

Research Assessment in Informatics, Computer Science and IT Departments and Institutes

Letizia Tanca

Informatics Europe Board
Politecnico di Milano, Dipartimento di Elettronica e Informazione

Joint work with:

Hans-Ulrich Heiss, Jan van Leeuwen, Cristina Pereira and Jorgen Staunstrup

September 22nd, 2011

Informatics Europe

- The association of the Computer Science Departments of Universities and Research Laboratories, public and private, in Europe and neighboring areas.
- Its mission is to foster the development of quality research and teaching in Information and Computer Sciences.
- Main activities and services include:
 - convening discussion and working groups in key issues of interest to the discipline and the profession, e.g. Research Evaluation for Computer Science, or Student Enrollment and Image of the Informatics Discipline;
 - the organisation of the annual European Computer Science Summit and other events;
 - organizing and publishing an extensive archive of European Research Education institutions;
 - offering a specialized forum for the advertisement of job opportunities in the field through the Informatics Jobs service;
 - ...and a number of other activities

Informatics Europe and Department Evaluation

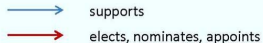
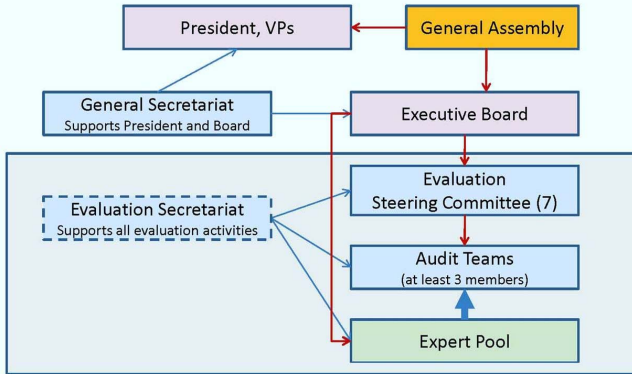
- Informatics Europe proposes itself as an evaluation agency offering assessment of research quality in Computer Science Departments and Research Institutes in Europe and beyond
- Aspects like research management, research policy, research facilities, Ph.D.-training and the societal relevance of research are considered as integral parts of the quality of the work of an institute and its programmes.
- Europe has observed increasing efforts to design methods, protocols and guidelines for the assessment of research quality, primarily at the national level
- The evaluation system proposed by Informatics Europe is based on a systematic acquisition and assessment of information about the institution

Objectives and Criteria of the Evaluation

- The Informatics Europe evaluation system intends to provide an output that will contribute to better decisions concerning policy and planning, strategic positioning, research strategy development and management
- An evaluation panel selected by the Department Evaluation Steering Committee of Informatics Europe is committed to delivering useful feedback to impact decision-making.
- The panel includes international experts who have a solid experience in the areas of research covered by the institution under assessment, and members with previous experience in academic management.
- The initiative will **not** produce:
 - a Certifications (attestation of compliance with minimum standards for research programmes)
 - b Ranking (comparing the performances of different departments on a one-dimensional scale)

Organizational Structure

IE Evaluation Organisational Structure



Objectives and Criteria of the Evaluation

The recent EU report “Assessing Europe’s University-Based Research” underlines the importance of the level at which the quality of research is assessed. The proposed assessment:

- takes place at two levels of the research organization:
 - ① the level of the institute (or faculty or research school)
 - ② the level of research groups or programs
- considers three vital tasks of research organizations:
 - ① producing results for the academic community,
 - ② producing results that are relevant for society, and
 - ③ educating and training the next generation of researchers

The evaluation process proposed by the Informatics Europe initiative holds close resemblance with the SEP 2009-2015 system proposed for research assessment in the Netherlands, adopting some of the criteria described in the SEP protocol.

On Performance Indicators

- Research quality assessment is most often undertaken to, inter alia, improve research performance and quality, allocate resources, drive research mission differentiation or promote innovation and community engagement.
- No single set of indicators can meet all the requirements or provide all solutions
- The assessment method proposed by the Department Evaluation Initiative of Informatics Europe is composed of a combination of quantitative and qualitative indicators, using documentation analysis and site visits.

On Performance Indicators

Advantages of this approach:

- ① indicators provide peer experts with condensed, systematic, verified and objective information on the research performance of the institution;
- ② the results provided by indicators are never self-evident but must be evaluated and interpreted in the context of the discipline, national circumstances, the university, etc.: this can only be done by experts;
- ③ indicators aid good judgment by supporting or challenging peer assumptions, thereby making the assessment process more transparent;
- ④ indicators can provide additional, objective information on research performance from a global perspective

On self-assessment

- Preparing the documentation that reflects on performance enables the research to be placed within the context of the distinctive research mission and strategy, and encourages consideration of achievements and disappointments.
- Self-evaluation benefits from involving researchers in the process and encourages them to become involved in helping define excellence and setting the strategy for improvement. In this way, it reinforces internal quality processes.

The main evaluation criteria

- 1 Quality and scientific relevance of the research
- 2 Academic Reputation
- 3 Doctoral training
- 4 Research Infrastructure
- 5 External funding and resources
- 6 International Orientation
- 7 Diversity
- 8 Interdisciplinarity
- 9 Innovation, technology transfer and social benefit

The Evaluation Process and Outcome

The designed evaluation process has two variants:

- 1 The evaluation model **Light** consists of the analysis of the documentary basis provided by the institution and of a one-day site visit of the evaluation panel, which includes only meetings with the institution management.
- 2 Evaluation model **Deep**: additionally to the documentation analyses, the evaluation panel also visits the institution.
 - The team and the management of the institution will agree on the programme for the visit.
 - The evaluation panel receives all relevant material (the self-evaluation document and the visiting programme) prior to the visit.
 - The visit should contemplate meetings with various members of the institution – like the Rector, the Department Head, representatives of the PhD students etc. –, presentations by research groups and discussion, visits to labs and facilities, etc.

The Evaluation Process and Outcome

- The institution will receive an extensive evaluation report and outcome of the evaluation.
- The panel of experts has the professional responsibility for the conclusions of the report, its assessments and any recommendations.
- The report will contain recommendations that may effectively contribute to the elaboration of short and long-term strategies to improve the quality and impact of the research carried on in the institution.
- The decision to make the full report public will be ultimately reserved to the institution.

Conclusions and Acknowledgments

- We have described, very briefly, the Department Evaluation Initiative of the Informatics Europe association.
- Informatics Europe has the international standing and, through its members and its network of relationships, the expertise to do it
- through this initiative Informatics Europe can learn more about research and higher education in Informatics in different (European) countries
- Informatics Europe can provide the service also outside Europe
- The effort to make the initiative operational is still going on, and we hope to be able to provide the full-fledged service by 2012.
- The author wishes to thank the other members of the Informatics Europe Working Group on the Department Evaluation Initiative : Hans-Ulrich Heiss, Jan van Leeuwen, Cristina Pereira and Jorgen Staunstrup

References



Standard Evaluation Protocol 2009-2015. Protocol for Research Assessment in the Netherlands. VSNU, KNAW and NOW. At:
<http://www.vsnunl.nl/Media-item-1/SEP-protocol-2009-2015.htm>.
the Netherlands, 2009.



Guidelines for Research Evaluation. Ministero dell'Istruzione, dell'Università e della Ricerca. Committee for the Evaluation of Research (CIVR).
At:*http://civr.miur.it/modulo_eng.html*. Italy, 2006.



Research Assessment Exercise (RAE 2008). HEFCE, SFC, HEFCW and DEL. At:
<http://www.rae.ac.uk/> United Kingdom, 2008.



Assessing Europe's University-Based Research - Expert Group on Assessment of University-Based Research. European Commission. Directorate-General for Research, Directorate C - European Research Area: Knowledge-Based Economy, Unit C.4 - Universities and Researchers. Belgium, 2010.

Join the next Informatics Europe conference!!

Join the next Informatics Europe conference!!

**7TH EUROPEAN COMPUTER
SCIENCE SUMMIT**



**ECSS
2011**

www.ecss2011.polimi.it

**INFORMATICS
TRANSFORMING
SOCIETY**

7-9 November
2011
Milan, Italy

*Join leading decision makers in
Informatics research and education to
discuss the most critical issues of the
discipline!*

KEYNOTE SPEAKERS

- Stefano Ceri - Politecnico di Milano
- Willem Jonker - CEO EIT ICT Labs
- Miron Livny - University of Wisconsin
- John Mylopoulos - University of Trento
- Xavier Serra - University Pompeu Fabra
- John White - CEO ACM

CONFERENCE CHAIRS

- Bertrand Meyer - ETH-Zurich
- Letizia Tanca - Politecnico di Milano
- Yannis Ioannidis - University of Athens



ORGANIZED BY

Informatics Europe



**POLITECNICO
DI MILANO**
DIPARTIMENTO DI
ELETTRONICA E
INFORMAZIONE

SPONSORED BY



Google

