Towards controlling the acceptance factors for a collaborative platform in engineering design

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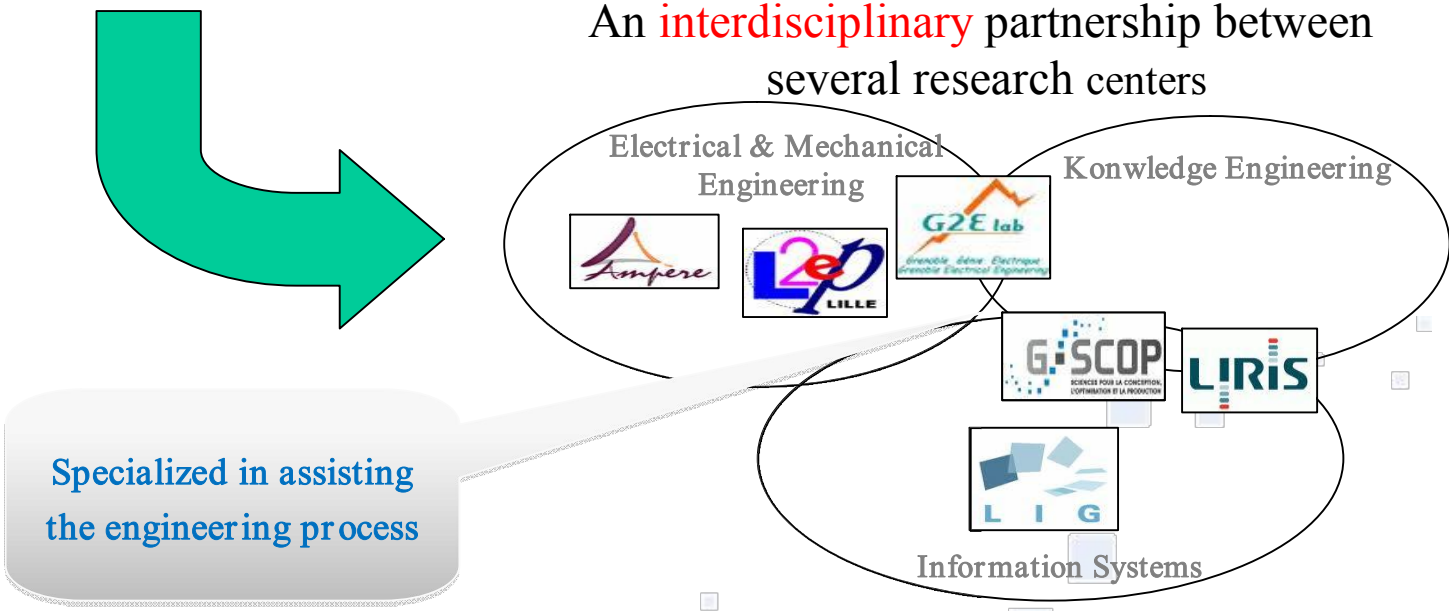
Context

DIMOCODE a project supported by CNRS:

Development of a web-based collaborative platform intended to technical knowledge (physical & enegetic models) sharing between engineers and researchers



Agenda

- Introduction
- Research problematic
- Research approach
- Literature review
- What is DIMOCODE?
- Primary factors selection & control
- Summary & Conclusion
- Limitation & Outlook

Introduction: Interest of collaborative platforms for KM

Engineering Process

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Knowledge exchange

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Construction and sharing of knowledge

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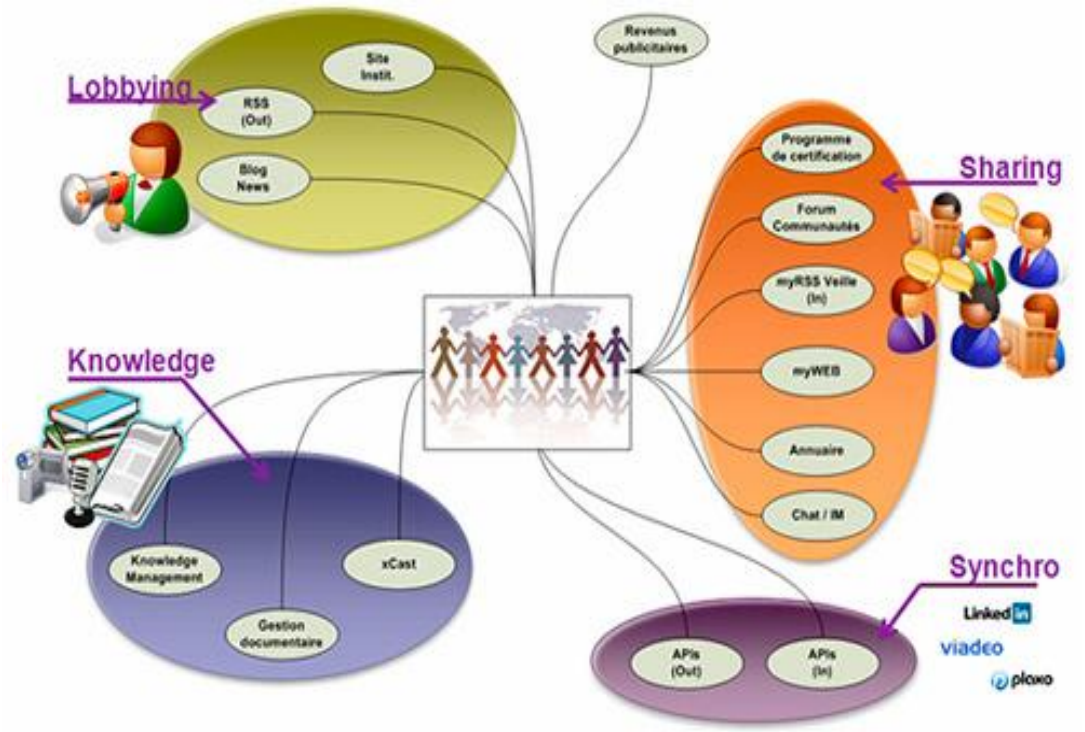
Collaborative platforms one of the best solutions



Collaborative Platform :
Means of Interaction + Information repositories

Introduction: limited success of the KMs

- Serious controversy around the success of Web-Based KM initiatives.

Organisational & Technical issues , 2 main challenges KMs are facing with [Atwood;2002].

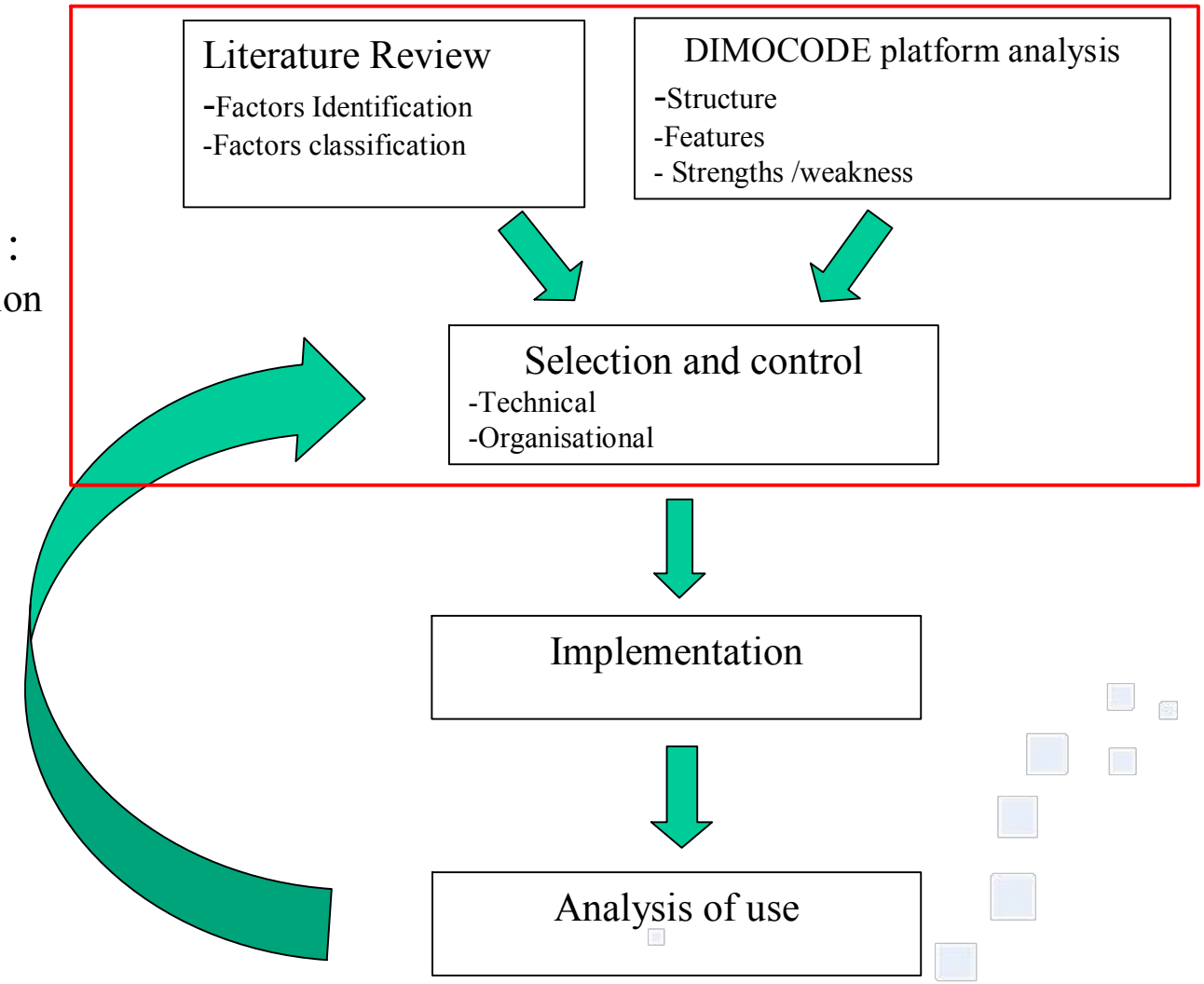
Research problematic

- Human intention to use and individual acceptance: two key issues in the technology adoption challenge [Turner&Money;2005],[Kankanhalli et al.;2005]
- Making a mass of users: one of the major concerns in the institutional setting.

- How to incite scientists and engineers to interact more and more through a collaborative platform?
  - What are the main factors which may affect the adoption of a technology like DIMOCODE?
  - How to control these factors through organisational and technical means ?

Research approach

Specification part :
Object of this presentation



Literature Review: Identification matter

- Factors identification: a documentary work based on the analysis of about forty empirical studies from the literature :

- Examined papers mainly involving the following disciplines
  - Management
    - Information Science
      - Eng. Design

- Research approaches applied in acceptance factors studies
  - Methodology of survey (ref)
    - Action/Research methodology (ref)

Literature Review: Identification

- Emersion of a 20 factors candidate list.

Factors	Short description	Dimension	References
Cooperative culture	An organisational culture conductive to knowledge sharing causes the employees to recognize the benefits of knowledge sharing behavior.	*Organisational context*	[Leidner et al.;2006], [Bernard;2006] [Goodman& Darr; 1998]
Loss of power	Reluctance to disseminate his knowledge using KMS fear of losing the resulting superiority	*Users*	[Bernard;2006]
Perceived usefulness	Quality of contents, task-technology-fit and awareness of potential benefits	*Tool*	[Lin & Huang;2008], [Goodman & Darr; 1998]
Task Tacitness	The proportion of tacit knowledge upon explicit one, needed to perform a task using KM tool.	*Task*	[Kankanhalli et al.;2005] [Goodman↡ 1998]

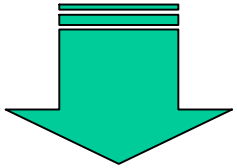
Literature Review: classification

- Two key point of view suggested for factors classification.

1) According to their positive or negative effect on sharing behavior

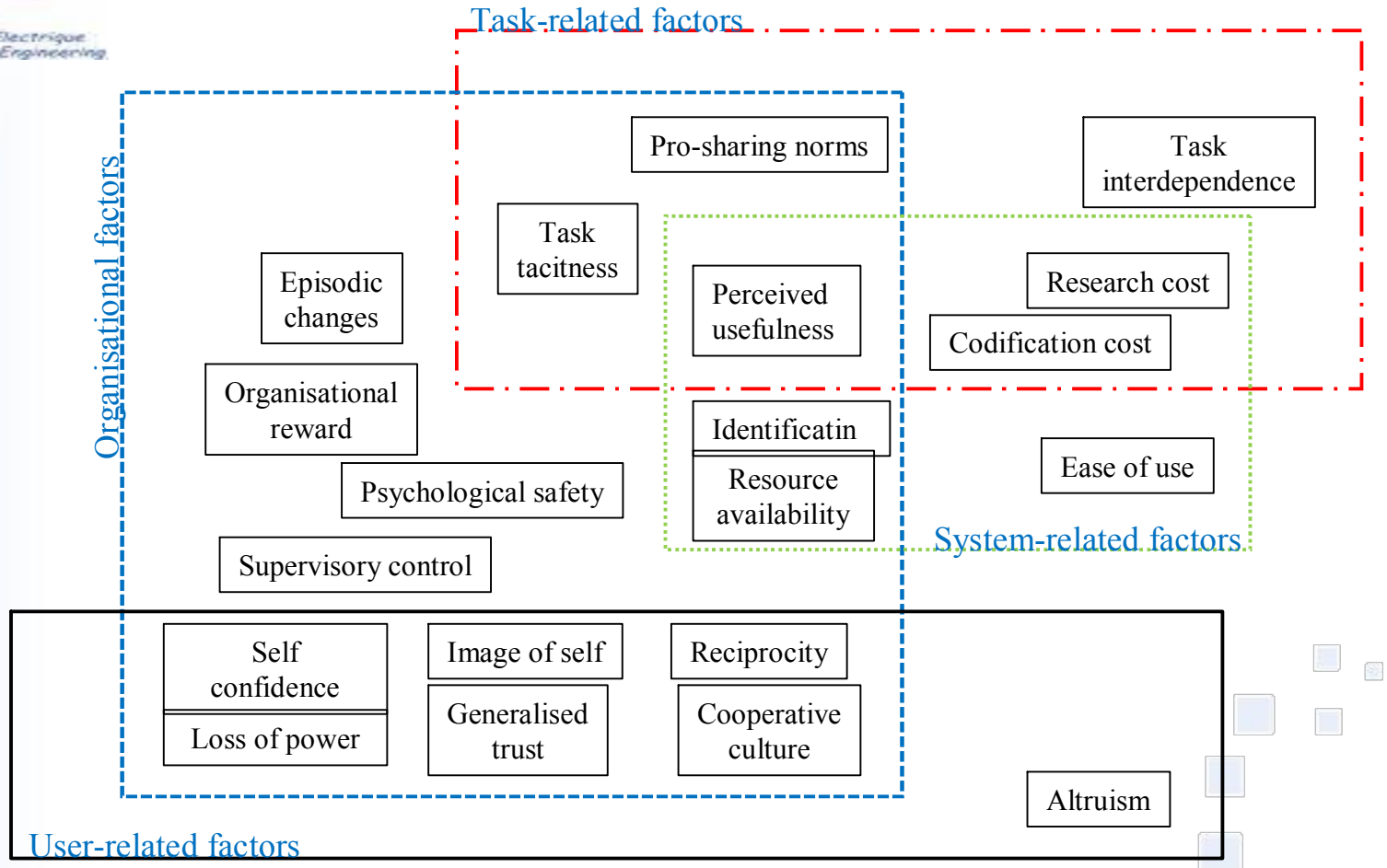
2) Factors allocation to a fourfold dimension (more common)

Some factors could correlate with more than a single dimension



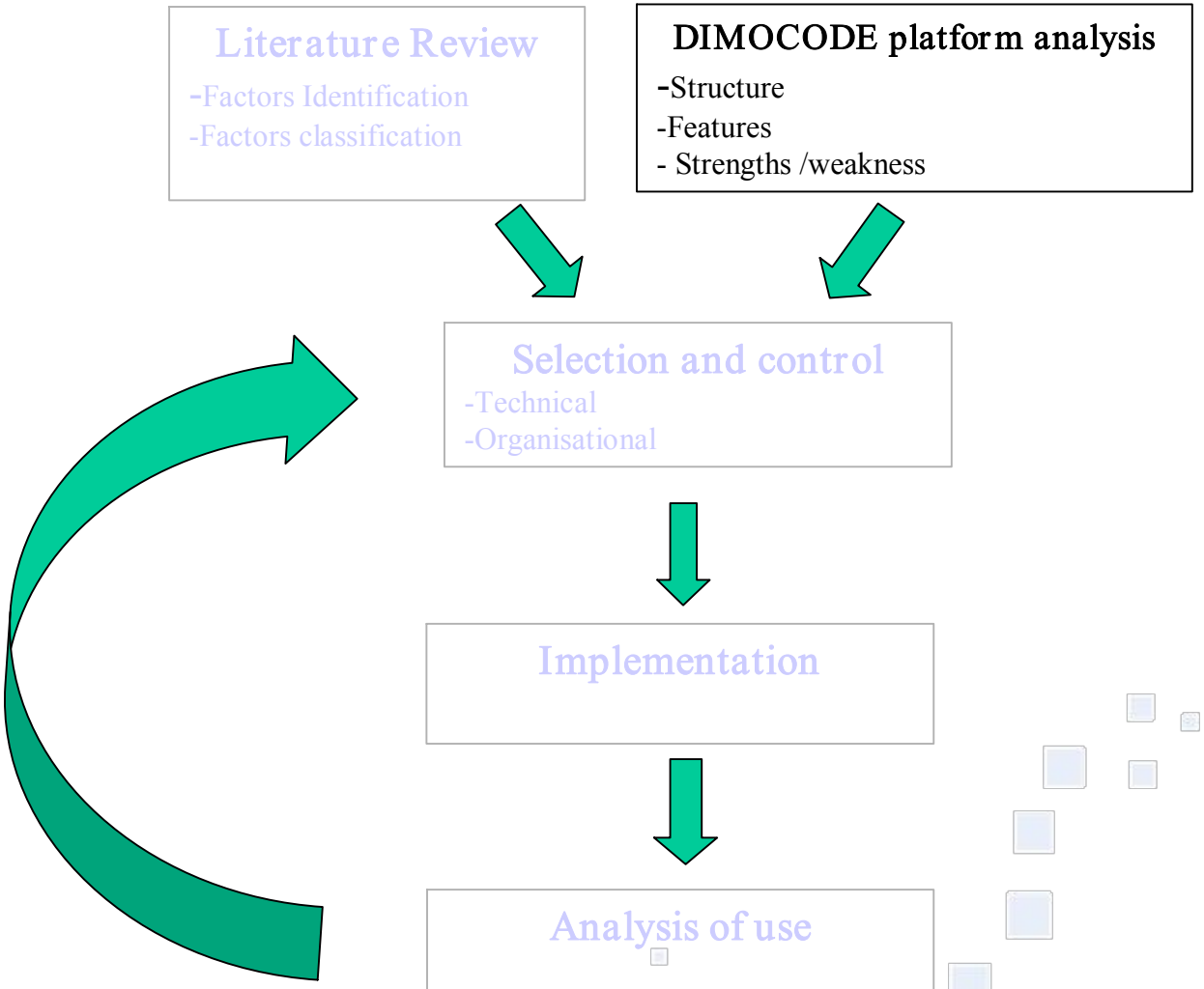
We propose a new way of classifying consistent with the multi-dimensional nature of these factors

Literature Review: classification matter

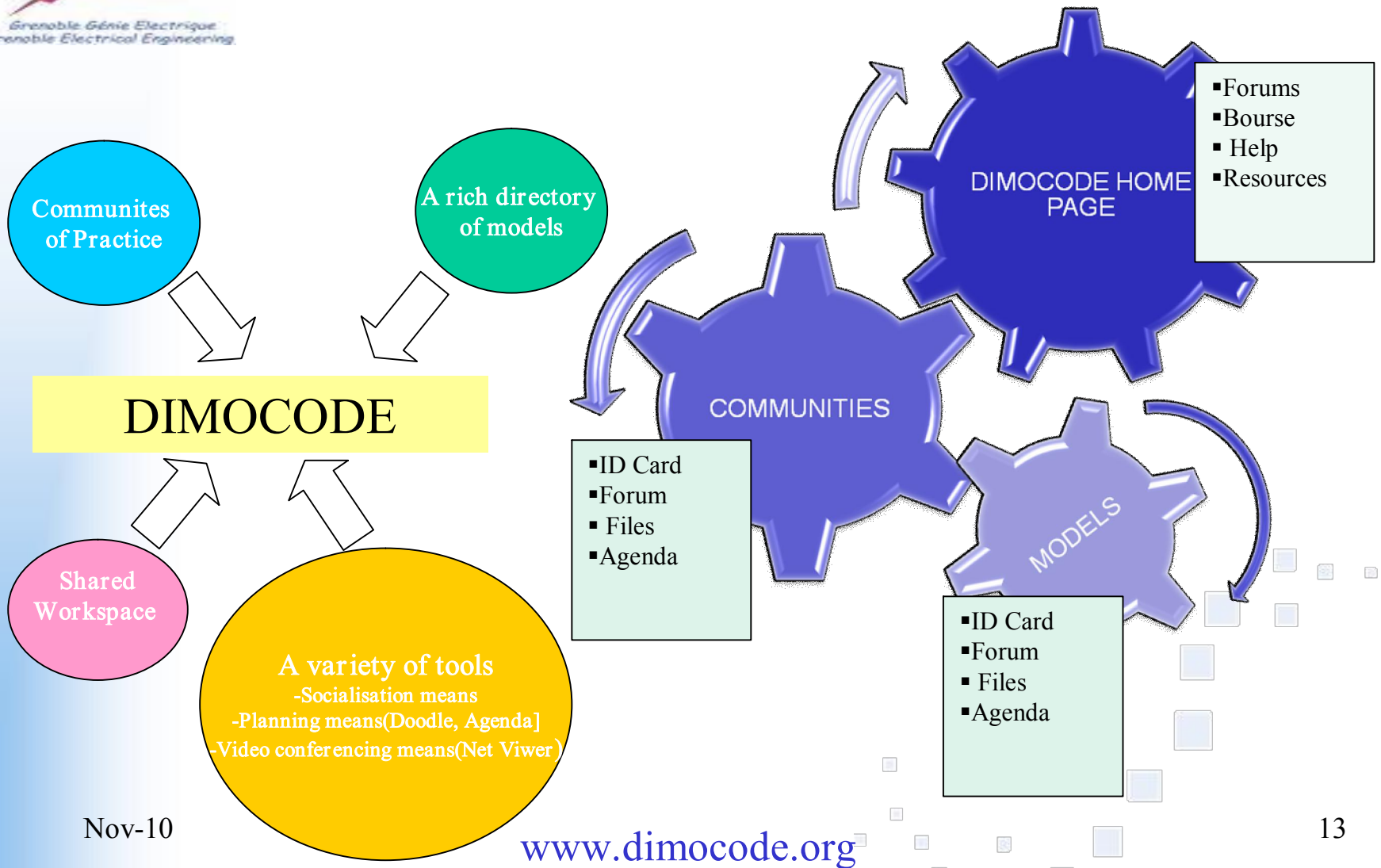


« Multi-dimensional classification of the acceptance factors »

DIMOCODE Presentation



What is DIMOCODE?



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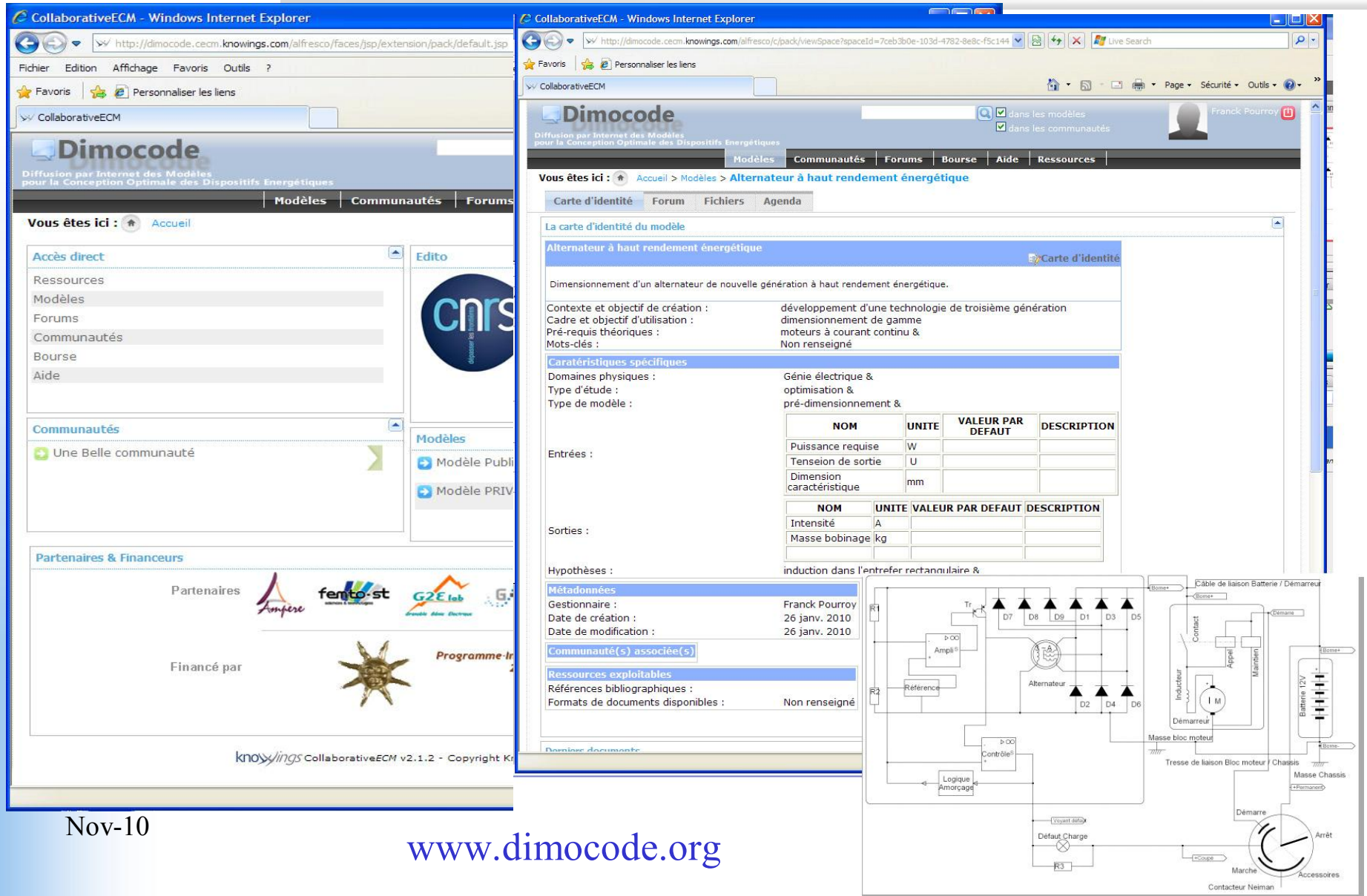
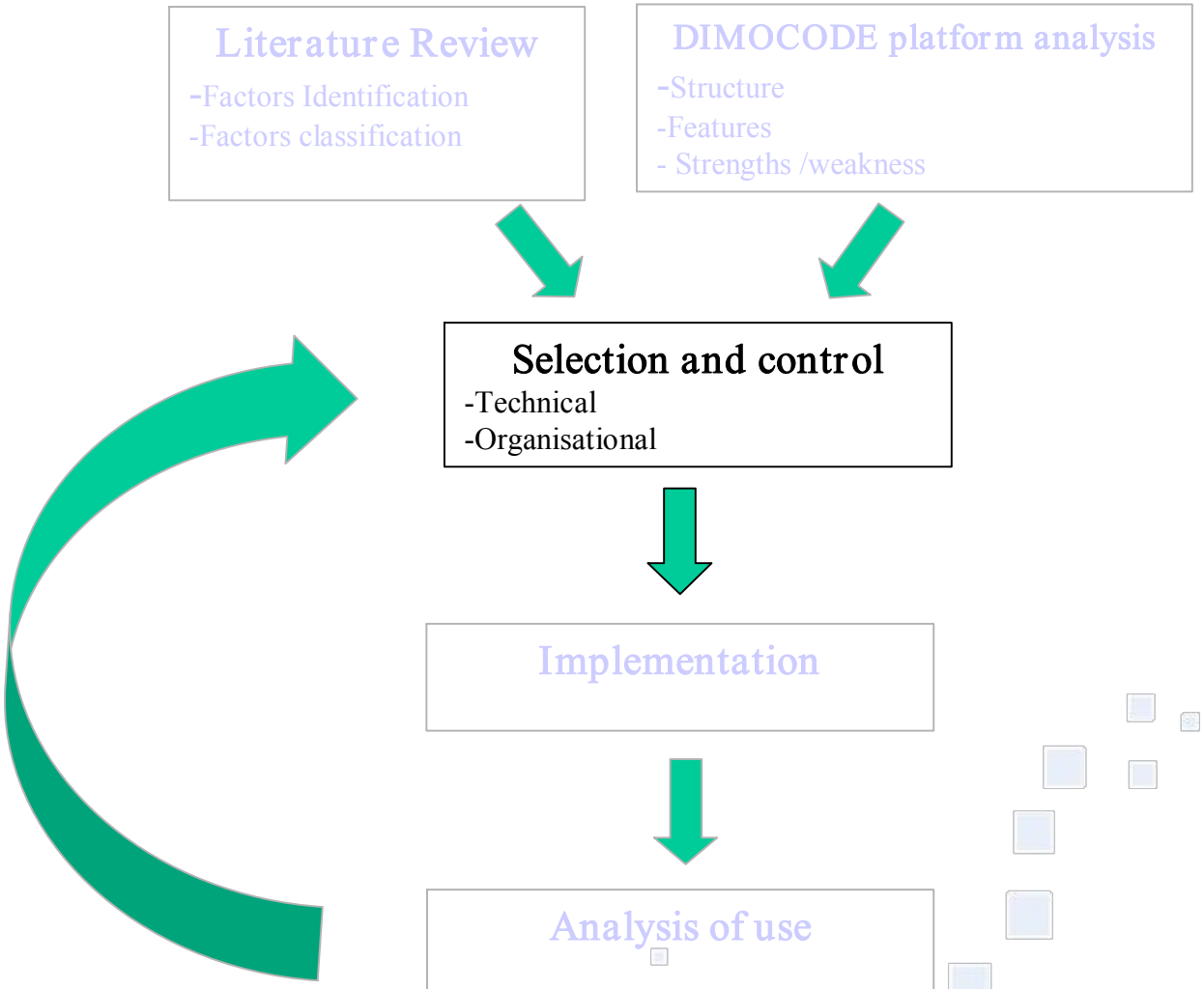
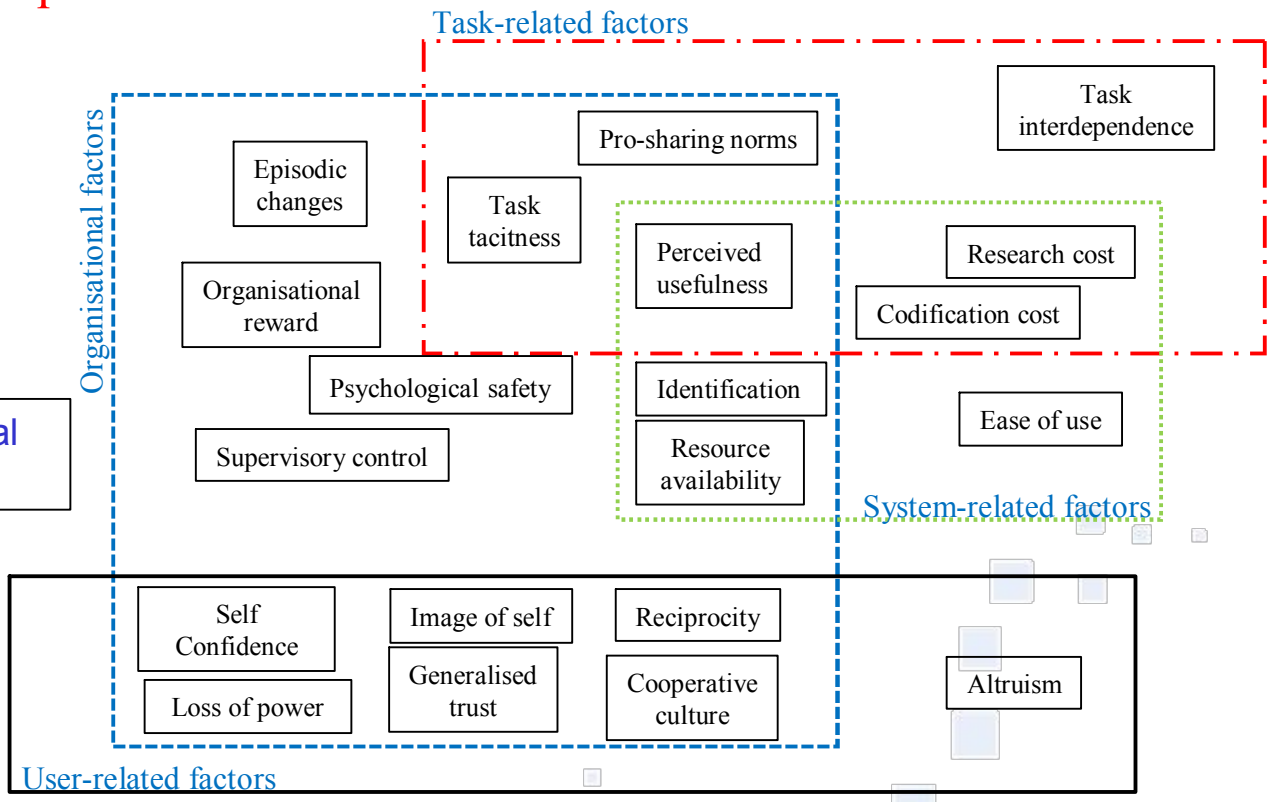


Selection & Control



Selection & Control

- Selection of the primary factors from the initial set based on Dimocode specifications and requirements



Removal of both organisational & task related factors

Selection & Control

❑ Controlling for the effect of the selected factors: a high priority in order to insure a dynamic life of the DIMOCODE platform.

❑A two-step control method

1) Associate each factors with one or more strategies
2) Find the suitable leverage for action(organisational & technical) to put into action these strategies

Factors	Strategy	Leverage for action	
		Organisational	technical
Image of self	Making the contributors visible	Identification of the most relevant contributions	Publication on the news pages of the communities
		Organising the invited online conferences from the expert	Visio-conference facilities

Summary & conclusion

- A candidate list of 20 factors was established.
- A new classification manner which is consistent with the multi-dimensional property of some factors was advised.
- A decade of primary factors was qualified for DIMOCODE context among those of the candidate list.
- The associated strategies with corresponding organisational & technical levers of action were defined to moderate the primary factors effects on user contribution to DIMOCODE

More generally, the suggested method is supposed to be useful for every kind of collaborative platforms

Limitations & Outlook

- Taking into account and studying the observed causality relationship between some of the factors as a plausible moderator of the factors influence.

- Completing the research process for DIMOCODE to validate the performed selection of factors and the Control strategies.

- Applying our proposed method to some other collaborative platforms in order to test our hypothesis.