An Empirical Evaluation Roadmap for iStar 2.0

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iStar'16, September 13rd, 2016, Beijing, China

Outline

- Motivation
- Qualities
- Roadmap
- Conclusions & Future Work




iStar 2.0 Objectives

- Dalpiaz *et al.* (2016) created iStar 2.0 to…
  - Facilitate learning
  - Define a shared knowledge for teaching
  - Provide a reference for practical use
  - Determine core constructs


Evaluation Goals

- Measure how well iStar 2.0 achieves the objectives
- Gather evidences for future improvements




Research Question

Does iStar 2.0 provide a solid and unified basis for teaching and supporting ongoing research on goal-oriented requirements engineering?




EVALUATION QUALITIES




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Qualities Categories

- Syntactic
  - syntax of the language
- Semantic
  - Validity/Completeness of the Language/Models
- Pragmatic
  - Understandability of the language and its Application


Syntactic Quality

- Does iStar 2.0 facilitate ensuring and maintaining syntactic correctness?




Semantic Qualities

- Expressiveness
  - Does iStar 2.0 allow one to capture a sufficient number of concepts in a socio-technical domain?
- Unambiguous models
  - Do iStar 2.0 models have only one interpretation?


Pragmatic Qualities

- Backward–compatibility
  - Is iStar 2.0 able to represent the same phenomena as *i**?
- Comprehensibility
  - Can iStar 2.0 models be understood?
- Cost-effectiveness
  - Is the effort required to use iStar 2.0 worth the benefits?


Pragmatic Qualities

- Extensibility
  - Is it easy to add new concepts to iStar 2.0?
- Learnability
  - What does the learning curve of iStar 2.0 look like?
- Modifiability
  - Does iStar 2.0 facilitate changing and updating models?


Pragmatic Qualities

- Practical Applicability
  - Can iStar 2.0 be successfully applied to real world cases?
- Scalable
  - Does iStar 2.0 support the creation and analysis of large problems?




EVALUATION ROADMAP

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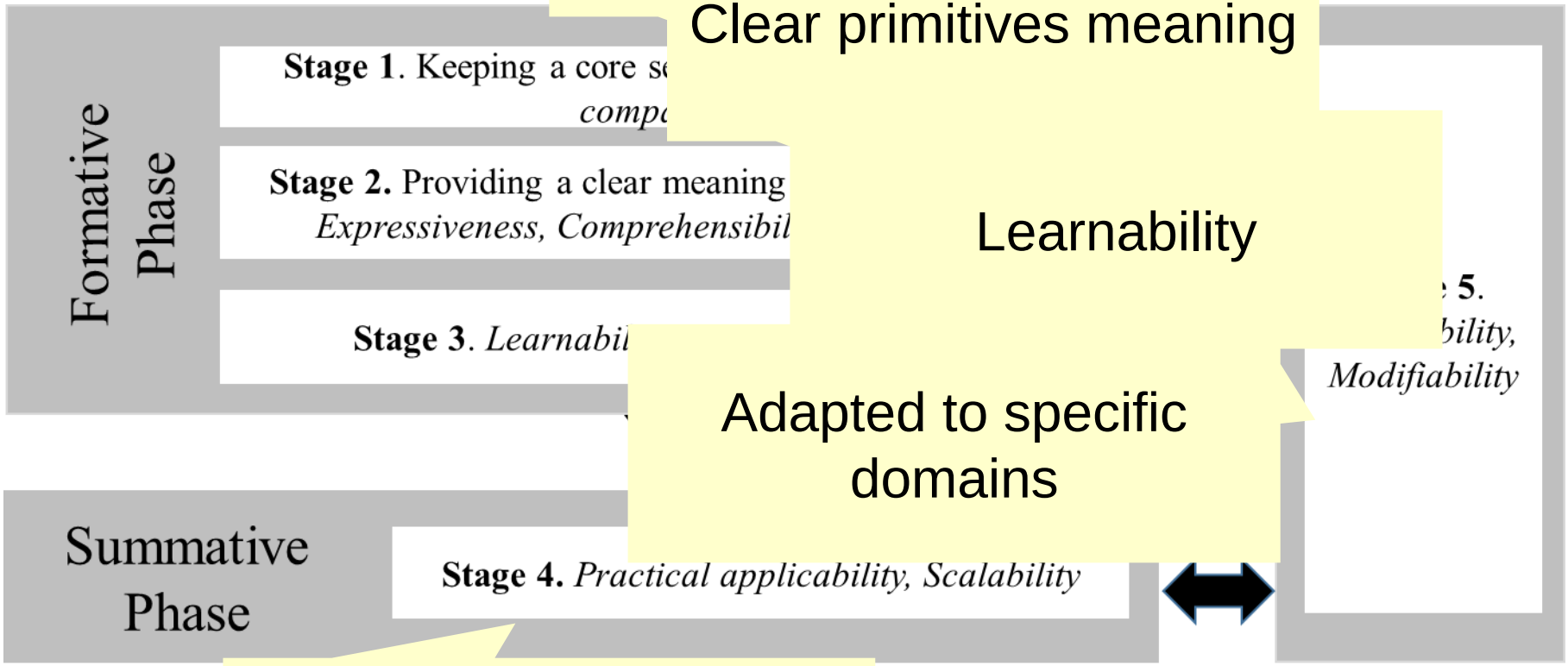
Empirical Methods

- Experiments, Surveys, Case Studies
- Dimensions
  - Subject clasification (expertise and background)
    - Expert subjects for Backwards Compatibility
    - Practitioners for Applicability
  - iStar 2.0 in isolation and/or comparing to *i**
    - e.g. Comparing to i* for Backwards Compatibility or Learnabiltiy


Roadmap



Design assumptions done during iStar 2.0

Clear primitives meaning

Learnability

Adapted to specific domains

Real world

Conclusions & Future Work

Conclusions

- 3 Quality Categories
- 11 Qualities to evaluate iStar 2.0.
- A Roadmap for the evaluation activities




Future Work

- Conduct empirical studies for one or more qualities
- Follow the Roadmap

- .. and encourage other members of the community to make some


Thank you!

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