METRONOME
Methodology for evaluation of FP5 and FP6 project impacts in the field of transport

The Ex-post Evaluation Cluster work shop
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Anu Tuominen, VTT
METRONOME
A Methodology for evaluation of project impacts in the field of transport

- EC FP7 project
  - Start date: 01 February 2008
  - Duration: 18 months

- Project Consortium
  - VTT Technical Research Centre of Finland, Finland (co-ordinator)
  - DVS Centre for Transport and Navigation, The Netherlands
  - Hellenic Institute of Transport CERTH/HIT, Greece
  - Transport Research Centre CDV, Czech Republic
  - Transport Research Laboratory Ltd TRL, Great Britain
  - Universidad Politécnica de Madrid UPM, Spain
METRONOME Objective

To develop a methodology for evaluating achievements and potential impacts of projects supported in FP5 and FP6 with particular focus on:

- Strengthening industrial competitiveness (IndCo)
- Contributing to sustainable development (SuD) and
- Improving community and public policies (CPP)

To evaluate a sample of 100 FP5 and FP6 projects with the developed methodology. All transport modes except aviation were included

The expected impact set for the project was to use the results and findings from the FP5 and FP6 projects to contribute to the definition of intermediate performance targets for FP7 and new research policy objectives
METHODOLOGICAL DEVELOPMENT

ANALYSIS USING METHOD (TESTING)

VALIDATION OF RESULTS AND THE METHOD

FINAL RESULTS

WP 1  Management and dissemination

WP 2  The aggregate framework

WP 3  Methodology for strengthening Industrial Competitiveness IndCo

WP 4  Methodology for contributing Sustainable Development SuD

WP 5  Methodology for Improving Community and Public Policies C&PP

Time scale: 18 months

Project duration: 01 February 2008…31 July 2009
METRONOME methodology

1. Transport research and policy objectives for
   - IndCo
   - SuD
   - CPP

2. Project screening and selection
   - Identification of relevant FP themes and projects within
   - Acquisition of project end products (Final reports)
   - Project selection with text mining software and checklist

3. Evaluation of project achievements and impacts
   - Identification of FP and project specific targets
   - Identification of evaluation criteria
     - Impact groups
     - Indicators
   - Project evaluation:
     - Evaluation matrixes
     - Coordinator questionnaires
     - Lead user interviews
     - Work shop

Results
The METRONOME approach has two dimensions

1. **THE PAST** → Evaluation of projects’ achievements in light of the FP5 and FP6 Work Programme objectives and targets set for IndCo, SuD and CPP themes

2. **THE FUTURE** → Evaluation of the potential impacts of the FP projects according to four impact groups and related indicators (the METRONOME impact model)

Four complementary evaluation methods/elements:

- Project evaluation and dissemination quality matrices, based on project reports
- Coordinator questionnaires (and complementing interviews)
- Lead user interviews
- Workshop

Application to a sample of 100 FP5 and FP6 transport projects

- For each of the themes a specific application with different mixes of evaluation methods was developed
## METRONOME project evaluation matrix

<table>
<thead>
<tr>
<th>Extent to which the project met/contributed to objectives</th>
<th>Fully/yes</th>
<th>Partially</th>
<th>Indirectly</th>
<th>Not at all/no</th>
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<tbody>
<tr>
<td>Work programme objectives</td>
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<td>Key action objectives</td>
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<td>Strategic project objectives</td>
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<td>European SD policy objectives</td>
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<tr>
<td>Customer/end-user impact indicators</td>
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<tr>
<td>Societal impact indicators</td>
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<tr>
<td>Coordination indicators</td>
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</tbody>
</table>
METRONOME impact model

Societal impacts

Customer / end user impacts

Scientific impacts

Impacts on management and coordination

Benefits, e.g.
- Citizens
- Political decisionmakers
- Public sector
- Industrial associations
- International, national large companies
- SMEs
- Research organisations
- Universities

FP Work
Programmes
or
Thematic Areas

Industrial Competitiveness
Sustainable Development
Community and Public Policies

Enabling factors
METRONOME Impact indicators

1. Scientific impact indicators (i.e. quality and validity of research projects)
   Examples:
   • number of publications, number of patents
   • fit between framework and data
   • the efficiency of the research - results against resources used
   • the effectiveness of the research - outputs against FP targets set
   • the power to address previously unsolved questions

2. Customer/ End user (e.g. EC) impact indicators
   Examples:
   • public-policy initiatives
   • long-term product or service development
   • the advantage and stability of the research results

3. Societal impact indicators
   Examples:
   • implementation of research output by policy field, industry or other societal actors
   • (active) use of implemented research output by societal groups
   • contribution of priority setting e.g.future research goals
   • contribution to strategy processes of public and private organisations
   • Norms, standards, regulation

4. Impact indicators on management and coordination (enabling factors/ "tools" for supporting impacts)
   Examples:
   • Improved networks, new networks with public/ private organisations
   • Networks with global/EU/national partners
   • Systematic dialogue with policymakers
   • Customerorientation: customer involvement in project planning
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Contribution to Industrial Competitiveness

- Focus on project evaluations against FP5/6 targets
  - In-depth evaluation of project documents - Evaluation matrix
- FP5 presents 18 IndCo related targets, FP6 54!
- Target categorisation into 7 Industrial Competitiveness Domains:
  - Technologies & processes & services; products; infrastructures; patents & standards; societal & environmental issues; legislative issues; financial issues
  - In the domains of Patents & Standards, Legislative Issues and Products, FP6 projects tended to perform better than FP5 projects. In the other domains, FP5 projects performed better
- The projects contributed significantly (fully) the FP targets in more than 50% of the METRONOME cases for all 7 Industrial Competitiveness domains in both FPs
- Projects financed mostly as Cost Sharing Contracts (FP5) and Integrated Projects (FP6)
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Contribution to Sustainable Development

- Twofold approach:
  - Project evaluations against FP5/6 objectives of different levels - Evaluation matrix
  - Evaluation of potential project impacts - Co-ordinator questionnaire

- Objectives
  - The achievement of FP SuD objectives was good, slightly better in FP5 than in FP6
  - Both FP5 and FP6 projects contributed better to higher level Work Programme objectives than lower level Key Action objectives → discrepancies between the different levels of objectives set for the FPs or too wide scope of high level objectives?

- Potential impacts
  - The most positive impacts were realised in field of scientific impacts (both FPs)
  - In other groups, variations were high

- Projects were financed by many different instruments in both FPs
  - The most successful instruments: Accompanying measures in FP5, and Networking instruments in both FPs
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Contribution to Community and Public Policies

- Threefold approach:
  - Project evaluations against FP5/6 objectives of different levels - Evaluation matrix
  - Evaluation of potential project impacts - Co-ordinator questionnaire
  - Knowledge dissemination evaluation - Lead-user interviews

- Objectives
  - The achievement of FP CPP objectives was good; almost identical in FP5 and FP6 and much in line with SuD results

- Potential impacts
  - Co-ordinators see FP5, lead-users FP6, having greater impacts
  - Successes: strengthened scientific expertise and publications (FP5); contribution to the development of decision-making tools; improved networking between researchers and public/private bodies (FP6)
  - Weaknesses: projects not raising new, unsolved questions; converting research results into policy recommendations and regulations
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Conclusions (1/4)

Methodological aspects

- The developed methodology proved to be useful in providing information from the perspectives of: (1) achieving the FP objectives and targets, (2) FP5 implementation and operational environment, and (3) research project outcomes and impacts
- Different evaluation themes require different mixes of evaluation methods
- Difficulties encountered: (1) the availability of project results → need for centralised result database, (2) contacts/availability of co-ordinators and lead users
- There is a need for continuous, constantly evolving evaluation process, with more emphasis on future looking elements → better support the transport policy and WP objective setting in the changing transport research environment – Strategic intelligence!
Rationale

- The consistency of the FP Work Programme structures
  - FP5 and FP6 WPs presented wide variety of objectives and targets at different levels → a high risk of discrepancies between the components of different levels of objectives, which may complicate the evaluation
- Co-ordinators and lead-users presented differing responses regarding the adequacy of FP funding and effectiveness of projects in terms of money and resources – the timing and perspective of evaluation needs to be considered carefully
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Conclusions (3/4)

Implementation and operational environment

- Applied financing instruments were considered adequate, networking instruments being the most successful ones ➔ signs of new research structures?
- Project management in both FPs was carried out satisfactorily, in some cases very well
- Co-operation with end users (e.g. civil servants) in the projects has worked well, but industry has not been involved greatly
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Conclusions (4/4)

Outcomes and impacts

- In general, achievement of objectives in both FPs good throughout, and in some cases even very good
- Strongest impacts of projects in both FPs were identified within the impact group of scientific impacts. Also end-user impacts and management and coordination have been adequate (FP6), but wider societal impacts quite modest.
- Immediate impacts: strengthened scientific expertise, publications (FP5), improved networking (FP6)
- Intermediate impacts: development of decision making tools, co-operation with end users, (indirect) contributions to policy and product/service developments
- Ultimate impacts: safety improvements?, increased environmental awareness? time savings?, improved competitiveness?
- Both FPs have played a significant role in the European science and technology agenda
Valid evaluations require complementary information and knowledge, produced by various methods. The nature of produced knowledge depends on its use, e.g.
- for legitimising purposes, indicator based and quantitative knowledge
- for strategic development, quantitative and participatory knowledge

Availability, form and dissemination of project results are vital
- both EC and project perspectives

The thematic consistency of FP Work Programme structures is important
- lower/higher level objectives and targets

Co-operation with technology platforms and EC officials

Investigating the follow-up research project paths in selected fields for identifying the intermediate and ultimate impacts

The timing and a comprehensiveness (e.g. transport research under other programmes and DGs) of evaluations need to be considered carefully

Examples of identified research needs
- development of competitive transport products and services; efficient and harmonised use of pricing measures; contribution to the reduction in transport emission
Thank you for listening!

http://www.vtt.fi/sites/metronome/

anu.tuominen@vtt.fi
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