Round Table JRC-Universities:

« How to increase the contribution of Universities to Science and Innovation »

Brussels, April 11, 2013
• BASIC GOALS OF ALL ACADEMIC INSTITUTIONS
  Progress of knowledge
  Teaching and training

• BASIC GOAL OF ANY INDUSTRIAL COMPANY
  Survival (staying ahead ?) in the competitiveness race
  Creating value for its shareholders
  …
  Contributing to the social and economic progress of the society
• INDUSTRIAL COMPETITIVENESS : INNOVATION IS THE KEY
  Fast evolution of technologies
  Capacity to anticipate product and process evolution
  Capacity to transfer and integrate
  Efficient R&D is one of the answers...

• INDUSTRIAL RESEARCH : FUNDAMENTAL SCIENTIFIC QUESTIONS
  Capacity to comprehend the scientific progress
  Limitation of internal R&D resources
  Externalization of research
... A NECESSITY OF A PROFICIENT AND CONSTRUCTIVE DIALOG ...

... BUT THE COMMUNICATION IS OFTEN DIFFICULT BY THE PROFOUND DIFFERENCES IN THE « SCIENTIFIC » AND « INDUSTRIAL » CULTURES ...

Jacques Lukasik - Presentation to the Round Table JRC-Universities - Brussels, April 11, 2013
• THERE IS NO TECHNOLOGY WITHOUT SCIENCE...

• SCIENCE STIMULATES A TECHNOLOGICAL CREATION WHICH, IN RETURN, STIMULATES THE SCIENCE...

• ACCELERATION OF THE TECHNOLOGY CERCLE
• IMPORTANCE OF BASIC TECHNOLOGICAL RESEARCH

To transfer fundamental research results: concepts, methods...
To create generic technologies and processes...
To develop innovative products which create value...

• DIFFICULTY TO ENSURE AN EFFICIENT INTERACTION BETWEEN THE THREE LAYERS WHICH CONSTITUTE THE TECHNOLOGY CERCLE

Science
Basic technological research
EVA Innovative products and processes
BASIC SCIENTIFIC CULTURE

vs.

INDUSTRIAL, ENGINEERING TYPE CULTURE
RESPECTIVE ROLES...

• Industry does not expect to have its direct product/process problems solved by the academic research

• Industry needs a high quality University fundamental research, “UNDERSTANDING” of phenomena oriented...

• Industry does not need a parametric type studies, in which the results apply only to a unique combination of systems and parameters and which difficult or impossible to generalize...
HOW TO IMPROVE COMMUNICATION AND COLLABORATION EFFICIENCY?

- Increase the number of “translators” in the two worlds
- Increase the mobility University - Industry, both ways
- Make the industry needs better perceived
- Improve the “marketing” of research achievements
- Adopt a multidisciplinary approach to industrial research problems
- Favor comprehensive studies rather than parametric observations
Nanocem EUROPEAN NETWORK

• A unique collaboration between 10 industrial and 22 academic partners in 13 European countries, launched in 2004, financed by the industry

• Research: an intensive multidisciplinary research program, related to basic comprehension of properties and phenomena of cementitious materials

• Education: 120 academic researchers in the team who between them manage some 60 PhD and post-doctoral fundamental research projects, support from Marie Curie Fellowships

• A major coordination effort with an excellent reporting
A unique collaboration between three industrial French companies

An intensive internal R&D program: about 40 people involved

More than 10 university laboratories involved in a 3-year multidisciplinary research program, related to basic properties and phenomena concerning DUCTAL (several PhD thesis + contracts)

Project managers with strong scientific and industrial backgrounds