A Training Software Platform for the Research Projects Evaluation

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Abstract
The paper presents a training software platform which can be used by the evaluators for learning how to perform the research project evaluation and how to document the whole process, writing consistent comments. For the moment, the platform is ready for use on the proposals evaluation phase, but it can be easier extended in order to also cover the interim and the final evaluations of the research projects.

Keywords: *services, goods, industrial society, knowledge-based society*

JEL classification: I23, M53, O32

Introduction

Evaluation of the research projects is a data intensive endeavor and for this reason the reliable and comparable of data are crucial (OECD, 2002). But the evaluation is relying not only on the quality and availability of data, but also on the expertise of the individuals carrying out the evaluation. Expert evaluators are at the heart of the research system and significant founding decisions are made based on the evaluator's recommendations (Bodea, 2008).

During the assessment process, the expert evaluators are locking for the answers to the following questions:

- Are objectives sufficiently focused, well-specified, realistic, appropriate to topic, and achievable?
- Are work-packages and deliverables all necessary, and are they sufficient to achieve project objectives?
- Are deliverables concrete, sensible and achievable with the methods and in the time proposed?
- Are methods described in sufficient detail to assess:
  - whether they are appropriate and likely to be effective
  - if they will deliver enough data for the aims of the work

- how much effort is involved

- Does proposal adequately either describe protocols for data collection, quality assurance, data comparison between teams, or how they will be developed?
- Are the criteria used to select field sites, determine sampling intensity, etc., appropriate and relevant to objectives?
- How do stakeholders influence the work? Is this appropriate for the objectives?
- Is management work package sufficiently well described, and if so, is it appropriate and sufficient to achieve the objectives?
- What mechanism ensures correct interaction between work packages?
- Is the effort proposed necessary and sufficient to achieve project objectives?
- Does the plan allow adequate time for start-up and wind-down activities?
- Does the proposal include an adequate communication strategy or propose ways to ensure the maintenance of databases, decision support etc after end of funding?

Based on these answers, the experts should set the scores and formulate comments justifying the scores. In order to perform the research project evaluations, the experts should understand and agree on the evaluation principles and rules, and they have to know all the reference documents, as well. Experts can do it by her / himself, or can attend informative workshops or specific trainings. The authors of the paper designed a training software platform which can be used by the expert evaluators in order to learn how to perform the evaluation of the research project and to write consistent comments, to document the evaluation process. For the moment, the platform is ready to be used by the evaluators engaged on the assessment of the research project proposals, but it could be easier extended in order to cover the interim and the final research project evaluations.

1. Relevant European Evaluation Practices

We will shortly present recommandations of the European Commision, DG RTD for FP7 research project proposal evaluation process (http://cordis.europa.eu/fp7/home_en.html**).**

1.1 The evaluation principles

The **basic principles** for proposals evalution are:

- **Excellence.** Projects selected for funding must demonstrate a high quality in the context of the topics and criteria set out in the calls.
- **Transparency**. Funding decisions must be based on clearly described rules and procedures, and applicants should receive adequate feedback on the outcome of the evaluation of their proposals.

➢ **Fairness and impartiality.** All proposals submitted to a call are treated equally. They are evaluated impartially on their merits, irrespective of their origin or the identity of the applicants.

➢ **Confidentiality.** All proposals and related data, knowledge and documents communicated to the Commission are treated in confidence.

➢ **Efficiency and speed.** Evaluation, award and grant preparation should be as rapid as possible, commensurate with maintaining the quality of the evaluation, and respecting the legal framework.

➢ **Ethical and security considerations:** Any proposal which contravenes fundamental ethical principles, or which fails to comply with the relevant security procedures may be excluded at any time from the process of evaluation, selection and award,

1.2 The evaluation process

The evaluation phases are shown in the figure 1

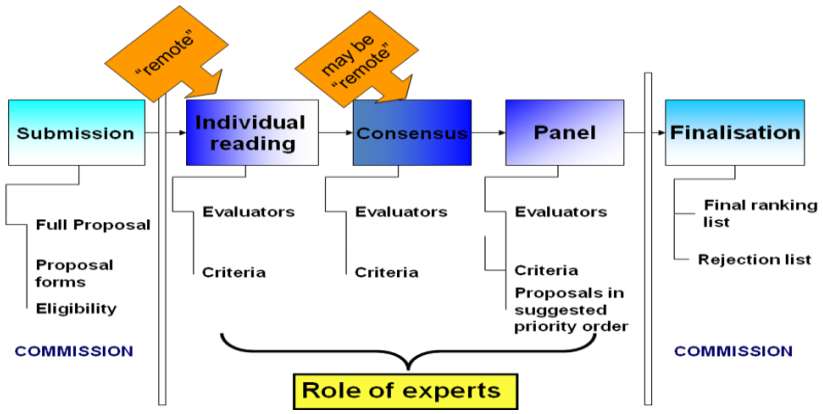


Figure 1 Overview of the evaluation process

Individual reading

The experts evaluate the proposal individually without discussing with the other evaluators. They check whether the proposal is 'in scope' and complete an Individual Evaluation Report (IER) form giving comments on all sub-criteria and scores on all criteria. IERs will be checked by the Moderator and, if necessary, returned with a request to further justify the score given. Scores must be in line with comments.

Consensus

The aim of the consensus is agreement on scores and comments. It is built on the basis of the individual evaluations and it is moderated by a Commission staff-member. Usually, it involves a discussion then the"outlying" opinions need to be explored. The consensus is not just a simple averaging exercise.

The Panel Review

The Review Panel will be composed by appointing one expert from each topic panel or by appointing new experts who did not participate in Consensus meetings

Key function is to ensure consistency. The Panel will recommend for a sub-activity a priority order including final marks and comments for each proposal. The results of this phase is the Evaluation Summary Reports (ESR). The proposals with identical consensus scores is ranked and clear guidance for contract negotiation is done.

1.3 The evaluation criteria

Criteria are adapted to each funding scheme and each thematic area and they are specified in the work programme (Gheorgiou et al., 2002). Three main criteria are applied in all evaluation processes (figure 2):

- ✓ S&T Quality (concept, objective, work-plan)
- ✓ Implementation (individual participants and consortium as a whole and the allocation of resources)
- ✓ Impact (contribution to expected impacts listed in work programme and the plans for dissemination/exploitation)

S/T quality (relevant to the topics addressed by the call)	Implementation	Impact
1. Innovative character in relation to the state-of-the-art 2. Contribution to the advancement of knowledge / technological progress 3. Quality and effectiveness of the S/T methodology and associated work plan	1. Quality of the consortium as a whole (including ability to tackle fragmentation of the research field, and commitment towards a deep and durable institutional integration) 2. Adequate resources for successfully carrying out the joint programme of activities	1. Appropriateness of measures for the dissemination and/or exploitation of projects results, and management of intellectual property.

Figure 2 Evaluation criteria for all funding schemes

1.4 The research project proposal scoring

Each criterion is scored 0–5. Marks can go from 0 – 5 in steps of 0.5. Scores must pass *thresholds* if a proposal is to be considered for funding. To receive a mark of 5, a proposal does not have to be perfect. An excellent proposal can have minor shortcomings. When writing comments in the IERs and Consensus Report, the severity of any weakness should be clearly stated, i.e. are they minor, moderate or significant. The figure 3 presents the interpretation of scores.

0 - The proposal fails to address the criterion under examination or cannot be judged due to missing or incomplete information
1 - Poor. The criterion is addressed in an inadequate manner, or there are serious inherent weaknesses.
2 - Fair. While the proposal broadly addresses the criterion, there are significant weaknesses.
3 - Good. The proposal addresses the criterion well, although **improvements would be necessary**.
4 - Very good. The proposal addresses the criterion very well, although **certain improvements are still possible**.
5 - Excellent. The proposal successfully addresses all relevant aspects of the criterion in question. **Any shortcomings are minor**.

Figure 3 Interpretation of scores

2 Relevant national evaluation practices

The national practices are similar with the European ones, the same principles and process structure. The main differences are related to the evaluation criteria and scoring procedure.

Considering the project completion organized in 2009 by CNCSIS (www.cncsis.ro), the criteria applied for the evaluation of PD proposals are:

- Importance and relevance of scientific content (15 points)
- Quality of the Proposed contributions (15 points)
- Project Plan (20 points)
- Scientific and managerial competence of the project manager (35 points)
- Quality / capacity of the host institution (5 points)
- Project Budget (10 points)

The allocated points for a criterion show the importance of that criterion. A very important criterion is the scientific and managerial competence of the project manager (35 points), followed by the project plan (20 points).

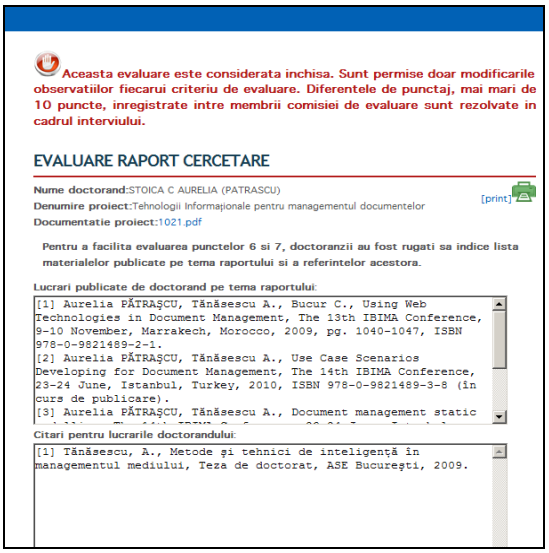
The scoring scale is 0-100, so the evaluation process is more difficult to be achieved (Bodea et al., 2009).

3. The evaluation dificulties

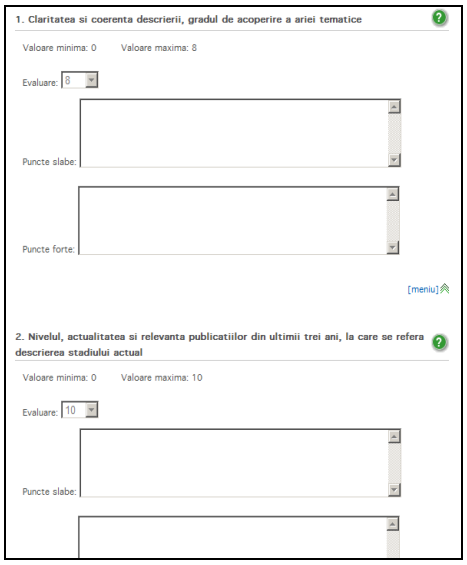
The applicants are often complaining about the evaluation consistency and quality. They point out the inconsistency of comments between evaluators; difficulties in relating comments to the evaluation criteria; and vague comments. For evaluators themselves, there is the problem that writing comments is a high time-consuming task. Some evaluators wrote detailed comments, others offered a brief feedback; some experts gave advice on how to improve on future proposals, while others adhered to summative feedback. (Biggam, 2010).

It was not only that different experts could approach feedback in inconsistent ways, it was also recognized that there was the danger that the same evaluator could unwittingly be inconsistent in dealing with different proposals or get wrong calculation.

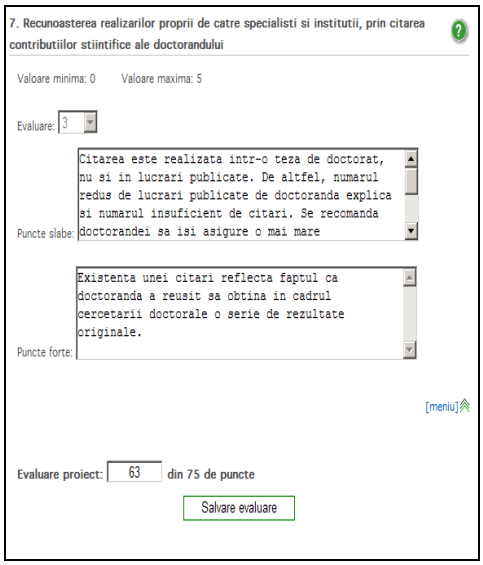
A solution for this kind of problems is the usage of an evaluation platform. For exaample, the European Commisision has **RIvET platform** in place. CNCSIS uses a proprietary platform. The figure 4 ptesents the platform used in the Academy of Economic Studies, the PhD School to evaluate the research projects (www.doctorat.ase.ro).



a) The main page



b) The criterion page



c) The final page

Figure 4 The evaluation platform of the Academy of Economic Studies, Ph.D. School

4. The proposed training software platform

The authors developed an
The main page, with the evaluator autentification is presented in figure 5.

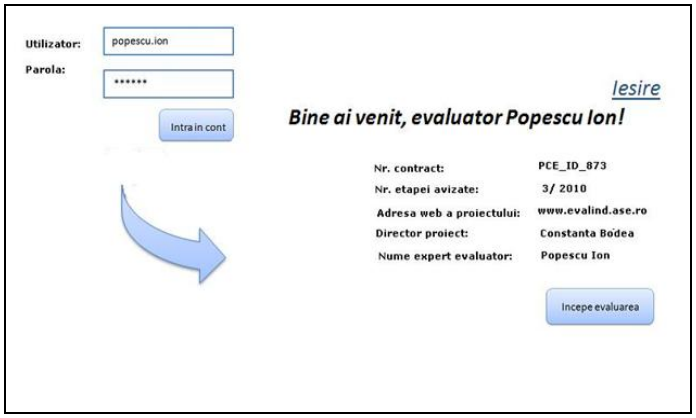


Figure 5 Start-up screen for project evaluation

The evaluator has to complete the criteria form: for each predefined criteria, the evaluator has to choose whether the criteria was fulfilled, not fulfilled or it isn't applicabile for the current project; in the case it isn't applicable, the entire row for that criterion from the grid in Figure 6 will be disabled.

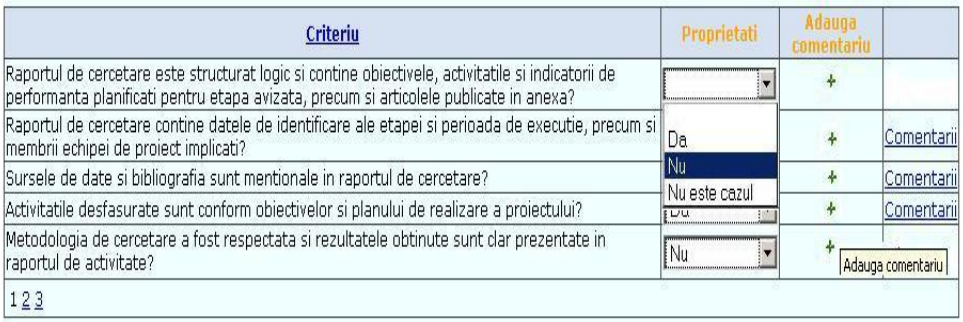


Figure 6 Criteria form

A comment can be added, for each criteria by pressing the plus button; once the button is pressed, a list of predefined comments is shown; the evaluator can add one or more comments from that list (figure 7); the comments are specially created for each criterion and stored in an Access database; by these automated comments, the unified evaluation is ensured; the evaluators receive suggestions for correctly evaluating the projects; the researchers in the project feel they are treated equaly, the chance of receiving a too severe/ kind assessor is reduced;

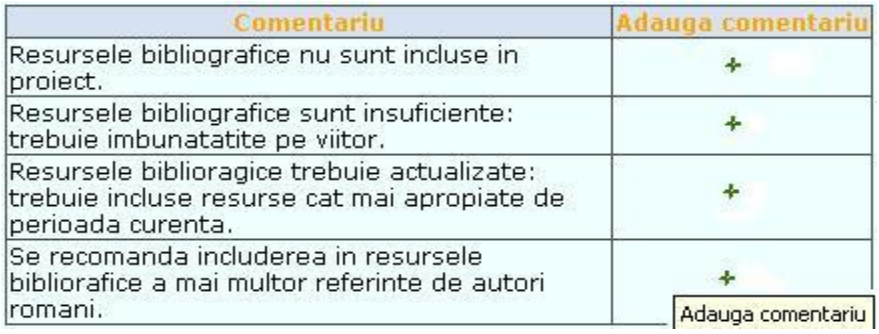


Figure 7 List of available comments

By the end of the session, the evaluator can change his mind regarding the comments he alreay added; in this case, he has to click on the link "Comentarii" (Comments) from the criterion row and delete the comments he has previously added (figure 8);

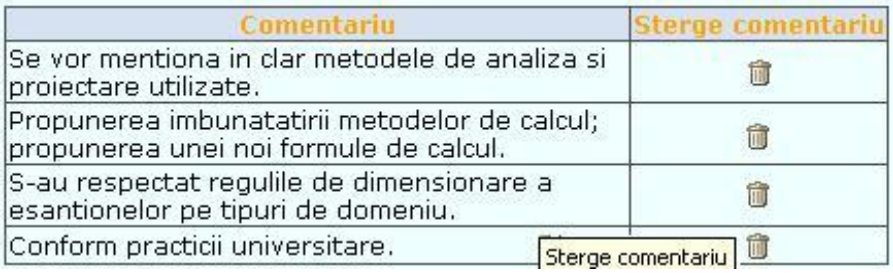


Figure 8 Comments which have been added for the criterion "Has the research

methodology been respected and are the research results clearly presented?"

After completing the criteria form, the evaluator continues with the performance indicator form (figure 9); for each performance indicator, the following details have to be filled in:

- predicted value and realized value; these two values can be added with the aid two user controls developed in .NET; the user controls have one input field and one add button; the value inserted in the input field is validated: it has to be a numerical value, from a certain range; the total score for the realized values is displayed at the end, in the final evaluation sheet, for avoiding certain adjustments of the score;
- the proof of achievement: check boxes are used; they are check, in the case the proof exists and unchecked otherwise;
- check boxes to show whether the achievement was total or partial;
- the possibility to add a new comment, from the available list of predefined comments, like in the criteria form;
- the possibility to check the already added comments;

Denumire indicator	Val. prevazuta|Val. realizata	Dovada totala a realizarii	Realizarea a fost totala	Adauga comentariu	
Au fost realizate activitatile planificate pentru activitatea curenta.		☑	☑	+	Comentarii
Metodologia de cercetare a fost respectata.		☐	☐	+	Comentarii
Concluziile cercetarii au fost validate.		☑	☑	+	Comentarii
Sursele de date si bibliografia au fost mentionate in raport.		☐	☐	+	Comentarii
A fost asigurata calitatea metodelor/modelelor si calitatea datelor.	100 | 98	☐	☑	+	Comentarii

Figure 9 Performance indicators form

In the end, the evaluator has to make some recommendations (figure 10): he can choose from the list of predefined available comments (by pressing the corresponding button) or he can add a personalized comment, by pressing the plus sign; these personalized comments are used by evaluation experts to improve the existing database of predefined comments;

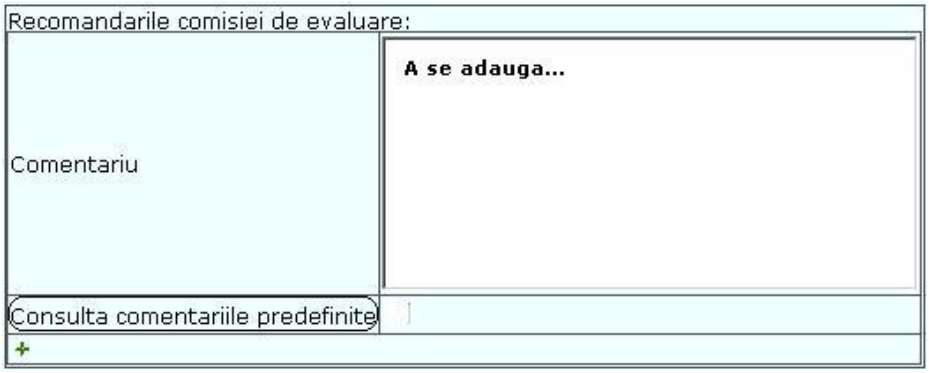


Figure 10 Recommendation form

The workflow of the application is resumed in figure 11. Predefined feedback comments are "read" from the comments database in three different modules: criteria module, performance indicator module and recommendations module. Also, the last one communicates via a web-service with the application used to insert predefined comments in the database. The application "announces" some human experts, who keep or not the new comments. These experts are practically the ones who insert comments in the database.

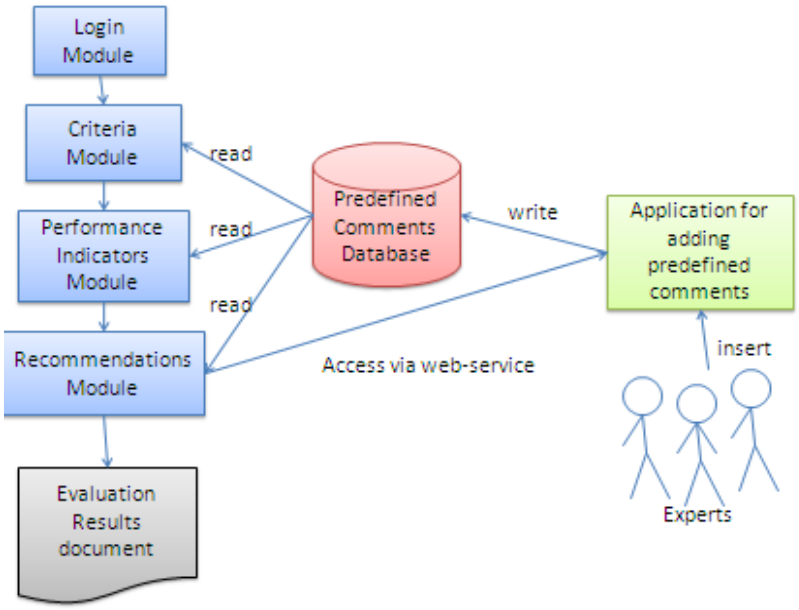


Figure 11 Workflow in the evaluation process

Conclusions

The system allows simulations of real evaluation process. These simulations are quick and simple evaluation exercises, in order to learn to give consistent, and relevant, comments to the applicants. For further improvements, we intend to offer the possibility of using the application in other languages (English, for example). In this way, the automated feedback application will ease the work of other international research teams, too.

After the completion of the development process, a survey will be done in order to assess the platform efficiency in the improvement of the evaluation skills.

Acknowledgments

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