

ERRAC Roadmaps EWG-WP06: Evaluation of market uptake and lessons learnt from past project results



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ERRAC-Roadmaps – WP06 open workshop
18th March 2010
Brussels



ERRAC history

- ❑ **Set up in 2001 with the ambitious goals of :**
 - embracing the Transport White Paper objectives
 - creating a single European body to contribute to
 - the revitalisation and competitiveness of the European rail sector through more innovation and more co-ordinated research activities.

- ❑ **A unique body bringing together:**

- ❑ **Railway undertakings**
- ❑ **Infrastructure companies**
- ❑ **Urban and regional transport operators**
- ❑ **Manufacturing industry**
- ❑ **Representatives of the EU Member States**
- ❑ **Customer groups**
- ❑ **Academic institutions**
- ❑ **Member States**
- ❑ **European Commission**



With the aim of achieving consensus on priorities for railway research and guiding research efforts towards a common strategy

Re-launching ERRAC, ERRAC-Roadmaps project the starting point

- ❑ **Openness and transparency of the work in the ERRAC-Roadmaps WPs**
 - ❑ Everyone welcomed if active contributor
 - ❑ Focus on market uptake but openness to valuable «blue-sky» research

- ❑ **Focus for the next 3 years on annual detailed and qualified sector Roadmaps that will provide**
 - ❑ Input for the future work programme at EU and National level
 - ❑ Input for interoperability at European level
 - ❑ Input for legislative decision in line with the R&D objectives and needs



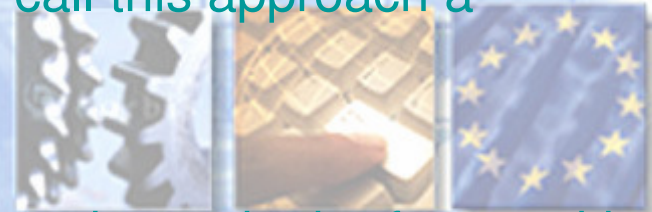
ERRAC and ERRAC-Roadmaps objectives and activities for the future

- ❑ Producing and approving detailed roadmaps for the correct implementation of the SRRR and addressing technological and political (EU level) challenges
 - ❑ *Next steps in ERRAC-Roadmaps: WP Leaders are already organising specific extended workshops to define the first yearly roadmaps!*
- ❑ **Market uptake evaluation of past rail R&D projects mainly funded in the FP5 and FP6.**
- ❑ Link with other European Technological Platforms
- ❑ Work with National Technological Platforms
- ❑ Maintaining ERRAC as the rail advisory body through the lifetime of the EC framework programs
- ❑ Monitoring programs and cooperating with relevant international organizations outside Europe
- ❑ Encouraging and nurturing investment in rail research at a private and public level.



Summarising the philosophy of Project evaluations

- ❑ Started in 2006 with the aim of understanding how to improve the work done and money invested in FP projects by the industries and the European contributor
- ❑ Not judging any project per se, every project that was financed and delivered results is good. But the aim is to look at how results have been implemented: we call this approach a market uptake
- ❑ Learning from the past and trying do to better in the future with Lessons Learnt and Reasons for Outcome



***ERRAC Roadmap EWG WP06 evaluation activity:
intense involvement for a quality contribution
to orientate future EU projects***

Summarising the philosophy of Project evaluations : Market uptake

What this means and how it is evaluated

- ❑ **Strong market uptake**
 - ❑ Clear evidence of use of products, processes, dissemination of knowledge, tools¹ etc. in several countries/products
 - ❑ Need for additional projects but only in complementary areas.
- ❑ **Medium market uptake**
 - ❑ Some evidence of use of products, processes, limited dissemination of knowledge, tools etc. in a few countries/products
 - ❑ Follow up project may be necessary
 - ❑ In the coming years it is possible that the result is going to be used more frequently if not forgotten
- ❑ **Weak market uptake**
 - ❑ No known use of products, processes, dissemination of knowledge, tools etc. have been identified anywhere
 - ❑ No follow up project is needed unless the reason for the market uptake failure is clearly understood and removed.
- ❑ Note1: Products, processes, dissemination of knowledge tools are stand alone elements and have equal weighting in the evaluation process.



Summarising the philosophy of Project evaluations : Market uptake

Why is market uptake of fundamental importance for ERRAC? -1

- ❑ The top level rationale for railway research is rightly always expressed in terms of achieving results, like climate change, decongestion of transport corridors etc.
- ❑ This focus on results, can be seen in all declarations from the Commission, national political groups and in the EC transport White Paper.
- ❑ It is a given that, of course, unless research results are actually implemented, they will have in no way contributed to all these high level ambitions.



Summarising the philosophy of Project evaluations : Market uptake

Why is market uptake of fundamental importance for ERRAC? -2

- ❑ Research without market uptake in our field of applied engineering is a waste of public money as well as of that of Companies participating in the research
- ❑ Research without market uptake in our field of applied engineering is also, in a longer perspective, a waste of intellectual capacity and of talented people and resources.
- ❑ People want to be part of successful activities, not the opposite, and participating in EU funding research should be seen as a booster of career opportunities for individual researchers.



Status update of EWG-WP06 activity-1

- ❑ The ERRAC Roadmap EWG WP06 evaluation activity has taken the lead from the project evaluations work, done by the EWG
- ❑ The Projects to be evaluated were taken from the lists available at the time from the EU sites (IST, CORDIS, etc) mostly of FP5 and FP6 projects, which were nevertheless not always complete lists of all rail research projects done (FP4 projects were also inserted)
- ❑ The lists of FP Projects found were entered in an internal Excell data base of the workgroup, for practical use in the evaluation activity, but the list is not exhaustive, since not all projects were listed in EU databases



Status update of EWG-WP06 activity-2

- ❑ Criteria for selection and evaluation of projects to be evaluated, were established from the beginning, also starting from direct experience of members of the working group:
 - ❑ **Projects that are mature and have been completed at least 2 years before evaluation**
eg. HVB/RAIL, ended 1998; HEROE, 1999; INFRASTAR, 2003 ; SUPERTRACK, 2005
 - ❑ **Projects that have or have had proposals for follow ups**
eg. REORIENT, ended 2007, and followed up by NEWOPERA, ended 2008
 - ❑ **Projects that are linked together by a theme**
eg. the Tunnel Projects set up to study solutions for fires in tunnels: DARTS, SIRTAKI, VIRTUALFIRES, all ended 2004; FIT,2005 ; UPTUN, SAFE-T, 2006

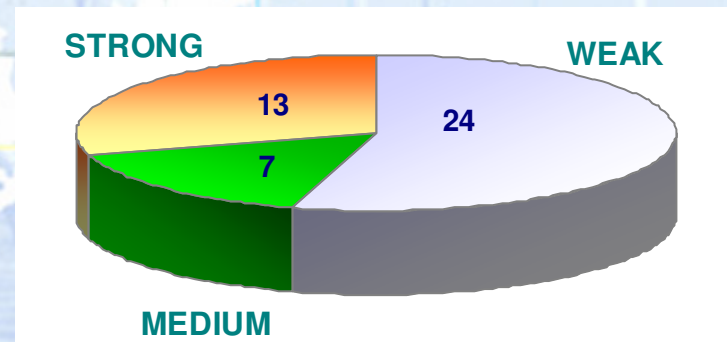
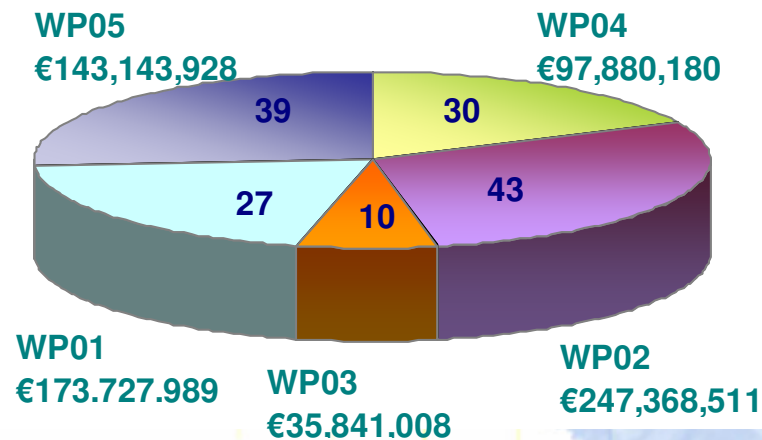


Status update of EWG-WP06 activity-3

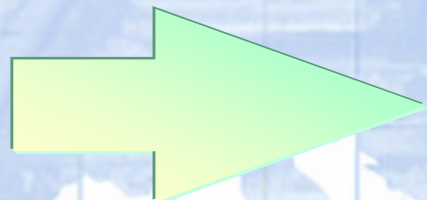
- ❑ Up to date, over a total of 149 listed projects, 44 have been evaluated:
 - 13 of them were found to have a strong market uptake,
 - 7 medium, and
 - 24 a rather weak market uptake.



Uptake of Evaluated Projects 1



Total 149 Projects



44 Projects

Total projects in WPs
@ Feb 2010

Level of Uptake of the results of
Projects evaluated

Global total cost of projects in
WPs € 697.961.616

Uptake of Evaluated Projects 2

- ❑ **The 13 projects with a strong market uptake are in the domains of**
 - Greening of Surface Transport (Design for Environment) (4 projects)
 - Train- Bus Communication Control Systems (4 Projects),
 - Improving Safety and Security (4 Projects)

- ❑ **The 24 projects with weak market uptake are mostly in the domain of**
 - Railway freight operation relating to modal shift (10 projects)



The Roadmap EWG WP06 evaluations

The scope and benefit of project evaluations 1

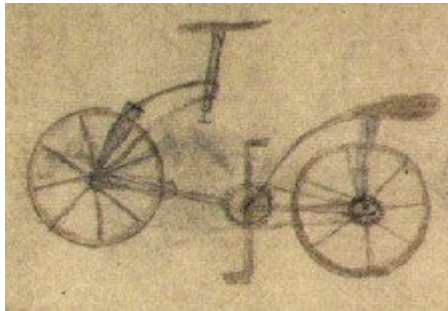
- ❑ The evaluation activity of EWG WP06 is based on a rationale that looks at the market uptake and how a project is actually used, independently from the value of its content.



- ❑ A project may have a low market uptake initially and then reveal a strong market uptake in the long run

Weak or Strong Market Uptake?

On the Question of Leonardo's "Bicycle"



1490: Leonardo da Vinci



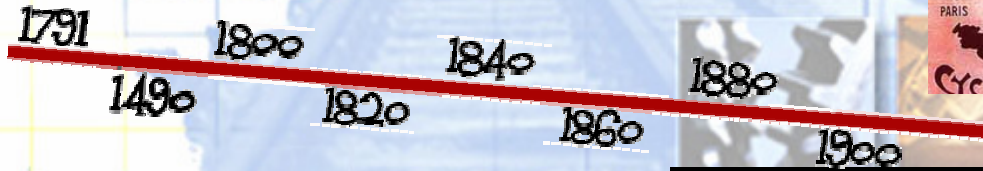
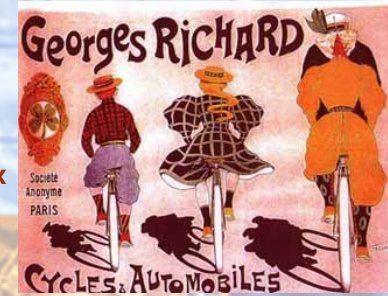
1791: Comte Mede de Sivrac



1818: Baron Karl Dreis von Sauerbronn



1861: Ernest Michaux



The scope and benefit of project evaluations 2

- ❑ The assessment of post-project evaluations helps guarantee that there be
 - ❑ focused attention on project funding
 - ❑ enhanced awareness and reflection on how the already scarce resources available can be channelled
 - ❑ achievement of the goals set for future scenarios.



Examples of criteria observed for Strong Market Uptake evaluated projects 1

- ❑ The project answered to a clear need for a harmonised solution, meaning a clear and positive business case
- ❑ The project has no competition tensions as its R&D was pre-competitive without strategic issues between partners' interests
- ❑ The project clearly defined the ownership of implementation of project results, which were in the hands of one relevant stakeholder. This was an undivided business case.



Examples of criteria observed for Strong Market Uptake evaluated projects 2

- ❑ The project was able to convert results into international standards
- ❑ The project presented major users involved in the requirements definition and assessment of results, a broad consensus was established
- ❑ The project had the continuity and ability to build up results on its predecessor, expanding the scope and gradually solving problems in a systemic approach.

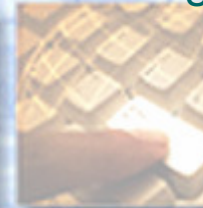


Examples of criteria observed for Strong Market Uptake evaluated projects 3

A project may not seem to bring to success
and yet can generate a strong uptake

On the Quest from Gold to Meissen Porcelain

- ❑ In 1700 the 18 year-old Johann Friedrich Böttger presented himself to the Elector of Saxony, Augustus the Strong, to ask him to finance a project to transform poor metals into Gold.
- ❑ Tired of being tricked by the Alchemists, Augustus the Strong captured Böttger, and forced him to prove his worth in a prison of his castle in Dresden.
- ❑ Böttger did not manage to find gold and fled many times but was recaptured. Luckily he met a master glass maker Ehrenfried Walther von Tschirnhaus from Meissen, who convinced him to search for the secret formula of hard-paste porcelain instead.
- ❑ Taken by desperation Böttger worked hard and finally reached success in 1708. He found the formula of the precious porcelain, that had up to then been imported from China, and this signed the beginning of the production of the Meissen Porcelain.



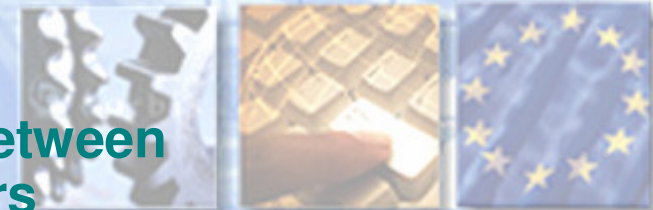
Overall lessons learnt observed from projects evaluated so far

- ❑ The ERRAC ROADMAPS EWG WP06 evaluations done up to now, have established a level of knowledge by which we can predict, to an accurate extent, a success in market uptake already at the research idea conceptual phase.
- ❑ By applying this knowledge already in this phase we can:
 - ❑ design future projects so that chances of successful market uptake are dramatically increased or
 - ❑ determine that an idea will have a very narrow chance of achieving any market uptake and therefore should not be proposed.



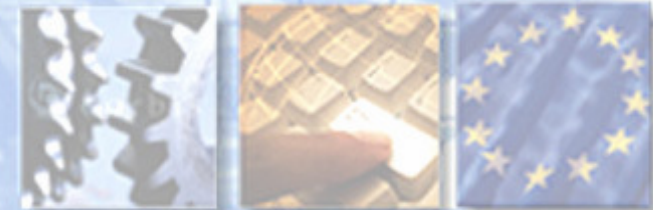
General lessons learnt observed from Strong market uptake evaluated projects 1

- ❑ Projects aimed at solving issues of general acknowledged interest (eg. technical, safety, of harmonisation, business cases).
- ❑ Projects had strong interaction between partners and relevant stakeholders
- ❑ Projects clearly defined scope and objectives at the beginning



General lessons learnt observed from Strong market uptake evaluated projects 2

- ❑ **Project results applied and implemented for products, or for regulatory application and made available for future revision**
- ❑ **Project capability of building on results of previous projects (systemic view)**
- ❑ **Project pilot cases or business cases developed to provide viable solutions and not just as an exercise.**



Recommendations - 1

- ❑ **Make it clear that projects should search for viable solutions in terms of applicability and cost implications, and develop real business cases**
- ❑ **Think of future market uptake and what happens after project ends: the project as an enabler and not an end to itself**
- ❑ **Clearly define scope, inputs and deliverables of project at inception. Specify meta-goals of projects and develop implementation strategy/ plan (a mandatory critical factor), identifying targeted users for dissemination of results.**



Recommendations - 2

- ❑ Clarify ownership of project results and deliverables at inception ⁽¹⁾
- ❑ Select committed partners really interested in finding and applying viable solutions (eg. for new products, involve companies that actually make them to avoid barriers to implementation).

Note (1) : Since the beginning of FP7, it has become mandatory for all stakeholders signing a Consortium Agreement for a Research Project, to clarify and agree upon the intellectual property rights (IPR) of the results before the beginning of the project. This can be seen as an effect of the lessons learnt from the evaluation of past projects.

Recommendations 3

- ❑ **Anticipate and identify possible problems/ barriers to implementation to avoid split of interest and weak market uptake, taking account of implications for strategic interests of key players to avoid strategic, commercial, technological and operational constraints (eg. not to devise technical solutions that incur extra costs to another party, without involving them).**
- ❑ **Form a Steering Group of experts/stakeholders familiar with context at play, to be in charge of advisory aspect and exploitation of results once the project has ended.**



Recommendations 4

- ❑ **Plan for knowledge retention and dissemination at inception**
- ❑ **Establish clear communication channels and frequency of exchange**
- ❑ **Conduct a regular review on post-project progress (possibly electing a project responsible/promoter).**





The European Rail Research Advisory Council

Thank you for your attention!

Questions?

