

# Eliciting Requirements for a Adaptive Decision Support System through Structured User Interviews

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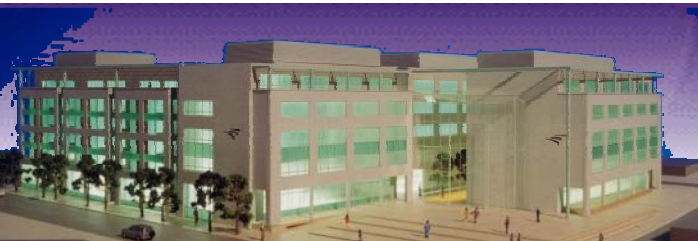
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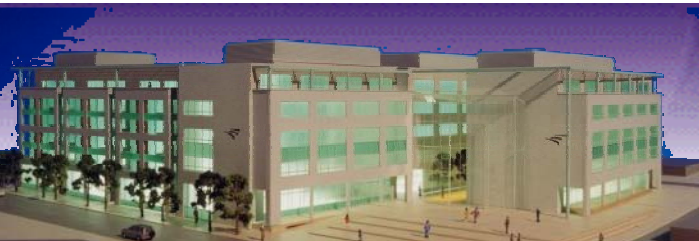
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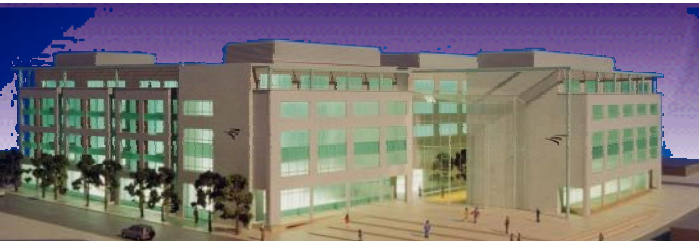
# Outline

- **Requirements for User Modeling**
- **Example**
  - Requirements for SE-DSS
  - Requirements Elicitation Process
  - Findings
- **Critique of Method**
- **Future Perspectives**



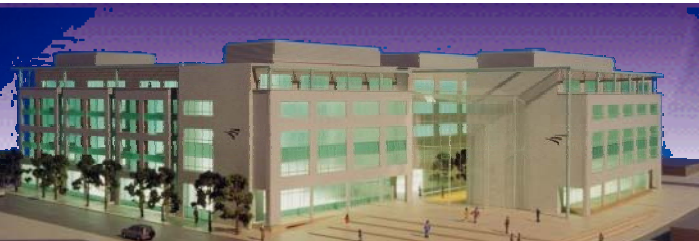
# Context

- **User-Centered Design Studies as important source for system requirements**
  - Users' needs
  - Differences between users
  - ...



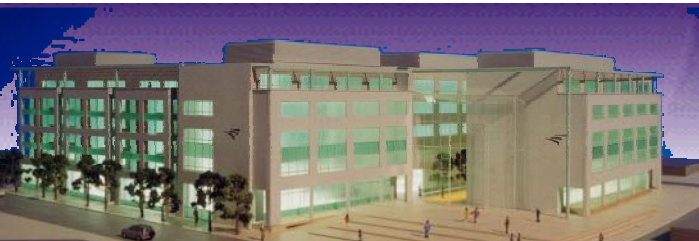
# Example Application: SE-DSS

- **Problem: Selecting SE technologies based on evidence**
- **Idea**
  - Supporting managers in selecting suitable SE technologies
  - Provide evidence on suitability through empirical evaluation
- **Benefit: Improved forecast of impact**



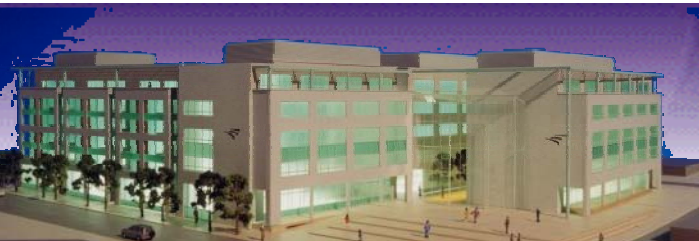
# Requirements Elicitation Process

- **Developing questions**
- **Expert interviews**
- **Analysis**



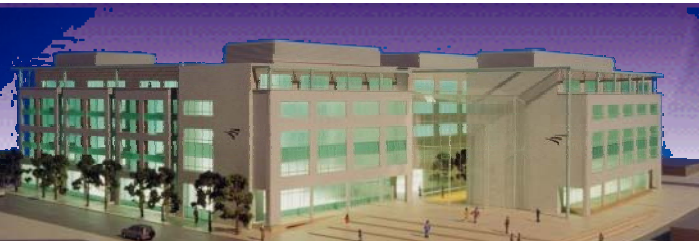
# Developing questions

- **Different preferences for interaction style**
- **Differences in information need**
  - Open-ended question
  - Ranking
- **Presentation preference**



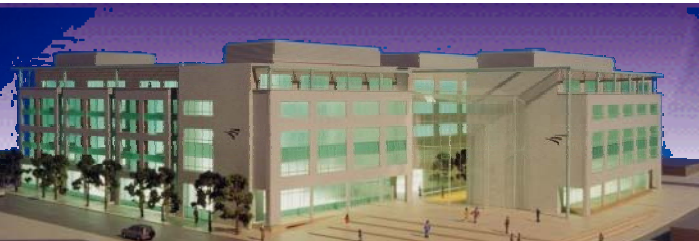
# Expert interviews

- **Sample: nine IESE experts; solid expertise**
- **Structured Interviews**
  - Predefined scenarios
  - Approx. 20 –30 min
  - Recording



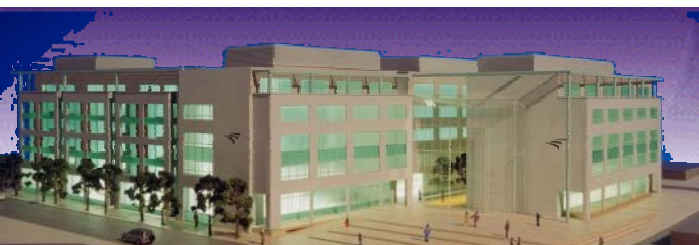
# Scenarios

- **Common introduction**
- **Role specific parts**
  - quality manager
  - project manager
  - product manager
- **2 roles each**



# Analysis

- **Inspired by grounded theory**
  - Transcription of the answer of the first subject to the first question
  - Do the same for the next subjects and compare it with the answers previously given
  - Compare the results with the original answers to ensure they still fit



# Interaction Strategies

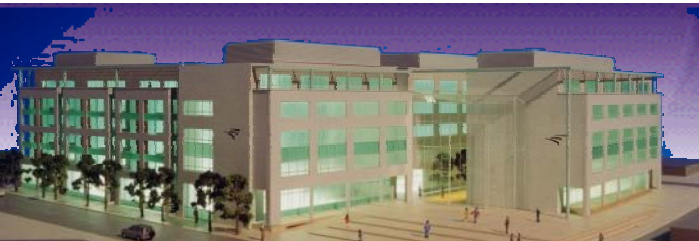
## Question 3:

Two alternative interaction strategies.

1. Similar to a search engine but more specialized.
2. Iterative refinement of the solution area by user model based interaction.

Which strategy would you prefer, and why?

- A combination of the alternatives is preferable (7)
- Transparency is important: Why did I get this result set? Access to the full set should be possible (4)
- Especially in case of a huge result set, the second strategy becomes more attractive (3)

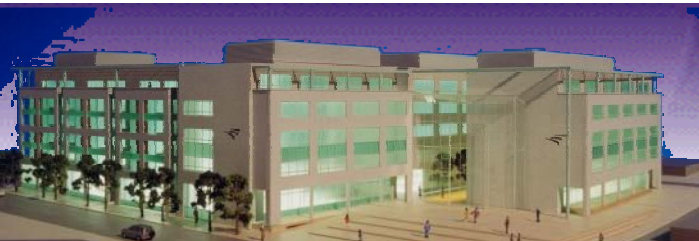


# Information Need

## Question 4:

Results from empirical studies can be described and aggregated differently. Which information should be provided by the DSS?

- **Quality Manager**
  - Broad variety of information
- **Project Manager**
  - Context
  - Costs
- **Product Manager**
  - Who applied the technique?
  - No particular information need



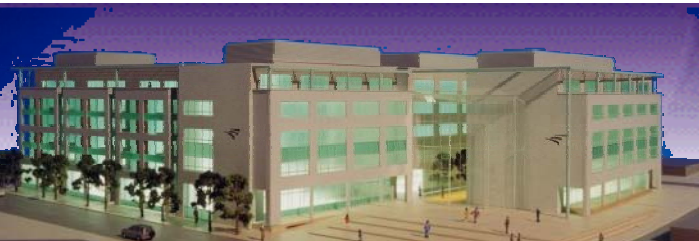


# Ranking of Information Needs

## Question 5:

Please rank the information with regard to the value the information delivers for your decision process

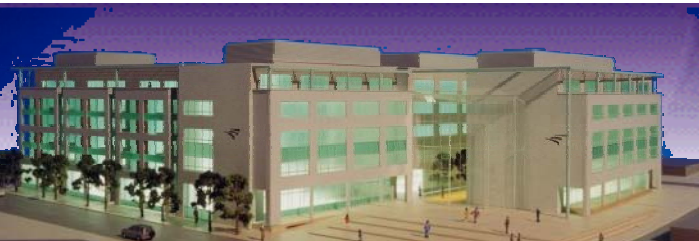
- **Quality Managers**
  - Results
  - Lessons learned
- **Project Managers**
  - Evaluated techniques
  - Others' experience
- **Product Managers**
  - Object of study
  - Quality attribute



# Presentation Preferences

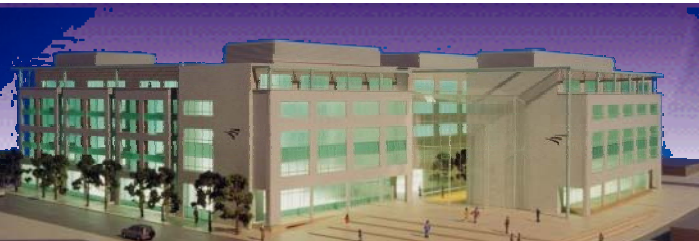
**Question 6:**  
How should the  
information be  
presented?

- **Easy-to-understand, self-explaining table (8)**
- **Easy-to-understand, self-explaining diagram (7)**
- **Aggregated information in multiple graphical presentation (6)**



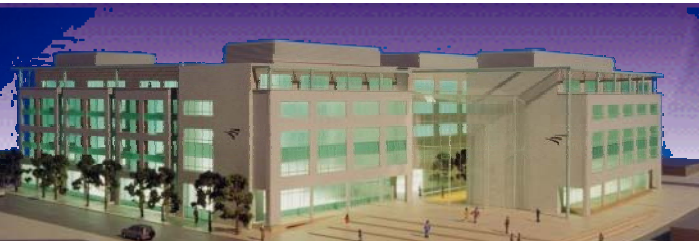
# Most important findings

- **Surprisingly, we did not find much difference between the three management roles**



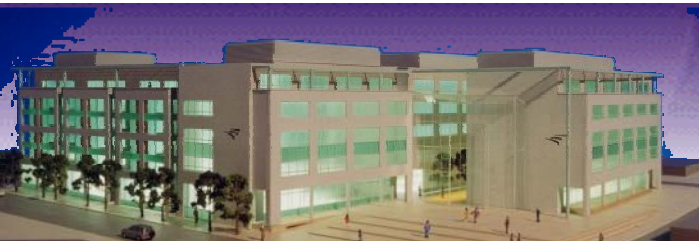
# Critique of Method

- **Pre-defined scenarios were rated relevant and practical**
- **Two possible reasons for lack of differences**
  - differences between roles are not as large as we originally expected,
  - Or interview is not sensitive enough



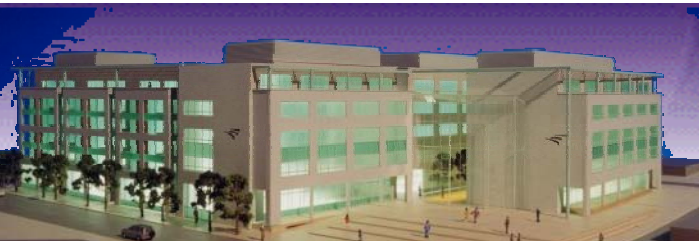
# Critique of Method

- **Sample representativeness: imagining a role vs. working in a role**
- **Trust in system**
  - Some subjects were skeptical whether they would use a SE-DSS
  - Trade-off: adaptivity vs. control and transparency



# Lessons Learned

- It is important to motivate user modeling approaches and to make the benefits transparent, that the user is able to evaluate its usefulness
- An early vertical prototype might be helpful



# Future Perspectives

- **Systematic comparison of interviews with other requirement elicitation methods**
- **Development of an Engineering Method for User Models**
  - Identification of user groups
  - Characteristics of user groups

