Evaluation Criteria for Agent-Oriented Methodologies: A Proposal

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Plan

- Why evaluation is needed?
  - To help a potential user
  - To compare existing methodologies
- What do we need with ADELFE?
- Proposal from TFG1
- Proposed criteria
- Results for some methodologies
Why Evaluating AO Methodologies?

- To help a potential user evaluate the investment needed for a methodology depending on
  - The human factors
  - The application to be developed

- To classify methodologies depending on
  - Their application domain
  - The tools and notations they provide

- Main interest: which methodology has to be chosen?
  - According to the requirements of a designer
  - According to the requirements of a problem
Investment wrt Human Aspects

- **Current knowledge of designers**
  - Does the designer need some training?
  - Are notations and tools already known?
  - Are handled concepts familiar?
  - Is a help about handled (MAS) concepts provided?

- **Costs involved**
  - Is a licence required?
  - Does it help decrease the development time?
  - Are tools provided to automate the development?
  - Are these tools standards?
  - Are some additional tools needed too?
Sturm and al.’s Evaluation Framework

- **Current knowledge of designers**
  - Does the designer need some training? ➔ Pragmatics/resources
  - Are notations and tools already known? ➔ Pragmatics/expertise
  - Are handled concepts familiar? ➔ Pragmatics/expertise
  - Is a help about handled (MAS) concepts provided?

- **Costs involved**
  - Is a licence required? ➔ Pragmatics/expertise?
  - Does it help decrease the development time?
  - Are tools provided to automate the development? ➔ Pragmatics/resources
  - Are these tools standards? ➔ Pragmatics/resources?
  - Are some additional tools needed too? ➔ Pragmatics/resources?
Investment wrt Application

- **Application domain**
  - Are handled concepts specific?
  - Are some languages, notations or tools mandatory?
  - Is there a methodology best suited?

- **Applying the methodology**
  - Is it easy to use?
    - Is a description provided?
    - Are guidelines provided?
    - Are tools easy to use?
  - Is it complete?
    - Does it cover all the designer needs?
    - Is the design process complete?
  - Is it efficient?
    - Are validation or verification tools provided?
Sturm and al.’s Evaluation Framework

- **Application domain**
  - Are handled concepts specific? ➔
  - Are some languages, notations or tools mandatory? ➔ Pragmatics/language
  - Is there a methodology best suited?

- **Applying the methodology**
  - Is it easy to use? ➔ Process
    - Is a description provided?
    - Are guidelines provided?
    - Are tools easy to use?
  - Is it complete? ➔ Process
    - Does it cover all the designer needs?
    - Is the design process complete?
  - Is it efficient?
    - Are validation or verification tools provided? ➔ Pragmatics + Process
What do we Need?

- **Application characterization**
  - For what kind of application the methodology is best suited?
  - Is it limited to a certain kind of applications?
  - Is there an underlying agent architecture?

- **Meta-model**
  - What are the underlying (MAS) concepts?
  - What do they mean?
What do we Need (2)

- **Fragment definition**
  - What are the stages and activities of the methodology?
  - Are they specialised, best suited for a certain kind of application?

- **Concepts**
  - To take into account other aspects of applications
    - Dynamics
    - Openness
    - Adaptation
  - To take into account the environment of the application

- **Identification of agents**
Some references

- Cernuzzi L. and Rossi G., On the evaluation of agent oriented modeling methods, on Agent-Oriented Methodologies, OOPSLA 02, Seattle, November 2002.
- Dam K.H., Winikoff M., Comparing Agent-Oriented Methodologies at AOIS 2003, Melbourne Australia.
- Yu E., Cysneiros L.M., Agent-oriented methodologies - Towards a challenge exemplar. AOIS’02;