Assessment of economic effects and the programme settings of the support programmes Innovations, Cooperation and Potential within the Operational Programme 'Enterprise and Innovations' (OPEI) (Czech Republic)

1. Introduction

This case study presents the mid-term evaluation of the innovation-support components of the Enterprise and Innovation OP (2007-2013)[1] in the Czech Republic. The evaluation is presented in a published report entitled Assessment of economic effects and the programme settings of three support programmes: *Innovations*, *Cooperation* and *Potential* within the Operational Programme Enterprise and Innovations (OPEI).

The evaluation was carried out in 2011, around the mid-point in the programme lifecycle, and had a dual focus. Firstly, it set out to quantify achievements to date, the economic impacts of the three innovation sub-programmes. Secondly, it revisited the programme settings (conditions for approval of project applications, target beneficiary group) in order to inform the drafting of future calls for tenders and to help prepare for the next funding period.

The evaluation may be useful for those managing authorities planning to undertake an economic impact assessment of an innovation-related programme as the Czech-language report includes copies of all of the data collection tools as well as a detailed account of the micro-level analyses carried out for each of the three sub-programmes. The evaluation report presents cluster-level findings for the Cooperation sub-programme as well as programme-level results. The evaluation report is also useful for those managing authorities that are adjusting the programme setting for future calls or the next programming period, in order to ensure the programme efficiency and to a limited extent also relevance of the programme in the current economic climate.

The most interesting element of the evaluation is perhaps the use of a counterfactual analysis, wherein the study team matched assisted and unassisted businesses, using national statistics data, and used the latter to reveal improvements to the former that might reasonably be attributed to the programme interventions. There were issues with the counterfactual analysis, around the matching process, but in particular the timing of the evaluation, wherein many projects had only recently concluded or were still ongoing, meant the analysis found little impact. Notwithstanding this issue, the approach is creditable and worthy of consideration by others.

The evaluation was conducted by a team of five analysts based in Prague working for a multinational engineering consultancy, DHV Group. The work was carried out in a remarkably short time, during a 5-week period in March and April 2011, ahead of the ministry preparing its next round of calls for proposals. The tender specification and final reports are available on www.mpo.cz.

2. Description of the evaluated measure

The evaluation addressed the three innovation components of the Enterprise and Innovations programme (OPEI) in turn. As the name of the programme suggests, it aims to increase the competitiveness of the Czech economy in part by bringing the

[1] Programme under Convergence objective, co-funded by the European Regional Development Fund (ERDF).

innovation performance of the manufacturing and service sectors closer to the level of the leading developed European countries.

The policy objectives of the innovation sub-programmes combined are: (1) to strengthen innovation activities of Czech enterprises (implementation of innovative technologies, products and services); (2) to encourage cooperation of industry with the public-sector research base, (3) to improve infrastructure for industrial research, technological development and innovation, and (4) to allow a more effective utilisation of human potential in industry and improve business infrastructure.

The specific objective of the **Innovations** sub-programme is to increase the innovation potential of the business sector by providing grants – on a competitive basis – to implement an innovation or to apply for a patent. The sub-programme is open to project proposals from businesses, public research organisations or social enterprises, with a particular emphasis on projects involving smaller firms (SMEs). The programme gives special attention to supporting ecologically oriented innovation (eco-innovation).

The **Potential** sub-programme supports capacity-building projects in an attempt to increase the number of companies that feel confident to carry out research and development projects in-house. Further ambition of the sub-programme is to extend cooperation between enterprises and research and development organisations, create high qualification jobs, and thus develop knowledge-based economy, set better conditions for the enterprises to join national and European R&D programmes, and permanently enhance the competitiveness of the Czech economy.

The **Cooperation** sub-programme supports the creation of sectoral networks – clusters, technological platforms, cooperation projects – on regional, super-regional and national level, as tools for developing competitiveness and economic growth. The general objective of the sub-programme is a continual contribution towards favourable business environment, improvement of conditions for entrepreneurship and innovation and development of a competitive advantage from high quality links between research, higher education and businesses.

The target groups for each of these sub-programmes differ slightly. Table 1 below shows the types of participants eligible for support within each strand. In essence, the sub-programme Potential had a much narrower focus than the rest of the programme, targeting businesses specifically and excluding public bodies.

Table 1 Target groups

Sub-programme	Type of measure	Beneficiaries
Programme OPPI Innovations	Direct financial support for innovation activities (leading to protection of IP)	• Public research institutions • Higher education institutions • SMEs and others
Programme OPPI Potential	Direct financial support for innovation activities (improving capacities for R&D)	• Large enterprises • SMEs
Programme OPPI Cooperation	Networks & Clusters	• Public research institutions • Higher education institutions • SMEs and others

3. Designing the evaluation study

The initial idea for conducting an impact evaluation (rather than a more conventional review of progress and coherence) originated in the intellectual curiosity of the staff within the Section for Operational Programme, Evaluation and Public Support (08110) of the Ministry of Industry and Trade (hereafter referred to as evaluation unit).

The study specification went through several iterations before the tender was issued. It was first commented on by members of staff within the evaluation unit. Following that, the draft was discussed at a meeting with the director of the section. In a third stage, the consultation involved the unit for economic analysis, which was responsible for ensuring the availability of the necessary data for the evaluation and therefore requested the test set of data from the Czech Statistical Office.

The main two objectives set in the tender specification were (1) to evaluate the effects of the three innovation sub-programmes on the competitiveness of supported firms, and (2) to assess the setup of conditions for participation in the programmes. These two questions are typical for a mid-term evaluation of any public policy or programme. Most interim evaluations will emphasise a summative assessment of achievements to date, and while the OPEI objectives are directional rather than specific (i.e. the programme has not specified any time-based performance targets) the client and evaluators formed a view on the effectiveness of the programme based on the evidence of demonstrable progress for each programme on each improvement dimension. The second core evaluation question relates more to the efficiency of the programme arrangements, and is much more operational. In addition, the evaluation sought concrete feedback on practicable means by which to make the calls for proposals a little more effective (e.g. visible to a larger section of the business population) and to ensure the evaluation of proposals was streamlined.

The evaluation's core questions were less explicit when it came to the need to recheck the rationale for the innovation programmes and the good sense of the programme strategy. Notwithstanding this openness in the specification, the evaluators did discuss these more strategic and forward-looking issues through the stakeholder consultation programme. The terms of reference also required the evaluation to produce conclusions and recommendations that would: help the Managing Authority provide more effective support for the creation and dissemination of innovations for the remainder of the funding period (i.e. until 2013); and to formulate new priorities to support entrepreneurship in the next funding period.

The only methodological requirement was to run a survey on a selected sample of projects in the concerned programmes and to organise structured interviews with recipients of support and with project coordinators. The ToR stated that the commissioning body expected the contractor to put forward a proposal for other methodological tools.

The budget limit for the evaluation was set to a maximum of 850,000 CZK (€34,500) excluding tax, and our interviewees suggested the final price was substantially below this maximum figure. The duration of the study was limited because the next set of calls was due to be announced just two months after the contract was signed. The study was conducted over a period of 5 weeks, which is by all standards an extraordinarily short period for this type of evaluation.

The authors of the tender specification paid careful attention to the availability of the data for answering the evaluation questions. The query made to the Czech Statistical Office prior to publishing the tender specification revealed substantial data coverage for the study.

4. Implementing the evaluation: methodology and process

The overall approach and methodology for the evaluation consisted of collection and analysis of both qualitative and quantitative data and a counterfactual analysis that made use of primary and secondary data.

The data collection comprised a series of familiar tools: desk research, tick-box questionnaires and semi-structured interviews. There were seven questionnaires, six of which were implemented online by the contractor. A seventh survey addressed to the external assessors (who appraise proposals), designed by the contractor and implemented by the ministry, in order to ensure the anonymity of the peer reviewers.

The study team elected to use different questionnaires for each sub-programme and to focus on the type of effects specific to that sub-programme, in order to keep each survey as short as possible and thereby encourage higher response rates. These are quite small programmes, with participants numbering in the low tens for the Innovation and Potential sub-programmes and around 100 organisations in the cooperation sub-programme. The questionnaires were as follows, a survey of:

- Beneficiaries of innovation projects, within the Innovations sub-programme
- Beneficiaries of IPR projects, within the Innovations sub-programme
- Beneficiaries of the Potential sub-programme
- Firms within the Cooperation sub-programme
- Public research organisations within the Cooperation sub-programme
- Unsuccessful applicants.

Together, the questionnaires addressed all of the different types of effects being pursued through the innovation programmes: external relationships, internal capabilities; innovations and economic benefits. The questionnaires also invited respondents to estimate the degree to which any benefits realised might reasonably be attributed to their participation in the sub-programme in question. The questionnaires concluded with an open question inviting respondents to propose any practicable improvements to the programme arrangements that would improve its effectiveness. Overall, the questionnaires were well conceived and linked well to the study objectives.

The online questionnaires were announced to all beneficiaries within each of the three programmes that started their projects in years 2008 and 2009.

Samples of respondents ranged from 23 in the case of programme Innovations, 31 from programme Potential to 76 in programme Cooperation. The ToR did not specify the desired response rate for the survey (i.e. percentage of approached beneficiaries; applicants and other groups that were approached). The commissioning body only specified the required minimum number of interviews. Success rates of the beneficiary surveys were relatively good (40-49% in programme Innovations and 40-67% in programme Potential) but reaching the unsuccessful applicants proved challenging with extremely low success rates, especially due to the limited time.

For questions related to the programme arrangements and in particular the set up of the appraisal system, the study ran surveys of unsuccessful applicants and the external assessors. The survey of unsuccessful applicants produced too few responses to be useful, and with a 5-week turnaround there was very little scope for re-contacting people and conducting follow-up interviews. The study team did however carry out semi-structured interviews with up to 20 people, covering all of the main stakeholders. They interviewed beneficiaries and representatives of consulting companies Direkta, eNovation, GrantHelp, Grantika, Mida Consulting, representatives of MPO and CzechInvest and survey of external evaluators. The study team also undertook 6 telephone interviews with applicants that withdrew from the contract, 2 interviews with clusters, and 4-6 interviews with beneficiaries of programmes Innovations and Potential. These interviews were crucial for obtaining in-depth information on the administrative burden related to the application process.

Most of the consultancy companies that specialise on services for applicants were cooperative, however, there were some (a minority) cases where the firm decided not to contribute towards the study.

In terms of secondary data sources, the contractor used data from the internal monitoring system (contract reference numbers, participant details, project abstracts, timelines, financing details, deliverables, etc) and ČSÚ – the Czech Statistical Office.[2]

[2] Examples of indicators from ČSÚ were costs of labour, sales, number of staff.

The former were used to target the surveys interviews and to profile the performance of assisted businesses. The ČSÚ data were used to run the counterfactual analysis.

The organisation of the evaluation process was outlined in the evaluator's proposal. It contained a specific list of questions for each of the two main study questions and for each of the three sub-programmes. The subsidiary questions, impact questionnaires and interview guidelines were commented upon by the evaluation unit and developed in two further iterations – informed by meetings with the client team – in the days immediately following the signature of the contract. The data collection tools and timetable was approved at a final inception meeting with the project steering group. The steering group comprised the client representative, other members of the evaluation unit, members of the Ministry's analytical support unit (economists and methodologists) and the implementation team (programme managers). There were also several project leaders and other external stakeholders.

This rather intensive round of discussions dealt with all the ambiguities in the specification and the proposal. In addition, due to a political decision, the questions within the second task were extended and redirected towards the recommendations for the programme setting for the next funding period (2014 -) and reducing the original emphasis on preparing advice for adjusting the next rounds of funding in the 2007-2013 programming period. The programme managers were still keen for the study to generate feedback on their processes and to advise on opportunities to improve upcoming calls, and so the change in emphasis towards the longer-term did not result in a decision to switch the study to a more realistic timetable.

Following this inception period, the contractor and the commissioning body were in contact on an almost daily basis, with submission of outputs and information on progress every week. The input of the managing authority was especially valuable in the second task, i.e. evaluation of the programme setting.

5. Effectiveness and efficiency of evaluation

The evaluation addressed the study objectives in full, covering both the assessment of programme achievements and administrative efficiency and also consulting stakeholders on opportunities for improving arrangements and sharpening the focus of the programme going forward (including a more prospective discussion about longer-term challenges and priorities for the next programming period). The work was carried out in just over a month and at a price close to 50% of the guide budget, with the full cost of the work being subsidised in some degree by the contractor.

The study is noteworthy for how much it delivered given the time and budgetary envelope, and the client endorsed this view stating that they were persuaded by the study and would in future seek to look at programme effects and not content themselves with monitoring data on expenditure, activities and outputs. The client considered the work to have been excellent value for money.

The 5-week timetable was the most significant challenge faced by the study team and this did mean the study secured contributions from fewer people than might have been possible within a more typical 6-month timetable. The study team made every reasonable effort to combat this dilemma, for example, working with a team of five people and using tickbox questionnaires implemented online, in order to work concurrently and make progress with all aspects of the study. Given the small populations, it would have been better to carry out the beneficiary surveys by telephone. Computer Aided Telephone Interviews (CATI) are generally regarded as being a better solution for voluntary business inquiries than postal or online questionnaires, producing significantly higher response rates. Postal or online surveys have their place of course as they can address more complex multi-dimensional questions and can produce more and better data and qualitative advice (although the tickbox questionnaires used in this evaluation are a natural format for CATI).

Notwithstanding these efforts to mitigate the effects of the rather hurried timetable, response rates did suffer in particular as regards unsuccessful project applicants.

The timetable also limited the team's ability to use different methods in a sequential fashion, to reveal, count and explain particular issues, which would be conventional practice when carrying out policy studies of this kind using standard social science research methods. There was scant opportunity either to use the multiplicity of data collection and analytical techniques to explore the same (complex) phenomena from different perspectives, which is increasingly common in the evaluation of innovation support measures, where analysts look for convergence in different data sets using mixed methods.

The study team was able to construct a profile of beneficiary firms using OPEI programme records and then matched those businesses with the help of ČSÚ and national economic statistics. The ambition was to run a simple counterfactual analysis to compare the economic performance (growth) of the assisted firms with the aggregate performance for the comparison group. The evaluation report was rather unclear as to the detail of this analytical process, but it appears that the study team aggregated the annual increase (or decrease) in sales across the three years 2007-2009, factored by the overall additionality rating provided by beneficiaries through the various surveys. This figure was normalised using sales figures, essentially giving a 3-year figure for additional income as a proportion of total sales. This gross benefit was then discounted using the equivalent estimated growth figure for the comparison group, using ČSÚ data. The results suggest the assisted businesses marginally outperform the general population on sales and employment. However, the team notes certain difficulties in matching the two populations, and in particular an inability to control for possible differences between the participants (innovation active, high-growth businesses) and the general population, which is likely to have a more 'average' innovation and growth performance. The team did try to use R&D statistics to improve the matching, but this proved problematic.

The OPEI client had not asked for a counterfactual analysis in the original specification and was ultimately unsure that the timing was right or that the matching was good enough to be confident in attributing the measured differences in performance to the programme. As a result, the English language summary does not include any reference to this attempt to quantify the counterfactual.

One of the recommendations in the report is to run the analysis in future with more data (about 5 years after the initiation of the project). The annex of the Czech-language report includes a methodological description of the counterfactual analysis that can be re-applied and experimented on internally (performed on a more regular basis and provide more significant results).

6. Conclusions and lessons learned

Overall, the evaluation made a good job of delivering a useful and credible review in an incredibly short period. However, the 5-week timetable negatively affected every aspect of the study and the unavoidable compromises really mean that none of the tools or techniques can be recommended as good practice, unless that is one needs to answer tough questions very quickly. The final report is also rather discursive, with no executive summary and a 20-page synthesis of the main findings.

The other limitation was the counterfactual analysis, which was compromised somewhat by the timing of the evaluation, which was implemented at a time when most projects had only recently concluded and several were still ongoing. There were also issues with matching the assisted businesses to a similar population of other (unassisted) businesses nationally.

Nevertheless, the evaluation yields the following insights that are applicable to the evaluation of this type of innovation support measure:

- Different types of innovation programmes demand different questions to unravel and count their effects, and the tailored / modular questionnaires worked well.
- Working closely with the client to define the questions helps to ensure relevance of the data and resulting analyses, and also helps clients to calibrate their expectations.
- The quality of evaluation findings benefits from a combination of quantitative and qualitative data, and close collaboration with national statistics office can provide data for additional analysis such as assessment of the counterfactual. Prior to commissioning such a study, it is desirable to contact the relevant bodies that possess the required data and assure the feasibility of the analysis.
- Speaking with a broader mix of stakeholders may reveal important unexpected impacts and also strengthens the analysis of the wider landscape and future requirements.
- Interviewing the intermediary organisations – consultancy firms – that work with applicants can provide an interesting perspective on the programme arrangements, which an individual applicant may not have.

The study findings and recommendations were presented to both the evaluation unit and the delivery unit that runs the programme.

The overarching conclusion was that the programmes were working well and making a material difference to the innovation capabilities of assisted businesses and that there remained a clear need for innovation support in the next funding period. Further recommendations included:

- Regular evaluation of the economic effects.
- More information about the external assessment procedures highlighting the importance of the discretion of the external assessors.
- Increased remuneration of external assessors.
- Provision of information with which to judge the reputation and standing of cluster-support services for SMEs (e.g. establish certification of cluster managers).
- Considering the possibility of lowering the required investment into long-term property in case of SMEs.

The evaluation unit confirmed that the recommendations on which programmes should continue and in which form in the next funding period will be all taken into consideration during the formation of priorities and programme design, but at this stage it is difficult to say whether they will be followed in full.

For the evaluation unit, there is a recommendation to more routinely carry out economic impact assessments, while the programme management unit is invited to consider a series of improvements relating to the transparency and reliability of the assessment process and intermediaries.

The readiness to use and benefit from the findings of the evaluation is different in the evaluation unit and in the unit that implements the programme. Most of the recommendations related to the operation of the programme, and the programme management team is reportedly wary of making any substantive changes that they don't feel absolutely confident about and in several cases, the implied additional cost ruled out the changes automatically.

In the four months since the study was completed, the ministry had issued just one new call for tenders (Innovation PATENTS), and this call had been implemented without making any of the changes recommended by the evaluators. One of the study recommendations (to allow multiple patents per project) was considered, but was not implemented due to additional administrative complexity that would have resulted. One of the other recommendations put forward in the study was to emphasise the international cooperation of clusters. This characteristic is part of the selection criteria

already, however the ministry confirms that it will be stressed also in the next funding period. The implementation unit also plans to permit projects to include as an eligible cost the fees (subcontract) for preparing an internationalisation strategy for a given cluster, or membership fee in international networks, which was recommended by the evaluation report.

The evaluation unit believes there is a more general resistance to acting on external advice, and has expressed its ambition to do more work with the operational teams to reveal exactly how good evaluation can facilitate learning and improved programme performance.

Interviewer and case study author: Andrej Horvath, Technopolis Group UK

Case study completed: October 2011