



# Knowledge Transfer for Supporting the Organization Evolution of SMEs

A Case Study

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Innovation through Knowledge Transfer 2009  
December 2<sup>nd</sup>, 2009 – Hampton Court Palace – UK



# Agenda

- Introduction
- The Project
  - Handling heterogeneous knowledge
  - Using heterogeneous knowledge
  - Transferring heterogeneous knowledge
- Knowledge Capitalization
- Conclusions



# Introduction



# The history of the project

- Industrial partner : AEM Conseil
- Project began in January 2009
- Funding
  - Own resources
  - Students
  - Demand addressed to Conseil Régional Alsace

# The context

- SMEs need to manage their evolution
  - Global analysis of the whole of its aspects
  - Position this analysis in the perspective of their evolution
- Very often, this is done with the help of consultancy services
  - How to access to existing knowledge to allow diagnosis of the SME
  - How to think about their evolution

# The context

- Several important aspects regarding Knowledge Transfer
  - The volume of the existing knowledge is huge
  - How to structure and organise this knowledge into a hierarchy
- Expected results
  - Easily put typical solutions in practice
  - Propose original solutions leading to innovation



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# ◦ The Project



# MAEOS

- Modelling of the support to the organizational and strategic development of SMEs.
- Main goals:
  - To improve the efficiency and performance of business advice to SMEs.
  - To establish a set of methods and software tools for analysis and diagnosis of SMEs.

# MAEOS

- Three important aspects regarding the software tools to develop
  - They have to be able to evolve according to the state of the art about SMEs
  - They must be able to reflect the richness and contradictions that are inherent to the models coming from management sciences
  - Consultants have to be able to understand and use these models

# Handling heterogeneous knowledge

- Several knowledge bases
  - Theoretical knowledge in the area of change in SMEs (organizational, strategic...) that is used as core models
  - Expert knowledge accumulated during practice is used as complementary knowledge
- We choose to keep to a maximum their plurality and richness

# Handling heterogeneous knowledge

- Main interesting and difficult issue

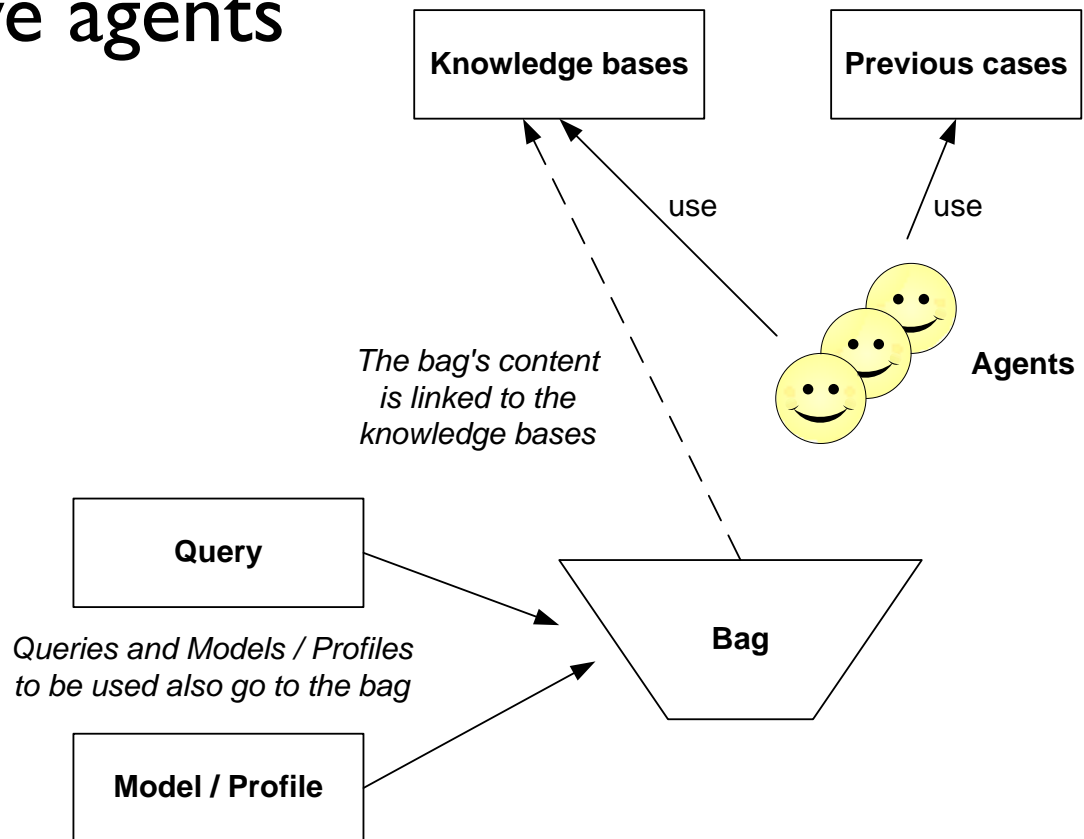
Combining a large variety  
of sources and origins of knowledge  
around SMEs topics

# Using heterogeneous knowledge

- Operation of the software : a panel of experts
  - Each expert has an area of knowledge and a set of skills
  - He examines aspects of the business related to his area of expertise
  - His conclusions are shared with the other experts
- Finally, an analysis and diagnosis report is created

# Using heterogeneous knowledge

- Implementation : An ecosystem of reactive agents



# Transferring heterogeneous knowledge

- Use of large quantities of heterogeneous knowledge, therefore difficult to transfer to the consultant
  - Creation of a new knowledge base to present the results of the analysis in a concise way
  - It includes existing knowledge and the deductions coming from the multi-agents system
  - Presentation focuses on the aggregation of results provided by that MAS



# Transferring heterogeneous knowledge

- Explanation of the results include knowledge about the current case and the theoretical foundations of the deduction that have been made

The consultant will learn new skills from each case study





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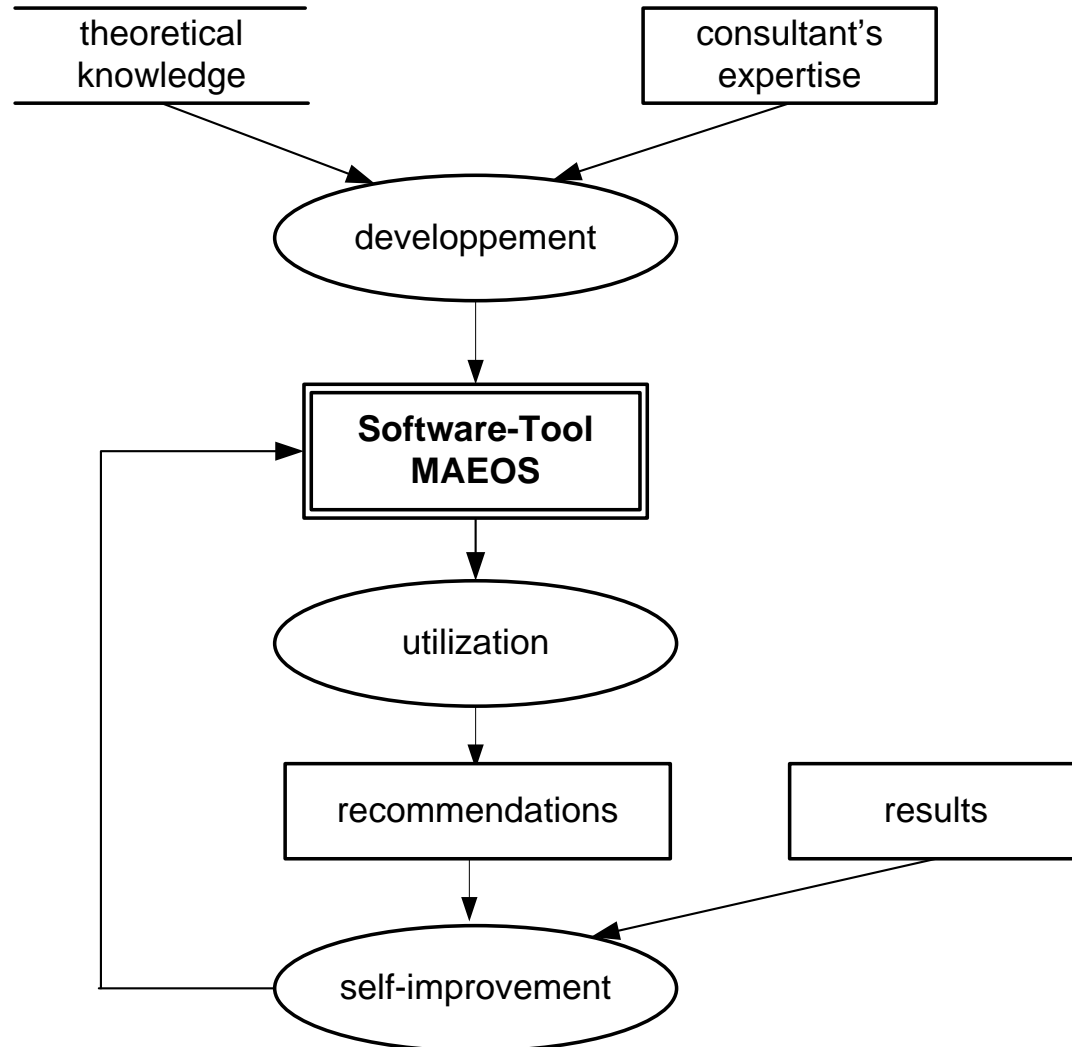
# ◦ Knowledge Capitalization

# Why capitalize ?

- Along with the use of the software tool, the new deduced knowledge will come feed the existing models
  - Gather new knowledge for the consultant
  - Put this new knowledge into practice in real situations

Provide the consultant with tools and methods to facilitate his access to pertinent knowledge when he needs it, and in this way, increase his own skills

# How to capitalize ?





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# Conclusions

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- First results about a knowledge-based system to assist consultants in their missions of analysis and diagnosis of SMEs
- Set of heterogeneous knowledge bases
  - Management of knowledge structures and backgrounds
  - Transfer of knowledge to the consultant
    - The consultant expects to obtain innovative solutions with several alternatives coming from the system

# Conclusions

- Two levels of knowledge capitalization
  - The consultant will see his competence improve by the use of different knowledge sources
  - The SME being coached by the consultant will see its own performance improve.
- Two types of results
  - To access to known typical solutions
  - To help consultants develop innovative solutions by means of a more performing access to existing knowledge



◦ **Thank you for your attention**

**Questions ?**