*i** in Practice: Identifying Frequent Problems in its Application

The Authors

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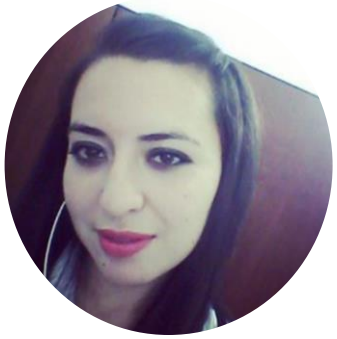

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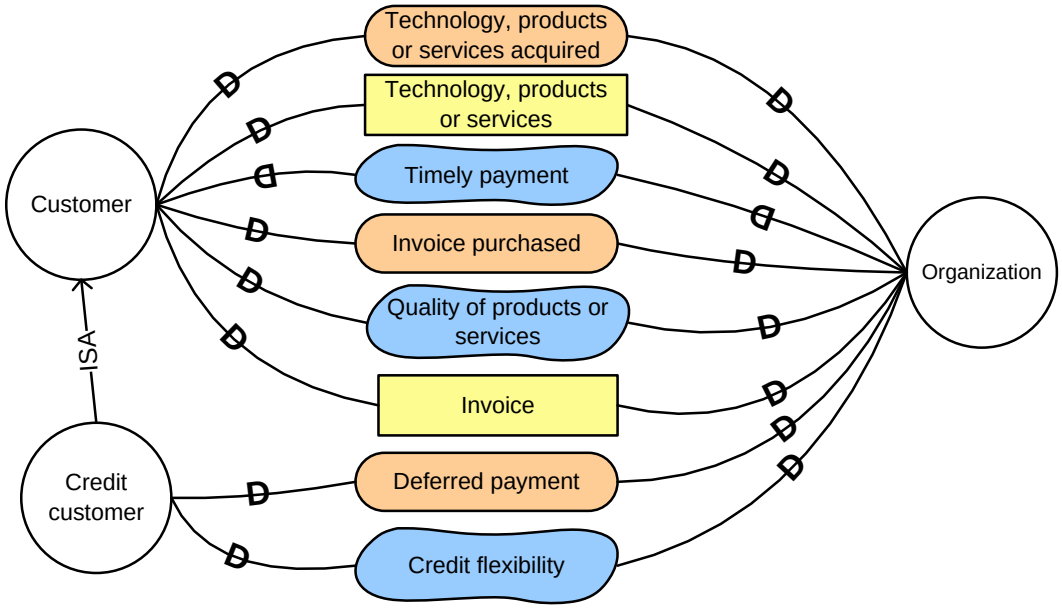
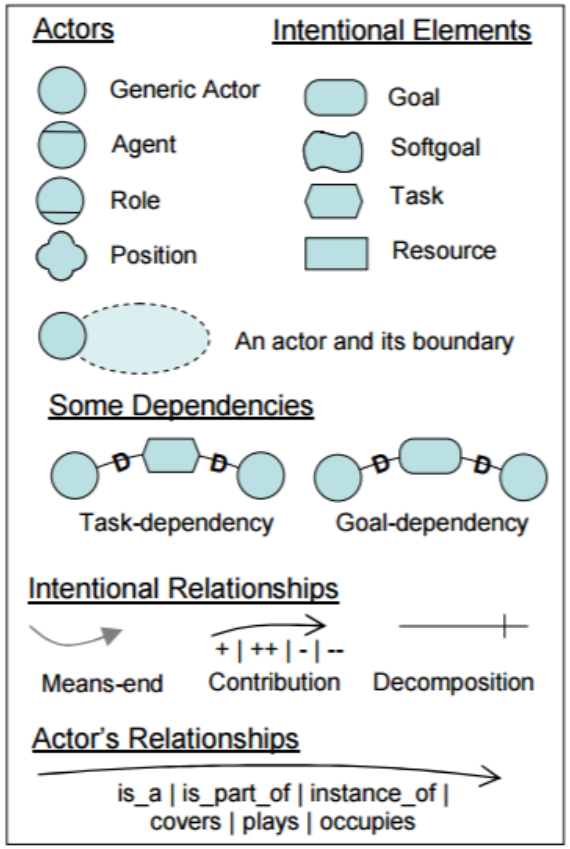
Xavier Franch

Agenda

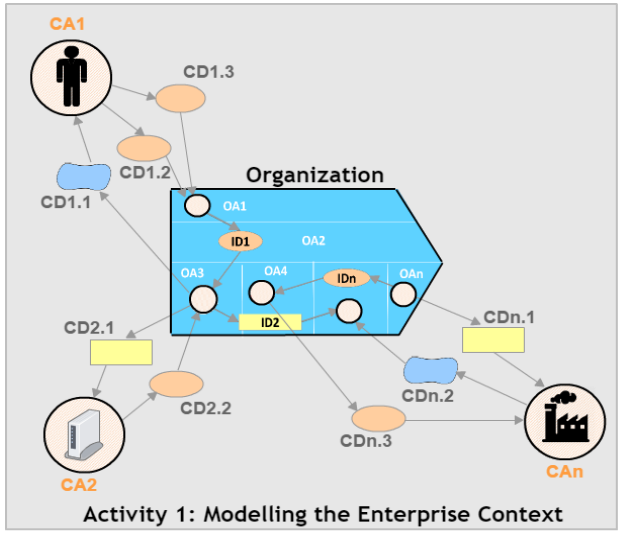
- Background
- Research questions
- The Study
- The analysis
- Results
- Guidelines to facilitate the *i** language adoption
- Threats to validity
- Conclusions and Future Work

The *i** Framework

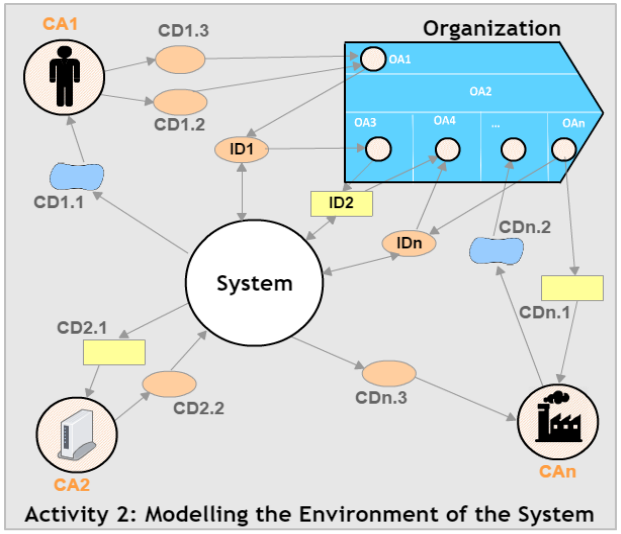




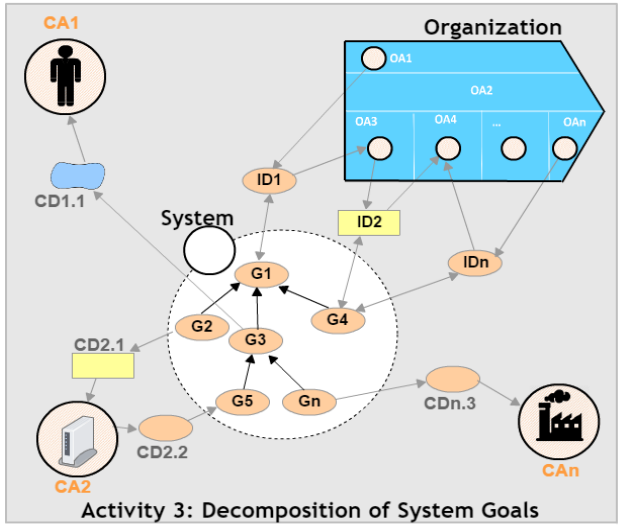
The DHARMA Method



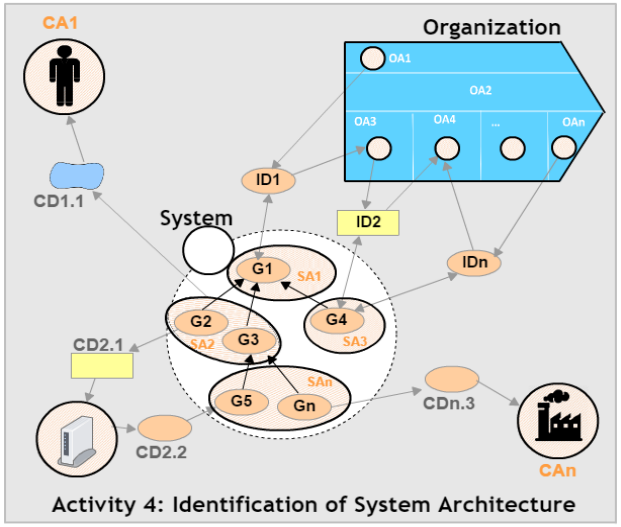
Activity 1: Modelling the Enterprise Context



Activity 2: Modelling the Environment of the System



Activity 3: Decomposition of System Goals



Activity 4: Identification of System Architecture

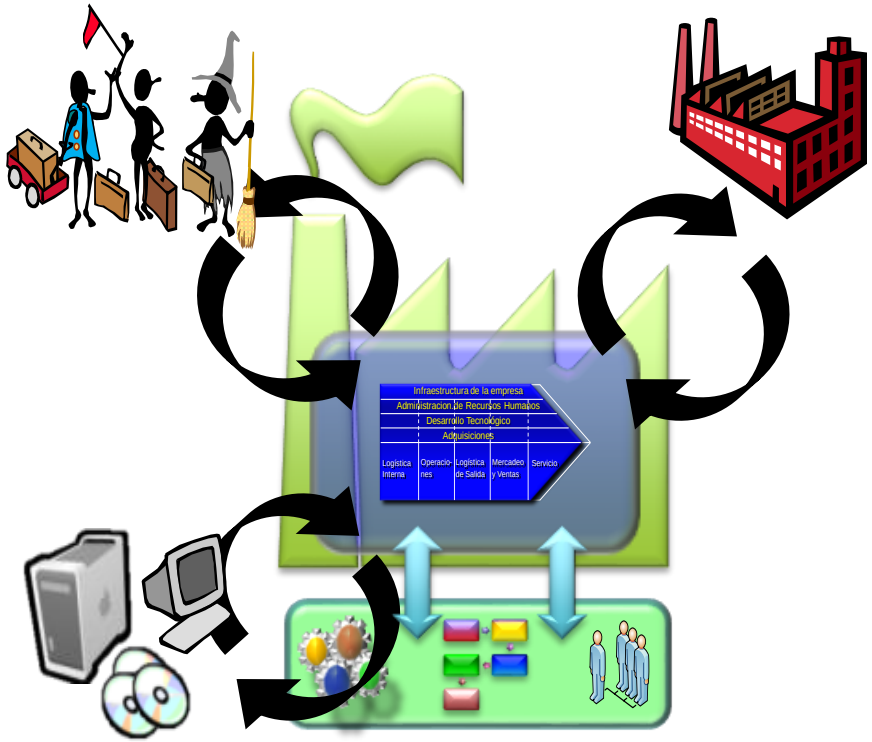
Research Questions

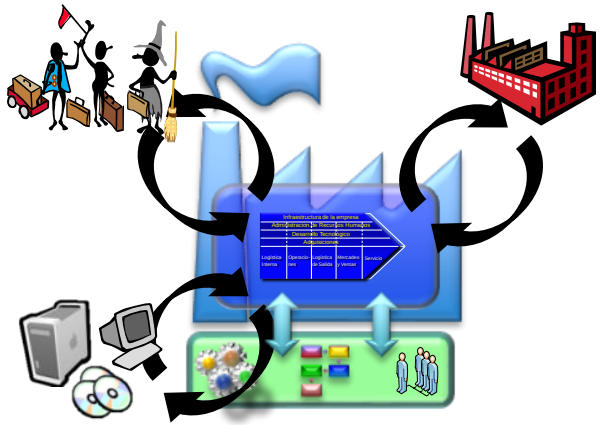
Is the concept of *i** actor, its types and the is-a (sub-typing) relation understood by the junior consultants who participated in the CM construction?

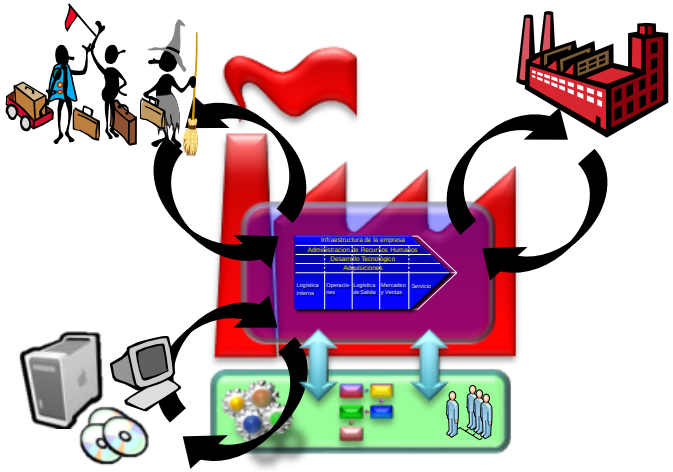
Is the concept of dependency, as well as the four types of dependency proposed in the *i** language, understood by the junior consultants who participated in the CM construction?

The Study

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







RESULTS

1,111

Actors

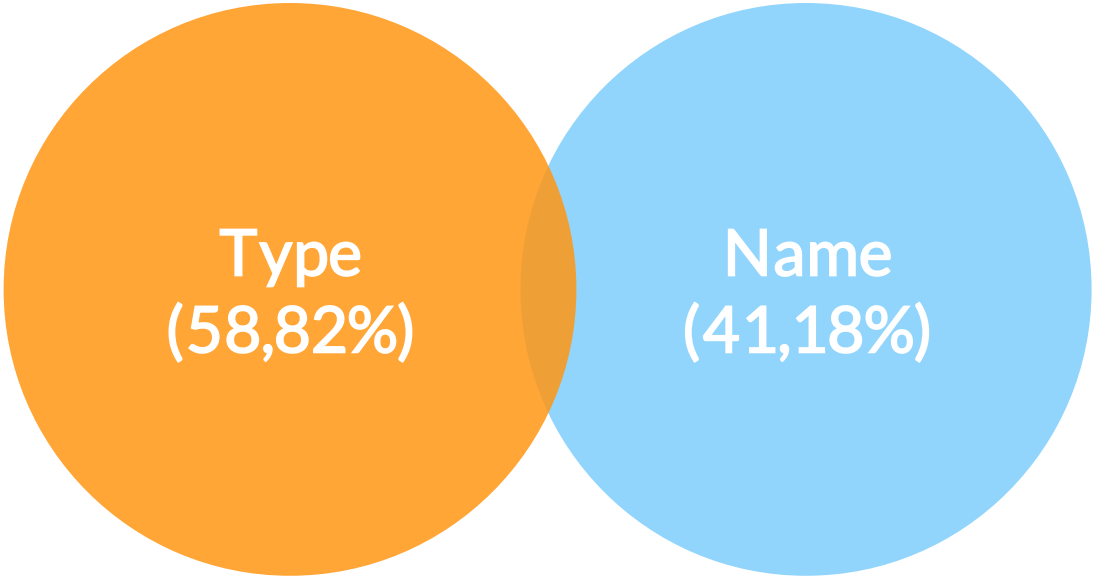
204

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

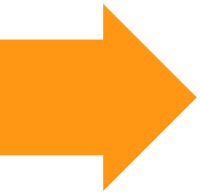
839

is-a Relations

217

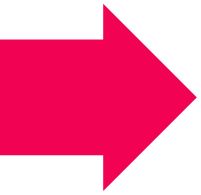
Errors

25,86%



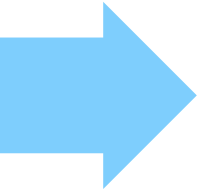
2,095

Dependencies



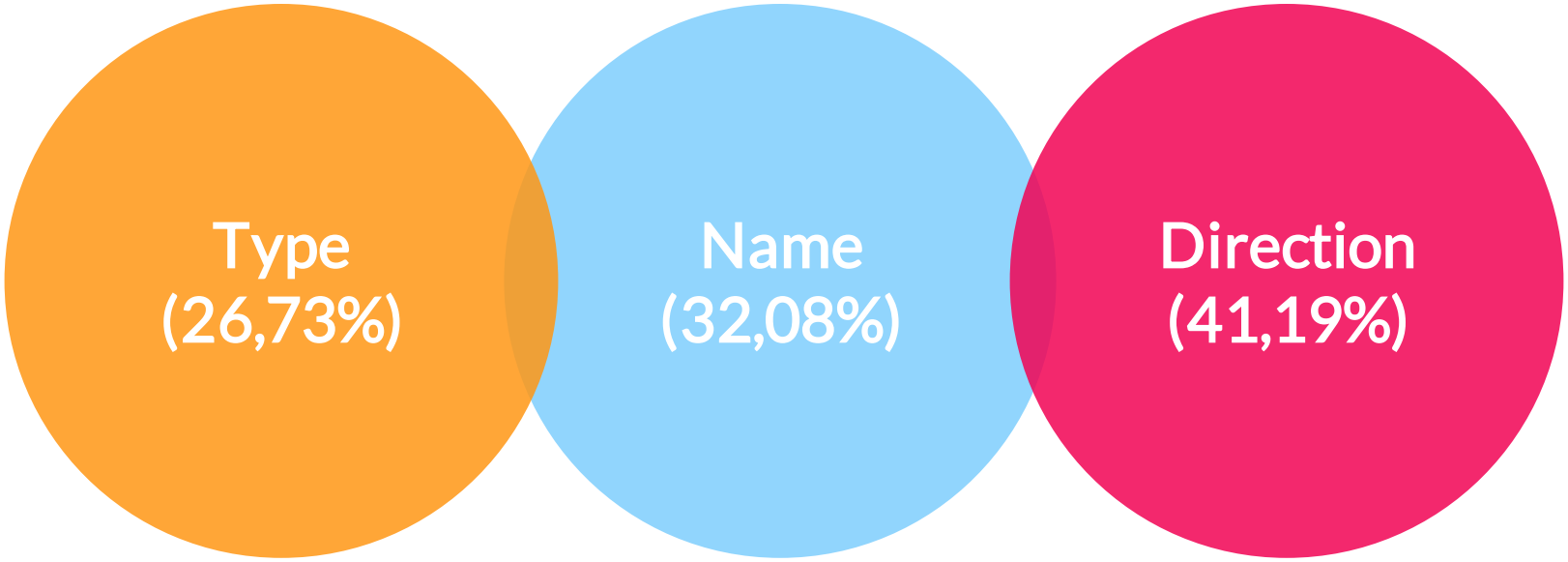
318

Errors



15,18%

Errors concerning dependencies



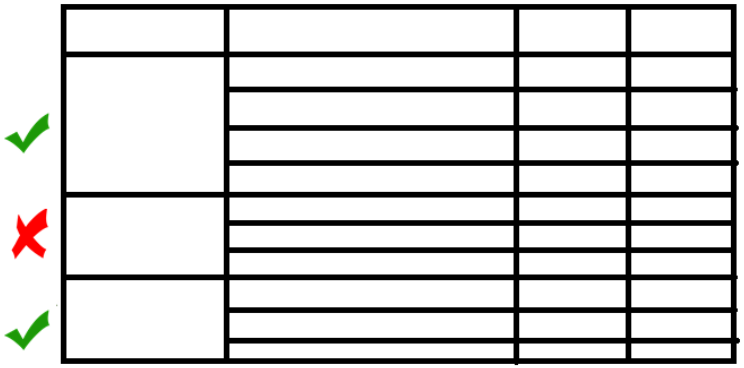
Type: *Large purchase order* as *Goal* instead of *softgoal*.

Name: Teachers acquired -> Theaching services acquired

Direction: Supplier -> Commercial contract made -> Sales
Supplier <- Commercial contract made <- Sales

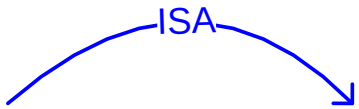
Guidelines to facilitate the *i** language adoption

1. Identify actors from generic catalogues

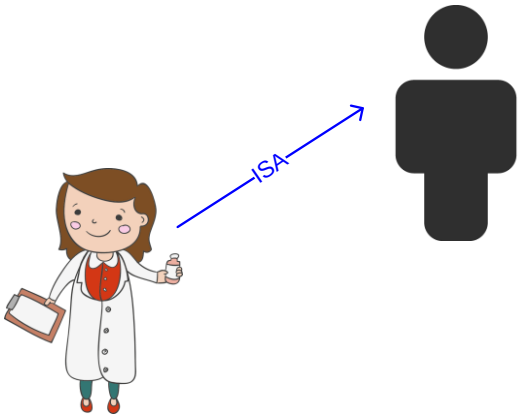


1. Identify actors from generic catalogues

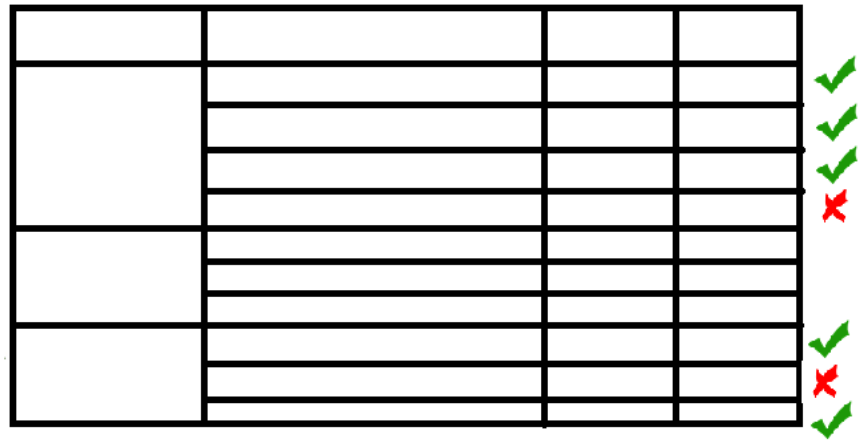
2.Specialize actors based on categorization labels



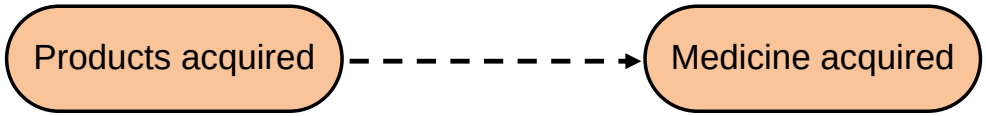
1. Identify actors from generic catalogues
2. Specialize actors based on categorization labels
3. Complete actor's identification with proper instances



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



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!