

**Evaluation of the Technopolis Second Interim Report
within the framework of the project
“International Audit of Research, Development and Innovation
in the Czech Republic”**

Assessor: Prof. RNDr. Jana Musilová, CSc., Masaryk University

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1. Documents received

This evaluation was made upon request by the “International Audit of Research, Development and Innovation in the Czech Republic” project chief coordinator, Prof. Dr. Jitka Moravcová. To write this evaluation I received the following documents on 17 February 2011:

- 1) Second Interim Report, February 15, 2011, by Technopolis Company;
- 2) Annex 1 to the Second Interim Report: Assessment of Public R&D Expenditures in the Czech Republic;
- 3) Annex 2 to the Second Interim Report: R&D Governance in the Czech Republic;
- 4) Annex 3 to the Second Interim Report: Institutional Funding and Research Evaluation in the Czech Republic and Abroad;
- 5) Annex 4 to the Second Interim Report: Review of the IPR System;
- 6) Annex 5 to the Second Interim Report: Science-Industry Links;
- 7) Annex 6 to the Second Interim Report: International Co-operation in R&D: Preliminary Findings;
- 8) Annex 7 to the Second Interim Report: International Co-operation in R&D: Bibliometric Analysis;
- 9) Annex 8 to the Second Interim Report: Bibliometric Analysis of the Czech Republic Research Output in an International Context – Institutional Analysis, 1993-2009;
- 10) An excerpt from Annex I to the agreement made by the Czech Ministry of Education, Youth and Sports (hereinafter MEYS) and Technopolis Company on interim reports

contents – chap. 2.1.1., item a), i)-ii)-iii), item b), i)-ii)-iii), item c) relevant to writing the evaluation (hereinafter “guidelines”);

- 11) Auditors’ interviews made with chosen scientists groups in the Czech Republic in various branches of science.

2. Report structure and content characteristics

The report consists of an introduction, four chapters, a conclusion including assessment and recommendations and eight Annexes. The guidelines of the Second Interim Report apply to chapters 2 through 4 and Annexes 1 through 4 and Annex 8, Chapter 5 contains preliminary findings of international cooperation matter, Annexes 5 through 7 apply to preliminary analyses not required for the report. Auditors’ interviews with members of selected scientists groups in the Czech Republic are excluded from the report, however explicitly projected in the conclusions of analyses done contributing to their relevance in substantial scale.

The key point that is well supported with analyses is in my view Chapter 2 R&D Governance in the Czech Republic that, together with the comprehensive Annex 2, completely, but minor exceptions meet the requirements mentioned under items b), i)-ii)-iii) and c) of the guidelines. Along with a detailed description of research and development system organisation in the Czech Republic it gives a thorough analysis of its positive and negative features viewed from international experience position. Besides, it includes highly fundamental conclusions regarding to evaluation procedure that complete the requirements of item d), i) in the guidelines already mentioned in the First Interim Report (August 15, 2010 and September 14, 2010). Chapter 3 R&D Outputs and the Quality of Research and the related Annexes 3, 4 and 8 contain partially additional information to item d), ii), as requested in First Interim Report evaluation and especially requirements to item d), iii) – Protection of intellectual property rights and intellectual rights that were completely missing in the First Interim Report due to time reasons and causes beyond researchers’ or Technopolis’ control. Annex 4 is a good predicative study of intellectual property protection in the Czech Republic. A formidable impression of Annex 8 is caused by the offered qualified bibliometric analyses. The issues of items a), i)-ii)-iii) are covered in Chapter 4 Expenditure on R&D for Innovation completed with Annex 1. Chapter 5 Preliminary findings on International Co-operation in R&D and Annex 5, Annex 6 and Annex 7 present in line with the “Preliminary Findings” wording in their titles the very first thoughts concerning items e) and g) of the guidelines whose conclusions are not requested for the Second Interim Report but still are a suitable piece of information of the already opened next phase of the audit.

More detailed commentaries to some of report’s partial aspects are mentioned in the following paragraphs. Taking into account the report volume (42 pages of actual report text, 690 pages of annexes, 88 pages of Panel Reports), the time for a qualified assessment of all its parts and annexes is absolutely insufficient, as I esteem six weeks to be the standard time. Therefore, detailed commentaries only relate to the explicit guidelines for the Second Interim Report (as in item 10 of para. 1) of this assessment), i.e. Chapter 2 of the actual report text, Annex 2 relevant part Annex 3 and Annex 8 containing the completing information to the First Interim Report in items d), i) of chapter 2.1.1 of the guidelines, Chapter 3 of the actual report text plus Annex 3 and Annex 8. The parts of the report related to the items e) and g) of the guidelines and the appropriate annexes are discusses marginally, the same applies to Intellectual Property Rights System in Annex 4, as I cannot assess this issue expertly.

3. Evaluation of the individual thematic fields (chapters) of the report

3.1. Chapter 1 – Introduction

This chapter presents a clear description of the contents of the report.

3.2. Chapter 2 – R&D Governance in the Czech Republic

This chapter is intended to meet the requirements of items b), i)-ii)-iii) and c) of chapter 2.1.1 and complete items d), i), presented in their provisional form in the First Interim Report with conclusions:

b) Evaluation of the state administration of research and development

i) Activities and mutual cooperation of the providers of support from public resources, provisions for their activity, personnel, financial, material, administrative demands of the processes and services provided to the receivers/applicants, comparison to developed European countries.

ii) Processes set to administer programmes and projects – the way the providers of targeted/institutional funding evaluate the level of research they support, what are the criteria they define, what consequences are drawn from evaluation results particularly in terms of modified rules and/or criteria for funding, comparison to developed European countries.

iii) Evaluation of the foundation system in the Czech Republic placing stress upon the number of applicants, transparent and anonymous judgement of grant applications, criteria for grant application assessment and adherence to those, efficiency of grant funds usage and suitability of the two-round application assessment system for the conditions in the Czech Republic.

c) Evaluation of research and development programmes – the evaluated subject shall include the preparatory process, continuous and final evaluation of research and development programmes, of research and development programme management particularly at providers level; the analysis of the relations among the priorities contained in the strategic documents approved by the government (strategic documents, R&D&I priorities, economic policy, research policies of the ministries – R&D concept) and declared programmes.

d) Level of research and development institutions.

i) Evaluation of methodology for the evaluation of results in research organisation and for programme evaluation made by Research and Development Council (RDC), SWOT analysis, compared to audit results. Requested judgement of the First Interim Report: Determine the final conclusions in relation to items d), i) of chapter 2.1.1 in the guidelines (R&D results evaluation guideline).

Detailed description of the research and development system organisation in the Czech Republic and qualified critical analysis of its attributes in the context of international standards bear evidence of assessor's thorough knowledge of research organisation issues as well as specific Czech features. The values of the text and annexes exceed pure meeting the requirements specified by the audit. The materials could be also used for teaching purposes being at high level in both technical and didactic terms.

They clearly describe the levels of R&D management, the role of the Research, Development and Innovation Council, the position of R&D funding providers (intermediaries such as Ministry, Academy of Science of the Czech Republic, Czech Science Foundation or Technology Agency of the Czech Republic) and first and foremost the negative and/or

illogical aspects in that structure (unusual role of RDI Council¹, not well defined role of TA CR²), the positions of different types of research institutions, splitting into basic and applied research, etc. (Some conclusions concerning the latter terms are difficult to agree with totally. Examples include the opinion that the Academy of Sciences is generally considered an institution involved in basic research whereas universities orient towards applied research³, or that the basic research is defined as research that does not involve private contributions, applied one is the research that includes private interests⁴).

Another proof of thorough knowledge of research organisation matters in the Czech Republic is in the following section of the chapter that objectively evaluates research and development policy and its implementation pointing out substantial flaws. It considers evaluation system the weakest link⁵ (in assessors' view, evaluation in the Czech Republic only monitors the outputs without much understanding of their meaning for achieving the goals⁶). Critical flaws of the research and development policy are missing open discussion that would bring together the parties concerned, lack of will of wide communication with the community of concerned parties and public, unpublished documentation⁷. It appreciates remedied inconsistency in the policy of priorities at different levels of research and development management as a positive feature of 2008 Reform and takes a positive approach to the newly implied Czech-Science Foundation's rules.

The report overwhelmingly scarifies the system of research and development evaluation, particularly various versions of the Research and Development Evaluation Methodology, unlike the First Interim Report based this time on the knowledge of its pre-reform and post-reform versions, including 2010 Methodology advocated by the Research and Development Council to be specific by branches⁸. It states there is quite a difference between evaluation in

¹ a) In the international context, R&D&I Council plays an unusual role in the management of Research and Development in the country, operating almost as a virtual science ministry. Equally unusual by international standards is the breadth of its tasks. (p. 5)

b) Its legitimacy is enhanced by a member of Government, normally the Prime Minister, acting as Chair of the Council. (p. 2)

² The Technology Agency does not have a clearly defined role and mission... (p.4)

³ In the general mindset, the institutes in Academy are considered to conduct basic research, while universities are said to focus on applied research... (p. 5)

⁴ Research is supposed to be 'basic', if no private beneficiary is among those funded and 'applied' here such private interests are involved. (Footnote p. 5)

⁵ There are significant flaws in current policy design and implementation processes and – especially – in the evaluation system in the Czech Republic... (p. 6) "

⁶ Czech R&D system is in fact monitoring of outputs, whose importance for achieving objectives is not well understood... (p. 7)

⁷ a) ...we note little willingness – and even reluctance sometimes – for an open communication with broader stakeholder communities and the general public... (p. 8)

b) ...documents properly illustrating recent decision-making processes are not available; and since 2009, members of the Council are bound to confidentiality in relation to information and documents... (p. 8)

⁸ That argument was brought out to support the 2010 Methodology in the discussion on the First Interim Report by the readers, Prof. Opatrný and Assoc. Prof. Münich. The division of the branches into ten branch families and points percentage allocated to them according to research plans output as in the 2009 Methodology as the basis for "branch family division" is definitely not meeting the requirement of respected branch specific features, bearing thus another evidence of Methodology's incompetence.

the Czech Republic using the Methodology and international practices⁹, referring to undesirable direct linkage of funding to points. It mentions (in a sense not completely negative) researchers' opportunistic behaviour caused by the Methodology¹⁰. The comprehensive evaluation of the Methodology with SWOT analysis proves good understanding of the issue. (SWOT analysis is required in item d), i) in chapter 2.1.1 of the guidelines)

The auditors consider the idea of transparent evaluation a **strong point**, and also the clear signal that funding cannot be expected without results. The opened discussion of evaluation is interpreted as an **opportunity**. The rest is **weaknesses** (reductionism – transferring points into funds and ignoring quality factors, neglecting discipline-specific features in publication and cost, undifferentiated organisations by their types and missions, partially arbitrary values of outputs) and **threats** (opportunistic behaviour, unpredictable institutional funds, instable research system, supported short-term thinking rather than long-term planning, insufficient room for building up capacity, “patching up” methodology – annual changes to correct the most obvious imbalances, frustration, using the Methodology within institutions, unknown effects yet). Here I deem necessary to correct a minor interpretation mistake in the report text in page 13 stating “The 2010 Methodology explicitly recognizes the use of the metrics-based evaluation of R&D results as a funding system also at the level of research institutions.” It does not correspond to the practices of institutional funds distribution. These keep the form that the RDI Council distributes the funds per intermediary, albeit calculation is based on the points achieved by institutions. The fact that MEYS, for example, uses the same principle for their redistribution to institutions is MEYS's decision but not a Methodology rule¹¹.

It should be mentioned here that (unfortunately) research analyses done by a professional auditor (fortunately) pointed out the same flaws in the Methodology that had in vain been pointed out, many a time in the same phrasing, in interdepartmental procedures to remark the Methodology as well as in their own rough analyses done by the institutions either for remark purposes (for information: Annex 1 – an incomplete list of MU documents for remark procedures), or for publication purposes in the expert community (for information: Annex 2 – List of posts in the Academic Forum, Research Organisation Expert Group of the Czech Physical Society of the Union of Czech Mathematicians and Physicists – available in Czech at http://cms.jcmf.cz/osov/odborne_akce.html).

The topics specified in details in items a), i)-ii)-iii) of chapter 2.1.1 of the guidelines, besides the general overview of the main questions, are detailed in Annex 2:

- Research and development management system (item b), i)) is described and in international critical context assessed for the concept as well as for management structure, including graphic schemes and charters. RDI Council's role is contextualised with the research and development bodies in Austria, Canada, Finland, Ireland, Japan, Netherlands and United Kingdom. A part of research organisation contents in institutional cooperation; that domain covered in the Annex is maybe too detailed with regard to text's general concept, the diagrams of the number progression of joint publications by the institution

⁹ Curiously, the Czech Evaluation Methodology seems to be developed in almost complete isolation from developments going on in other countries... (p. 13)

¹⁰ If research actors refuse to ‘play the system’, they are actually acting rather stupidly because they will eventually be overridden by other research actors who do. (p. 14).

¹¹ The misinterpretation might be caused by the misleading title of Chapter V in the 2010 Methodology “Rules of institutional funds distribution to research organisations and point value determination”.

groups in international journals in time are very instructive. As is the graphic representation of the progress of funding distribution per intermediaries in time.

- Research management processes (item b), ii)) are compared to the situations in Canada, Germany, Finland, France and Norway.
- Grant system evaluation (item b), iii)), paying attention to the submitted project assessment process, is also done in context of international practices (Finland, Denmark, European Commission, United Kingdom). Compared to the guidelines, the material only mentions two-round competitions held abroad as well as in the Czech Republic, however misses a thorough analysis resulting in the desirable comparison of the pros and cons. I think that that issue is in the evaluation of the comprehensive R&D system very partial or even marginal and should not be referred separately in the guidelines. Therefore, the notion of it in the report is in my opinion sufficient.
- The issues of item c) in chapter 2.1.1 of the guidelines are also mentioned in Annex 2.

The conclusions of the issues in item d), i) of the guidelines, partially treated in the First Interim Report and was to be completed in the Second Interim Report, are interpreted both in the actual report text and in the detailed analysis of the Methodology in Annex 3. Annex 3 carries out a qualified detailed analysis of the Methodology, including the results of collecting, proceeding and analysing researchers' opinions of such a way of research output evaluation. The analysis is completed with detailed case studies concerning evaluation systems abroad (Netherlands, United Kingdom, Austria, Finland). The Czech Methodology is evaluated in the light of those studies both in terms of science evaluation and in terms of funding. In conclusion, R&D evaluation method in the Czech Republic directly relating the points achieved according to the Methodology to funds is assessed exclusive – such a conception misses any analogy in the monitored countries, research evaluation is only used as a factor in the decision making process upon funding. (The report mentions Methodology's "exclusivity" in definitely negative meaning – a research and development evaluation system with as serious flaws as the Methodology suffers from, is under any comparison in the world.) Case studies concerning Academy of Sciences internal evaluation are instructive, including the ongoing one that features a number of peer review elements, and "Research and Development for Innovation" operational programme.

3.3. Chapter 3 – R&D Outputs and the Quality of Research

This chapter is devoted to the issues in items d), ii)-iii) either treated only partially or left completely untreated (intellectual property protection) in the First Interim Report.

d) Research and development institutions level

ii) Evaluation of research and development carried out by institutions of all types (universities, public research institutions, research institutes) that rank among the legitimate applicants for funding by public resources. Their level analysis compared to developed European institutions in terms of funds intensity, achieved results' quality and quantity and their usage efficiency, in terms of funding resources allocated by European funds and earned from other international cooperation. Comparison of that evaluation to R&D Council's Methodology.

iii) Protection of intellectual property rights and intellectual rights in the Czech Republic, SWOT analysis, definitions of legal and objective restrictions, encouragement of institutions and employees towards target proceedings.

In its first part, this chapter briefly characterises the results of the bibliometric analysis of the research and development outputs in the Czech Republic. The bibliometric analysis places the centre of gravity into the extensive Annex 8¹². The extent and especially the expert level and the comprehensiveness of the Annex content go beyond any similarity to available materials of the kind; the institutions responsible for research and development management in the Czech Republic have developed no similar analysis, as far as I am informed. The analysis covers publication outputs by the leading Czech research institutions in the Czech Republic included in the WoS data base in the period of 1993-2009. A trustworthy impression is already made by the introduction to the annex describing the method and way of processing WoS data and accepting address standards for bibliometric analysis purposes. I also found the index of bibliometric indicators definitions very useful, and it may be useful generally, too. The extensive chapters allow oneself to orient in the bibliometric indicators values for universities, Czech Academy of Sciences institutions or other research institutions in the time line of 1993-2009 in a three-year cycle.

Quite a large part of Annex 8 (pages 28-50, Appendices F and G) is devoted to very instructive tables on the published outputs by the leading research institutions in the Czech Republic reached through national or international cooperation. So much as interesting is that part and as the intention of producing such tables had logically been inspired by the collecting method based on standardised addresses, that part of the bibliometric analysis cannot be completely considered an "...analysis of the level of research institutions compared to developed European institutions in terms of quality and quantity of achieved output...". For that purpose, no "comparative" European institutions had been chosen. The only criterion is obviously different addresses of cooperating institutions.

As for item d), ii) of chapter 2.1.1 of the guidelines it is then referred to Annex 3 in page 1 of the report. Though some of the summarising data of institutional funding in various European countries are mentioned there, they only very roughly meet the requirement of "comparison of the research institutions in the Czech Republic to developed European institutions." Thus, there is still a room to fill to meet the requirements (in terms of quantity comparison) of item d), ii) in chapter 2.1.1 of the guidelines for the "...comparison of achieved results' quality and quantity and their usage efficiency, in terms of funding resources allocated by European funds and earned from other international cooperation". However, as far as quality is concerned, highly instructive and precious information concerning item d), ii) of the guidelines is contained in Panel Reports, based on a peer review form of a kind for the evaluation of selected research institutions, centres, or groups by international experts. It concentrates into five field families (Applied Research Centres, Medical Sciences, Natural Sciences, Social Sciences and Humanities, Technical Sciences, missing Law Sciences and Economics). A commission of international experts had contacted three research units in each of the families (except Applied Research Centres that only two involved). Such an "in site evaluation" method produced a very good overview of research specialisations character, achieved results, efficiency of their usage and the users, research institutions management and conceptual attitudes in personnel management for wide branch domains covered in the evaluation even in the international context. A slightly disturbing element is the a bit different structure of the evaluation reports (see the content of each of the Panel Reports). I see a more serious negative point that could disturb the results in a one-way selection of the evaluated research groups. Except for the University of Ostrava, Institute of Biophysics of the Academy of Sciences of the Czech Republic seated in Brno and both applied research groups (Liberec, Brno), all of the groups come from Prague. Out of 26 public universities in the selection, only one is not from Prague – University of Ostrava, the other contacts come solely from the Prague's

¹² The list mentioned in page one of this Annex should probably read (WP d,ii) rather than (WP d,i).

Charles University and Czech Technical University. However, Panel Reports results are generally really precious and, in terms of generally meeting the item d), ii) of the guidelines, probably more valuable than a mechanic comparison of quantitative data.

The last of the requirements in item d), ii) of “Comparison of that evaluation to R&D Council’s Methodology” is met by the statement, implied in qualified analyses, that the Methodology differs from international evaluation standards.

3.4. Chapter 4 – Expenditure on R&D for Innovation

This chapter concentrates on meeting the items a), i), ii), iii) of the guidelines:

a) Evaluation of R&D&I public expenditures in the Czech Republic, evaluation of their efficiency and comparison to the European level

i) Targeted to institutional funding ratio, basic to applied research, development and innovation ratio of expenditure and also the ratio of R&D expenditure by sectors (universities, RDI and others), total volume of public resources, R&D&I funding by private subjects.

ii) Ratios of public resources allocated to each of the research sections, ratios of resources for R&D priorities (long-term basic research areas) and other R&D&I activities, R&D&I priorities adequacy with regard to the conditions in the Czech Republic. The effect of building up new capacity within large projects funded by operational programmes of funding R&D&I by public resources.

iii) Diversification of financial support, existence of critical amounts (of people and financial resources) in selected branches. The level of support coordination in the branches requiring the existence of critical amounts.

This chapter treats the structure of research and development funding in the Czech Republic compared to situation abroad in terms of funding types, institution types (universities, government sector, private sphere) and branch structure (field of science families). The actual report text is brief mentioning only the basic funding characteristics of various groups of institutions or branches. However, Annex 1 is highly valuable as it contains well processed quantitative data structured partly by the above mentioned types of criteria, partly by time progression. Though material’s intersection with the commonly available brochures of “An analysis of research, development and innovation situation in the Czech Republic and its international comparison in...” type is not empty but rather large it is considerably more systematic. For example, time lines are complete here unlike the mentioned brochures and contain annual data, data taken from Eurostat are in most of the cases very updated (2010 year), polar charts give a very good roundup of specialisation profiles of various types by countries, branches, etc.

The analysis issue makes me to ask two technical questions or remarks:

- Some of the polar charts in Annex 1 compare specialisation profiles in the Czech Republic and in EU-27 (such as Figures 14, 29, 31), while commentary treats the specialisation polarisation for the Czech Republic against EU-27. In my opinion, such a symmetry comparison is incorrect. EU-27 symmetric profile is created from the average of individual countries’ profiles each of them could be asymmetric, but the average compensates for the asymmetry. Comparison of commensurable units’ profiles would be relevant.
- The definition equation of RCA factor is mentioned in page 22 of Annex 1. The factor is intended to characterise “science specialisation”. If a pure mathematics is applied and the quantity in parentheses is described x , RCA may be defined in a neat form as follows:

$$RCA = 100 \tanh \ln x = 100 \frac{\exp(\ln x) - \exp(-\ln x)}{\exp(\ln x) + \exp(-\ln x)} = 100 \frac{x^2 - 1}{x^2 + 1} = 100 \left(1 - \frac{2}{x^2 + 1} \right).$$

It is unclear to me why such an easy divided rational value equation was unnecessarily written in the form with logarithm and hyperbolic tangent. It would be suitable to explain the notion of RCA factor construction.

3.5. Chapter 5 – Preliminary Findings on International Co-operation in R&D

The basis for the analyses treating international cooperation is in Annex 6 and Annex 7 (bibliometric analysis). The results are not required for the Second Interim Report and declared provisional in the report.

3.6. Chapter 6 – Conclusions and Recommendations

This chapter summarises the conclusions of the previous analyses and phrases recommendations

- For research and development policy that would suppress the negative issues of current policy mentioned in the analyses,
- For establishing the Research, Development and Innovation Council that would concentrate on the key roles of a research, development and innovation advisory body, i.e. acting as a platform for consensus in building long-term strategies,
- For institutional funding concept matching the international standards,
- To leave the Methodology replaced by another evaluation system (research evaluation is inconceivable without peer review),
- For a concept of innovation support,
- To encourage research quality,
- To protect intellectual property rights and intellectual rights.

It also postulates preliminary conclusions for international cooperation.

4. General subject and formal remarks

4.1 Report Structure

Assessing the structure of the report and annexes together, it may be considered good. However, I would consider a structure that would more closely follow also formally the structure of the guidelines more suitable and more comfortable for general orientation. The guidelines are formulated in such a way that would allow that despite its topics overlay in content. Reading the report, one is constantly disturbed by necessarily looking away from the **text** of the body to various annexes – the situation is that a certain item of the guidelines lacks clearly defined paragraphs in the report or clearly determined annexes.

For example, the problem with the actual Methodology and its comparison to evaluation methodologies abroad is the principal subject of item d), i) in chapter 2.1.1 of the guidelines. Logically, it appears as the evaluation method in Chapter 2 R&D Governance in the Czech Republic, then in the paragraphs 1 The Evaluation Methodology, 3 The Evaluation Methodology in the eyes of the Czech research community and 6 SWOT Analysis of Annex 3. Paragraphs of the Methodology, separated by other topics analysed, cause an impression that the paragraphs were written by different authors but did not combine them into one unit.

Similarly, item d), ii) of the guidelines requiring comprehensive evaluation of research and development for all types of the receivers of public support and an analysis in comparison to European institutions is dispersed in Annex 1 (general financial analysis), Annex 3 (evaluation method and institutional funding analyses) and Annex 8 (bibliometric analysis). To assess R&D evaluation really comprehensively in the international context, such a structure is quite misleading, even though logical in terms of individual aspects of the comparison.

4.2. Formal Remarks

I see certain formal shortcoming of processing annexes and report text in frequently and often uselessly repeated sections of the text in various places applying “Ctrl c, Ctrl v” method. Even if a seemingly logical reason could appear that the text is repeated in summaries, it is still a too frequent phenomenon causing discomfort in searching through the annexes and optically increases materials volume.¹³ A graphic fault is bald notes “Error! Reference source not found”, caused probably by copying.

5. Desirable modifications in items for the following report version

- 1) Complete the summaries related directly to individual items of the guidelines.
- 2) Remedy the formal flaws and errata.

6. Conclusion

Generally, the Second Interim Report of the ongoing audit may be characterised with high quality in terms of both expertise and professional attitude. The material’s complex information value is above standard. It is due to the technical quality, pragmatism, clear explanation and well arranged form of relatively brief text of the actual report, as well as due to the analytical material volume in the extensive annexes. It markedly overrides the level of available initial materials and analytical materials on research and development in the Czech Republic compared to other countries of similar focus developed by the institutions that are involved in such analyses or that should be involved in the issue professionally. The text of the actual report (see item 1 in paragraph 1 of this evaluation) is already a qualified and objective assessment, of course if all the statements are assumedly based on thorough qualitative and numerical analyses (annexes) of the Czech Republic’s research and development system concept, methods of management, research funding, results evaluation and relations between funding and result evaluation. Also without deeply studying the annexes, one can learn relatively thorough information from the text of the construction and (in)operability of the supporting system of research, development and innovation in the Czech Republic.

The contents, concepts, conclusions and recommendations in the report correspond with its purpose of “second interim report” in terms of requirements defined in the items a), i)-ii)-iii),

¹³ Two examples for all:

- a) Text in pages 4-12 of Annex 2 is identical to the text in pages 2-12 of the actual report. Then, single paragraphs or large sections of text in pages 40, 44, 63-66, 119-120 of Annex 2 equal to text in pages 2-12 of the report.
- b) Text in pages 119-127 identical to the related text of the report.

b), i)-ii)-iii) and c) in chapter 2.1.1 of the guidelines, and items d), i)-ii)-iii) in the issues that were requested to be completed.

I recommend the “Second Interim Report” should be approved as it is and that its final recommendations should be accepted as being well-argued.

The preliminary conclusions to items e) and g) of the guidelines shall be developed in the following report as in project regulations.

Brno, 27 February 2011

Jana Musilová

Annex 1: Incomplete list of some materials to remark procedures of legal documents on R&D management and evaluation (initial materials under working titles of MU internal documentation)

Objections to the system of R&D in the Czech Republic (amendment to the Act no. 130/2002 Coll. on support of research, development and innovation, Reform of research, development and innovation in the Czech Republic) and to the Methodologies of R&D output evaluation, phrased on the basis of rough analyses, but in essential agreement with the analytically correctly based conclusions of the Second Interim Report, have been systematically and unsuccessfully submitted by the Czech Rectors Conference, being the official remarking point, while the initial documents for the materials had been produced by Masaryk University, among others.

- Masaryk University's statement on R&D Council's document "Metodika hodnocení výzkumu a vývoje a jejich výsledků v r. 2005". Brno, 11.5.2006.
- Czech Rectors Conference statement on the working draft by R&DC and MEYS "Metodika hodnocení výzkumu a vývoje a jejich výsledků v r. 2006"
- Remarks on R&D evaluation principles: Poznámky k jednání Meziresortní pracovní skupiny pro přípravu Metodiky hodnocení VaV a jejich výsledků v roce 2007 – 17.1.2007
- Remarks to meeting: Poznámky k jednání MSP RVV 14. 2. 2007
- „Metodika hodnocení VaV a jejich výsledků v roce 2007 – materiál pro MPS“
- Czech Rectors Conference remarks to "Metodika hodnocení výzkumu a vývoje a jejich výsledků v roce 2007"
- CRC remarks to "Metodika hodnocení výsledků výzkumu a vývoje v roce 2008 – ČKR - 02.06.2008
- Collection of remarks to "Metodika hodnocení výsledků výzkumu a vývoje v roce 2008", presented in an informal discussion with the intermediaries and expert bodies
- Settlement of remarks to an interministerial draft: Vypořádání meziresortního připomínkového řízení k návrhu Metodiky hodnocení výsledků výzkumu a vývoje v roce 2008
- CRC statement: Stanovisko České konference rektorů k dokumentu Návrh Reformy systému výzkumu, vývoje a inovací v České republice
- Remarks to persistent problems to RDI draft reform and other documents: Poznámky k přetrvávajícím problémům návrhu Reformy VaVaI vzhledem k vysokým školám, k vyjádření předsednictva Rady pro výzkum a vývoj ke stanovisku České konference rektorů k návrhu reformy výzkumu, vývoje a inovací v ČR (původní návrh reformy z 13. 2. 2008), k upravené verzi (12. 3. 2008) návrhu dokumentu „Reforma systému výzkumu, vývoje a inovací v ČR“ vzniklé na základě vypořádání připomínkového řízení – MU
- Statement on R&D reform document: Stanovisko k materiálu k reformě VaV dne 11. ledna 2008 – MU
- CRC statement: Stanovisko České konference rektorů k „Návrhu reformy výzkumu, vývoje a inovací v České republice“
- Remarks to law amendment: Poznámky k novele zákona č. 130/2002 Sb.
- Proposed law amendment: Návrh novely zákona č. 130/2002 Sb. – meziresortní připomínkové řízení – připomínky MU – 29. 5. 2008
- Proposed law amendment: Návrh novely zákona č. 130/2002 Sb. – meziresortní připomínkové řízení – připomínky ČKR – 29. 5. 2008
- Remarks to draft document: Připomínky k návrhu Metodiky hodnocení výsledků VaV 2009 (B3/a)
- Subject of remarks: Předmět připomínkového řízení: Metodika hodnocení výsledků výzkumu a vývoje v roce 2009 – MU
- Settlement of remarks to an interministerial draft: Vypořádání meziresortního připomínkového řízení k návrhu Metodiky hodnocení výsledků výzkumu a vývoje v roce 2009

- Subject of remarks: Předmět připomínkového řízení: Metodika hodnocení výsledků výzkumných organizací a hodnocení výsledku ukončených programů (platná v letech 2010 až 2012) – MU
- CRC remarks: Připomínky České konference rektorů (ČKR) k materiálu s názvem: „Metodika hodnocení výsledků výzkumných organizací a hodnocení výsledků ukončených programů“
- Settlement of remarks to document: Vypořádání připomínek k materiálu s názvem: Část materiálu: IV „Metodika hodnocení výsledků výzkumných organizací a hodnocení výsledků ukončených programů“ – 2010

Annex 2: List of papers of Academic Forum (Akademické fórum) on research evaluation in the Czech Republic

The issue of the methodology of research output evaluation including research funding is treated in the following papers in the form of conceptual ideas and detailed analyses of various aspects presented at the Academic forums organised by the Research Organisation Expert Group of the Czech Physical Society of the Union of Czech Mathematicians and Physicists – available in Czech at http://cms.jcmf.cz/osov/odborne_akce.html):

- 15.9.2010 – XV Akademické fórum: Jiří Zlatuška: Výzkum a vývoj nových technologií v Česku (rozhovor ČRo6 z 23.6.2010)
- 15.9.2010 – XV Akademické fórum: J. Musilová, Několik otázek k historii a současnosti hodnocení VaV v ČR
- 15.9.2010 – XV. Akademické fórum: J. Musilová, Zásady, postup a harmonogram pro tvorbu koncepce hodnocení výzkumu a vývoje (materiál zpracovaný autorkou příspěvku pro pracovní skupinu České konference rektorů pro metodiku hodnocení výsledků výzkumu vývoje – 13.8.2009), viz též VII. AF, 22.10.2009
- 15.4.2010 – XII. Akademické fórum: M. Černohorský, Poradní orgán pro vědu
- 23.3.2010 – Mimořádné Akademické fórum: J. Zlatuška, Koncepční problémy v metodice hodnocení 2010-12
- 23.3.2010 – Mimořádné Akademické fórum: J. Musilová, sedmý rok Metodiky – pokračování v neobornosti?
- 23.3.2010 – Mimořádné Akademické fórum: J. Rákosník, K nové verzi Metodiky hodnocení výsledků výzkumných organizací
- 23.3.2010 – Mimořádné Akademické fórum: O. Krupková, Několik poznámek k (i nadále vadné) „Metodice hodnocení výsledků výzkumných organizací a hodnocení výsledků ukončených programů (platné v letech 2010-12) z pohledu uživatele a vědeckého pracovníka
- 23.3.2010 – Mimořádné Akademické fórum: Š. Zajac, K tématu „Neobornost nové verze Metodiky hodnocení výsledků výzkumných organizací“
- 11.3.2010 – XI. Akademické fórum: J. Musilová, K vývoji aktivit v organizaci výzkumu
- 21.1.2010 – IX. Akademické fórum: J. Musilová, Metodika – mýty, fakta, důkazy
- 21.1.2010 – IX. Akademické fórum: I. Wilhelm, Alternativní možnost financování VaV v současných podmínkách
- 21.1.2010 – IX. Akademické fórum: I. Wilhelm, Alternativní model financování výzkumu z prostředků státního rozpočtu

- 21.1.2010 – IX. Akademické fórum: J. Zlatuška, K některým úskalím financování výzkumu
- 21.1.2010 – IX. Akademické fórum: M. Elleder, K hodnocení vědy
- 22.10.2009 – VII. Akademické fórum: J. Rákosník, Výzkum, vývoj, inovace v ČR: kdo, co a proč dělá nebo by měl dělat
- 22.10.2009 – VII. Akademické fórum: V. Viktora, K integraci aktivit prospěšných české vědě
- 22.10.2009 – VII. Akademické fórum: V. Roskovec, Organizace státní správy vědy a výzkumu
- 22.10.2009 – VII. Akademické fórum: J. Musilová, Zásady, postup a harmonogram pro tvorbu koncepce hodnocení výzkumu a vývoje (návrh – 13.8.2009), viz též XV. AF, 15.9.2010.
- 17.9.2009 – VI. Akademické fórum: Odpověď premiéra J. Fischera M. Černohorskému
- 17.9.2009 – VI. Akademické fórum: I. Wilhelm, Výzkum, vývoj, inovace (hrušky, švestky, brambory?)
- 17.9.2009 – VI. Akademické fórum: J. Musilová, „Metodika“ – výsledek odborně kvalifikovaného přístupu, nebo dohadovacího řízení?
- 17.9.2009 – VI. Akademické fórum: J. Rákosník Důraz na kvantitu z pohledu matematiky
- 17.9.2009 – VI. Akademické fórum: J. Smítal, Dopady hodnocení publikační činnosti na kvalitu matematického výzkumu
- 17.9.2009 – VI. Akademické fórum: J. Zlatuška, o vlastních cílech reformy – komu má reforma prospět?
- 11.6.2009 – V. Akademické fórum: Otevřený dopis premiérovi
- 11.6.2009 – V. Akademické fórum: I. Wilhelm, Je nějaké souvislost mezi hodnocením a financováním?
- 28.5.2009 – IV. Akademické fórum: J. Musilová, Metodika – možnosti a omezení kvantitativního hodnocení ve výzkumu a vzdělávání
- 28.5.2009 – IV. Akademické fórum: J. Rákosník, Metodika hodnocení a její použití – cíle, možnosti, dopady
- 28.5.2009 – IV. Akademické fórum: J. Zlatuška, Metodické problémy v Metodice (hodnocení výzkumu coby slepá ulička české reformy)
- 28.5.2009 – IV. Akademické fórum: V. Haasz, Diskusní příspěvek
- 28.5.2009 – IV. Akademické fórum: D. Munich, Čtyři systémové nedostatky stávajícího systému metodiky hodnocení a institucionálního financování VaV v ČR
- 26.3.2009 – II. Akademické fórum: J. Musilová, Systém rozdělování financí
- 26.3.2009 – II. Akademické fórum: J. Rákosník, Kam je směřována česká věda novými zákony?
- 29.1.2009 Seminář „Perspektivy“: J. Musilová, Poznámka ke zpracování dat při hodnocení výzkumu