support as well. In the case of FP7, the companies also represented about 30% of all types of applicants, but the success rate was higher, i.e. about 21% of projects were supported. It is important to note that there is a relative overlap between OPEI beneficiaries and applicants in the above EU research programmes. In general, however, it appears that companies are still not sufficiently active players in this field. Critically, it is necessary to note that not even the newly-built research centres within OPRDI show a high activity, which may indicate a problem within the period of sustainability.

4.4 Mechanisms and conditions for behavioural changes

There are many attributes, mechanisms and conditions that are critical for behavioural changes and the enhancement of SMEs.

First, the absorption capacity and its consequences. Projects supported by OPEI allowed companies to significantly increase their competitiveness on European markets. Based on the obtained information (MIT 2011), the absorption capacity will remain high in the future programming period. According to the survey, up to 90% of businesses that have already received at least one grant from the OPEI plan to actively use the opportunities of the follow-up operational programme. Approximately 60% of companies that have never been supported are considering it. Companies that definitely do not want to apply for any grants most often mention the unsuitability of the focus of the priorities and challenges of the programme compared to their business activities. At the same time, they also mention administrative demands and the complexity of the process of obtaining grants. It is, therefore, clear that despite the many adjustments and simplification of the

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19 From programme implementation until April 2015.
rules and the environment for obtaining grants, the process is still considered complex by numerous companies.

Second, one can emphasize the project quality. Structured interviews at the Managing Authority and intermediate body level also confirmed that there is an evident change in the behaviour of beneficiaries. The submitted projects can be long seen as projects of higher quality and better prepared than at the beginning of the programming period. Therefore, experience and good awareness and preparation of underlying materials for the application were apparent.

The third involves the well-developed monitoring system and the whole environment for project implementation. The "computerisation" of the environment, in which the applications, evaluations and possibly the implementation of the entire project occur, has significantly helped the entire process of programme implementation. Thus the prepared environment for applications will affect the programming period post-2014. A similar mechanism for grant administration is currently being used in all operational programmes. Beneficiaries have thus gained valuable experience and knowledge.

An important mechanism for implementation was the setting up of communication processes. The established system of communication can be considered relatively successful in perspective, inasmuch as potential applicants know where to go and how to obtain the necessary background information for their decision to seek support. Substantially lower levels of satisfaction was recorded (based on evaluation studies) for the quality of the information provided and the availability of the specialist information necessary for the effective preparation of a competitive project. However, communication channels improved during the programme period. In this context it is also necessary to mention another aspect. The establishment of many consultancy firms that focus exclusively on “writing” projects for OPEI helped to increase the flow of information and improve absorption capacity. Applicants have learned to communicate with these entities, allowing them to reduce administrative requirements (consulting companies have been able to prepare a turnkey project application).

Last but not least, positive effects induced by the creation of profit were identified in a number of OPEI projects. Enterprises have begun to support (or started more than in the past to support) e.g. adjustment of the company’s environment (e.g. access road, lawns, planting trees), local community amenities and public institutions or non-governmental organizations. Such behaviour changes were revealed in the evaluation analysis (MTI 2011a).
Support for the enterprise environment was one of the three main priorities of regional development policies over the period 2007-2013. In comparison with other operational programmes in the Czech Republic, this was a well-prepared programme with a very high level of interest among applicants that was effectively managed, among other things, also thanks to the experience of the previous period (e.g. it uses a fully electronic environment for the beneficiaries - as the only one in the Czech Republic, it had one of the most elaborated monitoring systems, etc.).

The OPEI programme was set up to contribute to an increase in competitiveness in industry and to maintain the attractiveness of the Czech Republic and its regions and cities for investors. The programme was set up so that the individual policy instruments support a wide range of activities such as promotion of innovation, accelerated implementation of the results of research and development in the manufacturing sector, especially through stimulating demand for the results of research and development, commercializing the results of research and development, supporting entrepreneurship, introducing new technologies and product innovations, including new information and communication technologies. On the other hand, it is necessary to emphasize that the defined strategy doesn't include a clear definition of the entrepreneurial environment that should be achieved at the end of the programming period. For this reason, the spectrum of supported activities and interventions is very broad. Furthermore, it is evident that the majority of policy instruments relate to “hard” investments and fewer to support of local entrepreneurial initiatives and “soft” innovation projects.19F20

The strong focus of the OPEI programme on SMEs is evident (about 86% of the supported entities belong to the category of SMEs) and it relates to the structure of companies. In the long term, however, the competitiveness of SMEs must be based primarily on their innovative competitive advantage (low innovation activity among SMEs is characteristic of the Czech Republic). Some policy instruments were also set up in this sense. In this context, the “PI - Increasing the innovative performance of firms” can be referred to as the programme “flagship”. These projects were used primarily to upgrade the SMEs to a higher level of quality. However, there was also similarly high demand (in terms of the absolute number of applicants for the whole OP) for the policy instrument that supported “only” the renovation of machines and technologies (in order to "keep up" with international competition). This situation shows that SMEs have limited resources for technical equipment and the renovation of machinery for production. Instead of strengthening the competitive advantages and innovation performance and catching up with innovative leaders in the core of the EU, it shows that the Czech Republic will be stabilized in a "semi-peripheral" position. The high interest in a simple renewal and purchase of new technologies is surprising for some representatives of the MA, but it corresponds to the real situation of the economic base in the Czech Republic.

Although the OPEI programme contributed to a change in this trend, the specifics of the structure of the Czech economy are constant in the long term. However, empirical results at the project level show that ERDF support significantly helped combat the consequences of the economic recession. Compared to national financial resources, ERDF represents a dominant part of support for companies in the Czech Republic. It can be further emphasized that a number of projects led to an increase in the efficiency of production in supported business and their competitiveness. In this context, however, negative consequences associated with employment also ensued. Generally speaking, however, among other things the programme as a whole contributed to job creation (although that was not its primary purpose). Furthermore, it was clearly confirmed that companies without support would have implemented certain investments, but these would have been mainly investments of a limited size and would have had to be spread over a longer period. The ERDF support, therefore, helped to significantly accelerate the planned activities.

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20 In this case a soft project refers, for example, to activities that support cooperation between universities and companies (such as innovation vouchers) or measures that aim at increasing cooperation between companies in the development of new products, etc.
The OPEI is an example of a programme with a diversified portfolio of policy instruments and diverse activities. Hence, the programming period 2007-2013 must be seen as the possible beginning of the new evolution path. However, for this to happen, it is necessary to ensure the long-term effects of supported projects so that they bring maximum effects. Some of the effects of the most important policy instruments are presented in this case study. However, further detailed evaluation, which would bring more empirical evidence, should be carried out.
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