EICSTES DELIVERABLE D7.1

Evaluation, assessment and users involvement plan

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1. Introduction

The general objective of this WP is to guarantee the quality and correct timing according to the proposed schedule of the contributions, the efficient integration of the results, the evaluation of their diffusion and the adequate expenditure of the allocated resources.

The proposal already considered the importance of a constant assessment and evaluation of the consortium performance involving the level of fulfilment of the objectives according to the scheduled milestones.

From a practical point of view, this requires at least the following tasks:

- Internal monitoring of the performance of the project mainly from exchanges using email messages and especially during internal consortium meetings scheduled at least 2 times each year
- End users involvement, from the very beginning of the project by the network of websites and periodically from surveys to colleagues in open events
- Informal peer-reviewing from other colleagues
- Formal peer-reviewing in the middle and the end of the project
- Formal evaluation by peers and officers from EC

This WP covers the whole duration of the project, but specially the mid-term and final evaluation.

Evaluation of Research Projects

The need of a rigorous evaluation of the project is clearly justified by the fact that is funded by the scarce European public resources devoted to R&D. These resources, obtained from the EU citizens taxes, are obviously oriented to the achievement of explicit social and economic profits.

Clearly, this project needs to satisfy certain demands in terms of attained economic return and produced social impact. Such general demands can be formulated in terms of the evaluation criteria for the effectiveness of the funded projects, which, thus, can be seen as investments from both the economic and the social point of view.

But evaluation is also part of the research-innovation process as understanding the performance of a project can lead to its improvement and optimisation. That means a tight integration among both worlds as suggested by Michel Callon when he defined his evaluation criteria according to the:

1. Production and circulation of certified knowledge (through publications in journals and participations in conferences).
2. Creation of innovations (for the advancement of competitive advantage).
3. Contribution to achievement of the objectives of public authorities (such as collective goods, power, prestige and well-being).
4. Provision of embodied knowledge (through training).
5. Extending the public understanding of science and technology and popularising the relevant expertise acquired through the project.

These ideas are translated into the evaluation criteria as used by European policy-makers for Community funded RTD investments:

[1] Scientific/technological quality and innovation.
[2] Community added value and contribution to the EC policies.
[3] Contribution to community social objectives.
[4] Economic development and S&T prospects.

To the above four criteria, a fifth one is sometimes added:

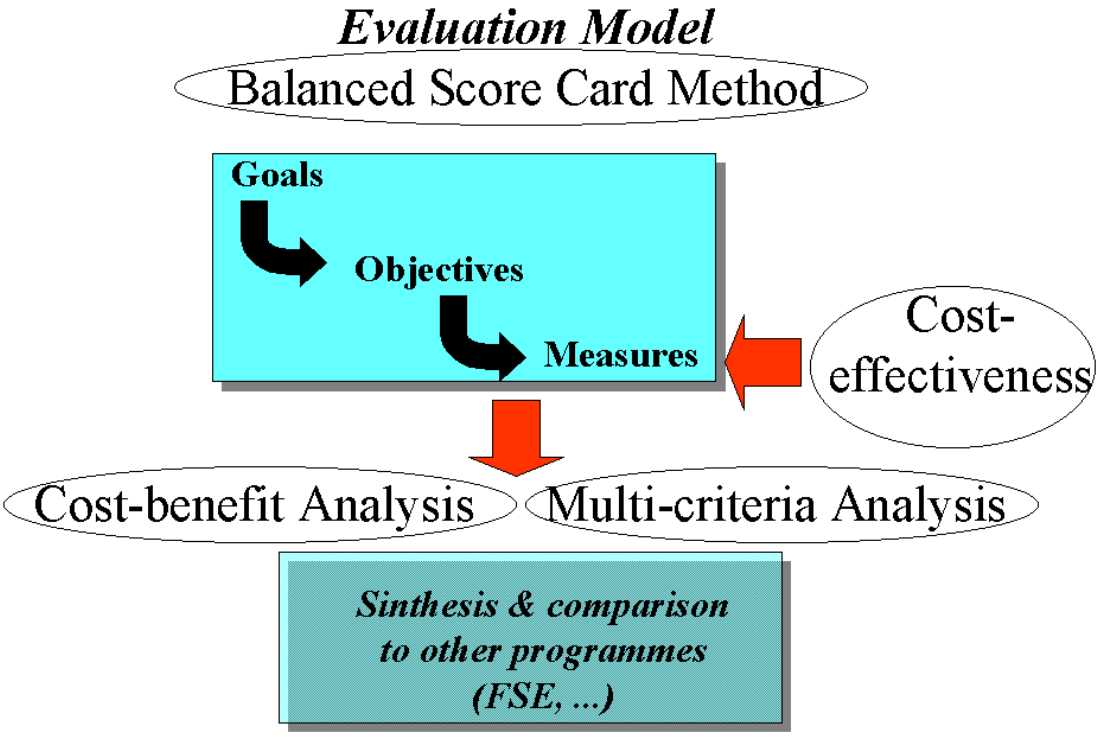
[5] Resources, partnership and management.

From the consortium point of view not only socio-economic effects should be evaluated but also intangibles like impact on individual and organisational learning effects (including partnerships and networking), influencing norms and standards, generation of externalities, and contributions to skills and research manpower. Obviously, these impacts can hardly be expressed in economic terms and require the use of a broad set of indicators.

2. Measurable Objectives and Performance Indicators

The evaluation of a project requires the formulation of project objectives in a measurable and verifiable form and to be able to generate consistent indicators, which would benchmark the project performance.

To proceed with the evaluation of RTD programmes EU has developed a project-level toolkit approach known as COMEVAL (Common Methodology for the Evaluation of RTD Results). COMEVAL provides a standard terminology for the collection of data on project aims and outputs and a set of criteria on which to judge project achievements.



There are four different kinds of measures (or indicators):

- Outcome measures, which identify the extent to which the project has achieved its goals objectives, met various requirements or professional standards.
- Output measures, which indicate the number of produced units (such as new products, new processes, new patents, new models, new methods, new tools, etc.) or provided services (such as workshops, conferences, seminars).
- Efficiency measures, which provide cost (or the amount of other resources) indicators per unit of output (such as cost per participant to seminars, cost per patent, cost per new process, cost per new product).
- Cost-effectiveness measures, which measure the cost per unit of outcome.

As a remark, in the project evaluation process, one should be aware of the need for those objectives and indicators, which could respond flexibly to changed internal and external (to the project) circumstances. For instance, it might happen that unexpected spin-offs are so important that they can modify the context of the original targets.

Furthermore, one should recall that project evaluation is based on accumulated project data. Two kinds of such baseline data are needed for evaluation: Technical data on the planning, progress and termination of the various project phases and more detailed data on the performance of the project. These data need to be collected systematically and updated regularly in order to be able to map properly the degree of efficiency and coverage of the planned goals, tasks and deliverables of the project. As a result, the project evaluation methodologies favoured by EU might proceed in different steps and phases of the project according to the produced data at each step or phase.

Finally, let us highlight that project evaluation should play an important role in project management by providing a reflexive, sensitive and accountable mechanism of adaptation to the evolving conditions of the project implementation (although the anticipation of possible significant risks and contingency plans should be also incorporated in the project workplan). In this sense, processes of project evaluation should contribute to an integrated project management..

2.2. Proposal for the EICSTES project

The general aim of the EICSTES project is to offer statistics and to derive indicators about the European Science-Technology-Economy System in Internet. This goal will be accomplished by advancing the following specific project objectives:

- Compilation of the data about web presence of EU R&D public system using automatic agents
- Discover and describe the relationships and patterns among new economy actors using web data
- Describing and analysing such relationships using advanced mathematical methods (graph theory, complexity and chaos theories and social network analysis)
- Testing the models with selected case studies
- Measuring and evaluating the impact of the information technologies in the Society as a whole and on the citizens and their quality of living.
- Disseminating the results in an open user-friendly graphical environment using new web visualisation techniques.

Peer-evaluators of the EICSTES project should assess the degree in which the outcome of the project is satisfying the following four EU criteria:

C1: Scientific Value: Scientific/technological quality and innovation.
C2: EU Policies Support: Community added value and contribution to the EC policies.
C3: Community Profits: Contribution to community social objectives.
C4: Techno-economic Prospects: Economic development and S&T prospects.

Of course, the outcome of the project consists of the main project deliverables (taking aside the technical deliverables for the project management and preparation of research). The main project deliverables are eight (8) and they are distributed among the above criteria (in the sense of contributing to the achievement of the goals of the criteria) as follows:

C1: Scientific Value:
- Deliverable D.1.4 (State of art review)
- Deliverable D.2.1 (Physical Internet Statistics)
- Deliverable D.8.x (Web Data Analysis)

C2: EU Policies Support:
- Deliverable D.8.4. (Analysis and integration of results)
- Deliverable D.10.3 (Final report)

C3: Community Profits:
- Deliverable D.1.2 (Websites network)
- Deliverable D.3.1 (Directory of EU R&D public system)

C4: Techno-economic Prospects:
- Deliverable D.4.x (Software developed)
- Deliverable D.5.x (Case studies)
- Deliverable D.6.3 (Intermediaries role in the new economy)

These deliverables will be evaluated according to the degree each of them satisfies the following three project performance indicators:

I1. Achievement of the general aim of the project
I2. Attainment of the specific objectives of the project
I3. Contribution to EU policies

Furthermore as the peer evaluation of the project will be conducted throughout almost the whole duration of the project, the peer-reviewers will be asked to answer questions as the following in order to interact constructively with the project consortium:

- In what ways could this work be improved upon to increase the likelihood of the project achieving (a) its general aim, (b) its specific objectives and (c) its objectives in relation to EU policy?

Thus the peer-reviewers will be asked to put to each square the grades L = low, M = medium and H = high in the following evaluation table (with the exception of the last column where they will be requested to write their comments and suggestions):

3. Consortium driven evaluation.

The consortium intends to focus the evaluation in both the scientific results and end users involvement following specific EUROSTAT requests. High levels of quality in the development of the project required regular feedback from intended users on its results and directions.

3.1. Users meetings

On the occasion of the EICSTES' Kick-off meeting in Barcelona, 18-20 January 2001, a questionnaire was distributed among the professionals invited to the EICSTES presentation, being them predominantly statisticians.

The questions were simple in order to get the maximum number of respondents:
Question 1. Please describe your current experience with internet related indicators and statistics of the information society and the new economy.
Question 2. What are your main needs for statistics in this field? Please provide as much detail as possible.
Question 3. What do you expect from the EICSTES project?

See the answers compiled in the Annexe to this deliverable.

The analysis of the questionnaires is interesting, but one of the general conclusions drawn was that it would be better to postpone further users meetings until more Eicstes results had been attained. In this way it would be possible to concentrate the discussion on the project matters themselves and thus to get more useful specific feedback.

During 2002 there are foreseen two selected users meetings focused on other project related topics like sociological aspects of the new technologies and data representation.

3.2. Mid-term Evaluation

A mostly informal peer review and opinion contrast about interim project results have proceed during the first year of the project. This could be possible thanks to the cross-evaluation among different partners and among other colleagues during international congresses or by means of electronic conferences. There were also working visits among partners, when some researchers have paid various work visits to each others organisations.

However when the first tangible results of the project became available at the middle of 2002, the partners will commence to undertake a formal evaluation about performance and level of objectives fulfilment, using external reviewers. This process is called Mid-term evaluation.

The procedure involves subcontracting experts from external institutions for mid-term evaluation, that consists of both a global report of the work done and the peer review of the deliverables involving analytical reports. These Deliverables are:

- D.2.1. Physical Internet Statistics
- D.3.1. Directory of EU R&D public system
- D.5.1. “Triple helix” case study
- D.5.2. Non web data collection and analysis
- D.6.1. Intermediaries taxonomy
- D.8.1. Development of Webindicators

Due to similar activities carried out by the following colleagues and organizations are candidates to be invited to evaluation:

University of Sussex (SPRU). UK
University of Maastricht (Merit). Netherlands
CRICT. Brunel University. UK (Dr Christine Hine)
University of Nijmegen. The Netherlands (Nicholas Jankowski)

The mid-term evaluation should produce a document to be submitted as Deliverable to EUROSTAT. There is no specific format for that Report, but some specific points should be included according to the basic aims of the evaluation described in this document.

3.3. Deliverables evaluation

Once finished mid-term evaluation, all deliverables completed after that date will include a section of comments from external evaluators. These reviews are part of the Deliverables and they will consists of several paragraphs discussing methods and results.

3.3.1 Internal discussions

All the Deliverables are distributed one month in advance to the members of the consortium by email. Discussions about the contents requires some times important changes in the texts.

3.3.2. External comments

The key deliverables will sent to external colleagues for comments and discussions.

3.4. Final Evaluation

Prior to the EUROSTAT final review of the project, a new in-depth review will be asked to the external evaluators who made the mid-term review. Again the objective is to make a complete Report that will be send as Deliverable to the Commission.

4. EUROSTAT driven evaluation.

As stated by the Commission, the objective of the review process is to provide, through peer review and subsequent decisions by the Commission’s services, a basis for an optimum compromise between external and internal audit procedures, and in particular to provide

at the level of the project

- an evaluation of the project as regards the fulfilment of its contractual obligations (availability and quality of the deliverables),
- a tool for issuing guidelines to the contractors in order to fulfil the projects' objectives,
- a way to monitor, anticipate and increase the possibilities for exploiting the results of the project,
- a mechanism to reorient, suspend, change or interrupt a contract;

at the level of the action-line

- a mechanism to assess the impact of projects on the pursuing of the general goals of the IST programme and of EUROSTAT R&D activities.

The Project Officer is invited to all the consortium meetings, where he usually actively participate.

4.1. Annual peer review.

The annual review process is an improved version of that applied with the 4th FP, with the following new characteristics:

- The role of the reviewers are explicitly defined and explained
- The revision is made by a group of reviewers covering the spectrum of disciplines and scopes of the projects,
- The National Statistical Institutes and end-users communities should be associated to the review processes.
- There are new optimised review reports,
- More emphasis is put on exploitation,
- More capability to modify management of the research programme, involving promotion of clustering.

On site reviews are carried out once a year, during a normal project meeting or an EPEOS session and are attended by the Project Manager and the management board of the project (or equivalent), the Reviewers, including the Project Rapporteur and the EUROSTAT Project team.

4.2. Final Review.

The final review of a project can be done either during the last review session, or on the basis of the final report and deliverables of the project, without meeting the project manager.

Annexe

Analysis of the fulfilled questionnaires received during the first EICSTES end-users meeting

Question 1. ***Please describe your current experience with internet related indicators and statistics of the information society and the new economy*:**

1.1. We use all the current available data sources to understand differences among countries in the ICT usage levels and how they relate to other factors like income, education, infrastructures, prices...

1.2. I try to find a methodology to evaluate the ICT impact in the different countries. I used to work for the UN Information Systems area. I was Technical Director of the National Statistics Office in my Latin American country (country not specified).

1.3. Development of a project to measure the penetration of ICTs in Navarra region (North Spain) by mean of home surveys, enterprises surveys.

1.4. I am expert only at consulting Eurostat databases.

1.5. We search statistical and document information on building, land use, transportation, etc., and disseminate it. We also elaborate reports and add value to retrieved information.

1.6. We gather statistics on B2B carrying out direct field work among the companies.

1.7. I use web site analysis tools. My colleagues want to describe the macroeconomic nature of the regional development and use my tools to compare the economic performance of small areas.

1.8. We gather statistics on employment on ICT sectors.

1.9. We gather results and macrodata on Industry, Commerce and Tourism, having a special interest in ICT related segments. We assess the situation both quantitatively and qualitatively.

1.10. We gather statistics on occupation and unemployment in ICT sectors.

1.11. I specialise in modelling files by fractal stochastic processes.

1.12. We provide all kind of industry statistics and information to our clients.

Question 2. ***What are your main needs for statistics in this field? Please provide as much detail as possible***:

2.1. Usage patterns of the various media (TV, VCR, PC, internet, etc.). How people use them. Companies attitude to teleworking.

2.2. Indicators to measure the ICT impact on the citizens. This compels to work under a phenomenological standpoint, descriptive and inferential statistics. To identify qualitative variables through *grounded theory* or ethno-methodology.

2.3. To define correct indicators, definitions and standardised classifications so that to compare different statistics.

2.4. Basic training on this matters. Easy to understand results.

2.5. To find and compare statistics easily, specially by geographical areas. Very frequent updates in order to get conjuncture information.

2.6. B2B indicators and statistics. ICT usage in classical or traditional industries. Definition of ICT services and products.

2.7. Data on specific individuals because I work on microeconomics-microeconometrics.
Which variables are relevant when gathering individual information?
How to obtain small area statistics on ICT so that towns or ZIP code areas can be characterised?
Methods to measure the quality of use of ICT by individuals.

2.8. Data on ICT training needs. How occupation increases (by sectors and by activities) number of jobs, number of firms. In particular I am interested in knowing this at municipal level.

2.9. A few set of simple and integrated (industry) indicators that can be updated easily.

2.10. Standard indicators, flexible to be adapted over the time to various contexts and to the society development dynamics.

2.11. To study and research on developments, applications, statistics on the New Economy...

2.12. We are specially interested in ICT data for companies in order to advise them about investments, methodologies, knowledge management technologies...

Question 3. ***What do you expect from the EICSTES project?***

3.1. To provide data about how the various cultural factors may affect the "speed" to adapt to the information society, comparing the different countries and social segments.

3.2. To provide definitions and methodologies that I can use as indicators. I want to take advantage of the field data collection procedures used in the project that will feed the chosen models. I also wish to take profit of the EICSTES theoretical fundamentals.

3.3. I wish the homogeneous indicators set provided by EICSTES be an example to other statistics producers. The conclusions about the ICT impact on society (science-technology-economy) should give a new vision setting perhaps new standards.

3.4. The results must be easy to understand, with good visualisation tools.

3.5. A better access to information sources. Homogeneous indicators. Good tools that allow to carry out comparisons among EU countries. Updated historic series.
Good visualisation tools (maps, graphs...).
Data on the ICT's impact on traditional industry sectors like building and transportation.

3.6. Good international comparison in the B2B field.

3.7. We expect a lot of this project as we find it very interesting, specially the use of intelligent agents and the analysis of the New Economy. Besides of the EICSTES results themselves, the project will be useful to further increase the knowledge of the needs of the information society citizens.

3.8. Methodological analysis of the ICT statistics and improved classifications and data. In particular, the ICT labour market.

3.9. Should provide a methodology for obtaining simple indicators that can be elaborated easily, flexible to adapt to all regions, and to each sector and subsectors. Visualisation is important but also tables should be available.

3.10. An easy way to retrieve and to visualise results. A good set of indicators (data) about each country and region. A continuous update of the methods used to achieve the results.

3.11. Advanced measurements' methods of the new economy.

3.12. To recognise trends about the internet and the ICT and how they are affecting the business development. Most promising technological research areas.