in Practice: Identifying Frequent Problems in its Application
The Authors

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Agenda

• Background
• Research questions
• The Study
• The analysis
• Results
• Guidelines to facilitate the i*language adoption
• Threats to validity
• Conclusions and Future Work
The i* Framework
The DHARMA Method

Activity 1: Modelling the Enterprise Context

Activity 2: Modelling the Environment of the System

Activity 3: Decomposition of System Goals

Activity 4: Identification of System Architecture
Research Questions

Is the concept of \( i^* \)actor, its types and the is-a (sub-typing) relation understood by the junior consultants who participated in the CM construction?

Is the concept of dependency, as well as the four types of dependency proposed in the \( i^* \)language, understood by the junior consultants who participated in the CM construction?
The Study

36 CM constructed by university students (junior consultants), applying DHARMA
1,111
Actors

204
Errors

18,36%
With errors between 10.87 and 32.00%
Errors concerning actors

Type: *Public Supplier* identified as *Person* instead of *Organization*.

Name: *Sales in Pharmacies* -> *Pharmacies*
839 is-a Relations

217 Errors

25,86%
2,095 Dependencies
318 Errors
15,18%
Errors concerning dependencies

- **Type**: Large purchase order as *Goal* instead of *softgoal*.
- **Name**: Teachers acquired -> Teaching services acquired
- **Direction**: Supplier -> Commercial contract made -> Sales
  Supplier <- Commercial contract made <- Sales
Guidelines to facilitate the $i^*$ language adoption
1. Identify actors from generic catalogues

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1. Identify actors from generic catalogues
2. Specialize actors based on categorization labels

ISA
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2. Specialize actors based on categorization labels
3. Complete actor's identification with proper instances
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2. Specialize actors based on categorization labels
3. Complete actor's identification with proper instances
4. Populate the CM with generic dependencies
1. Identify actors from generic catalogues
2. Specialize actors based on categorization labels
3. Complete actor's identification with proper instances
4. Populate the CM with generic dependencies
5. Refine dependencies in a pairwise way
Threats to validity
Construct validity

Internal validity

External validity
Conclusions and Future Work
To determine the level of understanding of \(i^*\) constructs and identify common errors when using the notation.

RQ1 and RQ2: Concepts of actor and dependency are understood, but a deeper explanation is needed.

We believe that our results show that \(i^*\) can be successfully adopted by practitioners in the modeling activities.

We aim at linking the dependencies with the areas in the value chain to better distribute the responsibilities of the system.

To complete the ongoing study regarding to the guidelines provided in this work.

To conduct a similar study focused on \(i^*\)SR models, analyzing goal decomposition, means-end links, etc.

Tool support for building \(i^*\) models applying the guidelines presented
Thanks!