iStar in Practice: On the identification of reusable SD Context Models Elements

iStarT'15

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Hello, we wanted to be there… but…

Have a great workshop!!!

Karina Abad

Catalina Peña

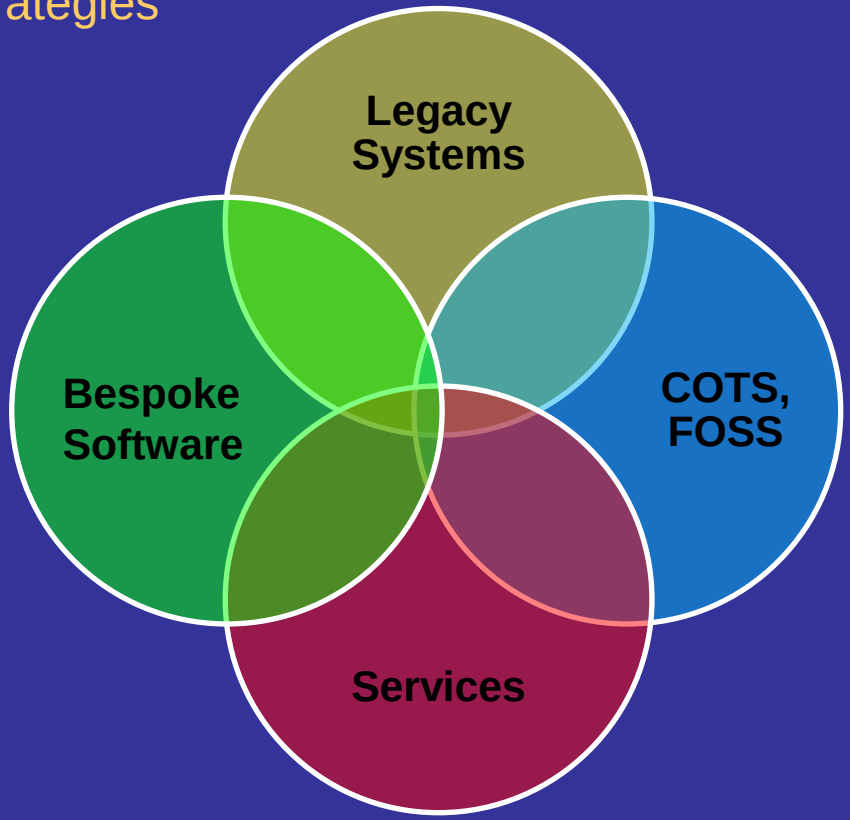
AGENDA

1. Motivation
2. Background
3. A new approach to address the problem
4. Conclusions and future work

MOTIVATION

Motivation (1/2)

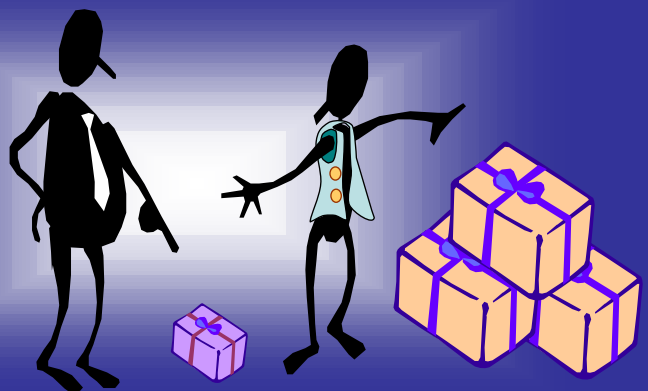
- Modern enterprises largely rely on IS designed to support and orchestrate their operation, provide information to endorse decision making
- Usually Hybrid Systems build by integrating software components of different nature and origins
- IS architecture is a key success factor requires deep understanding of the enterprise and strategies



Motivation (2/2)

IS architecting is not an easy task:

- communication gaps among technical and administrative personnel
- limited knowledge of the enterprise structure, operations and strategy
- Lack of ability to understand and endorse business strategy

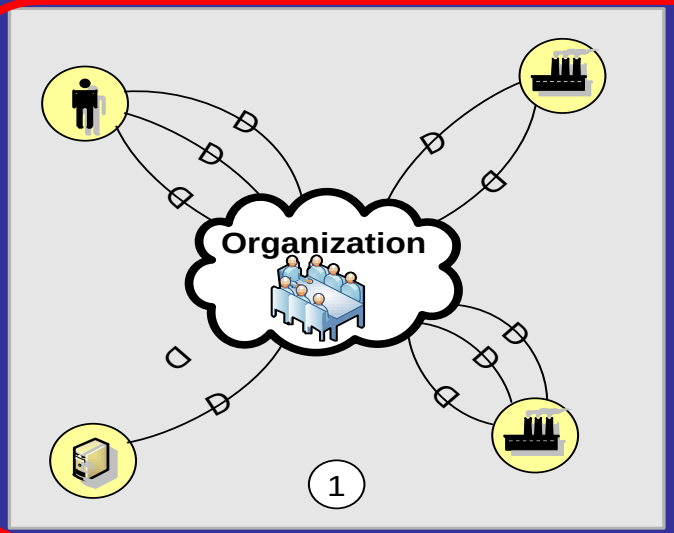


BACKGROUND

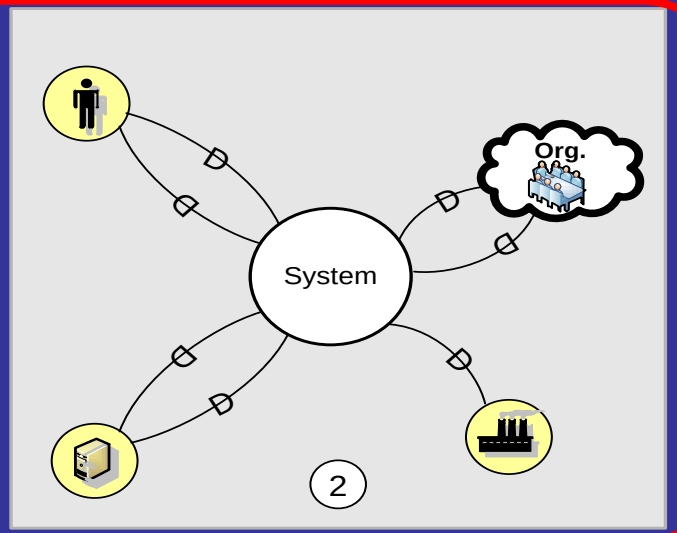
The DHARMA method

4-phase method for defining IS architecture with *i**

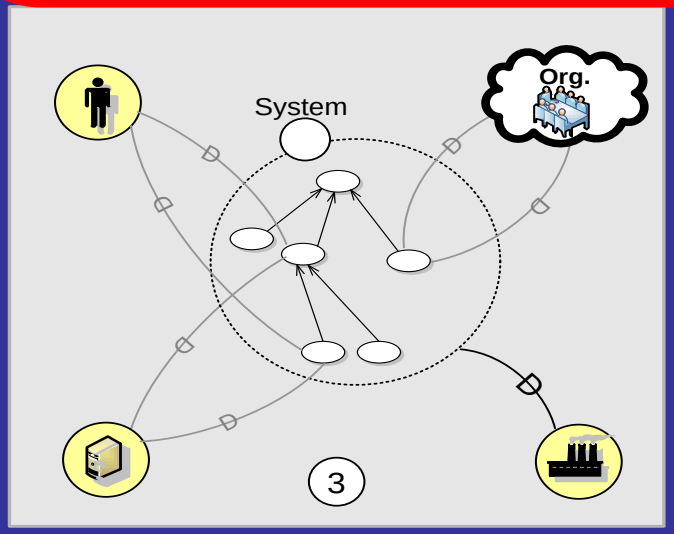
1. Enterprise context



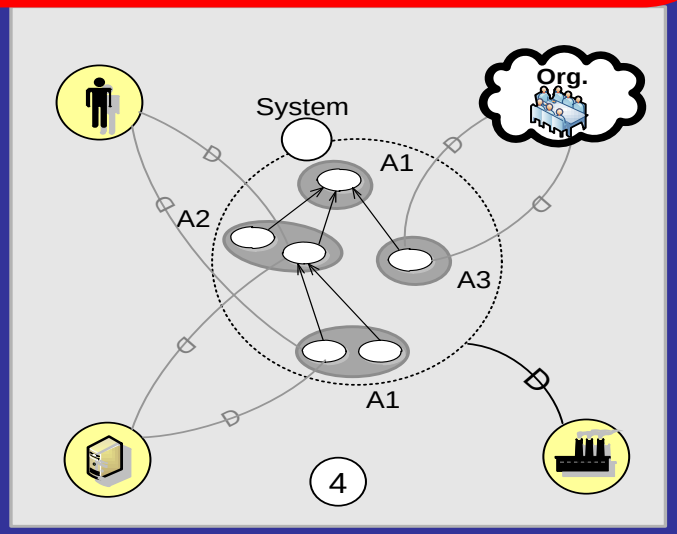
2. Impact analysis



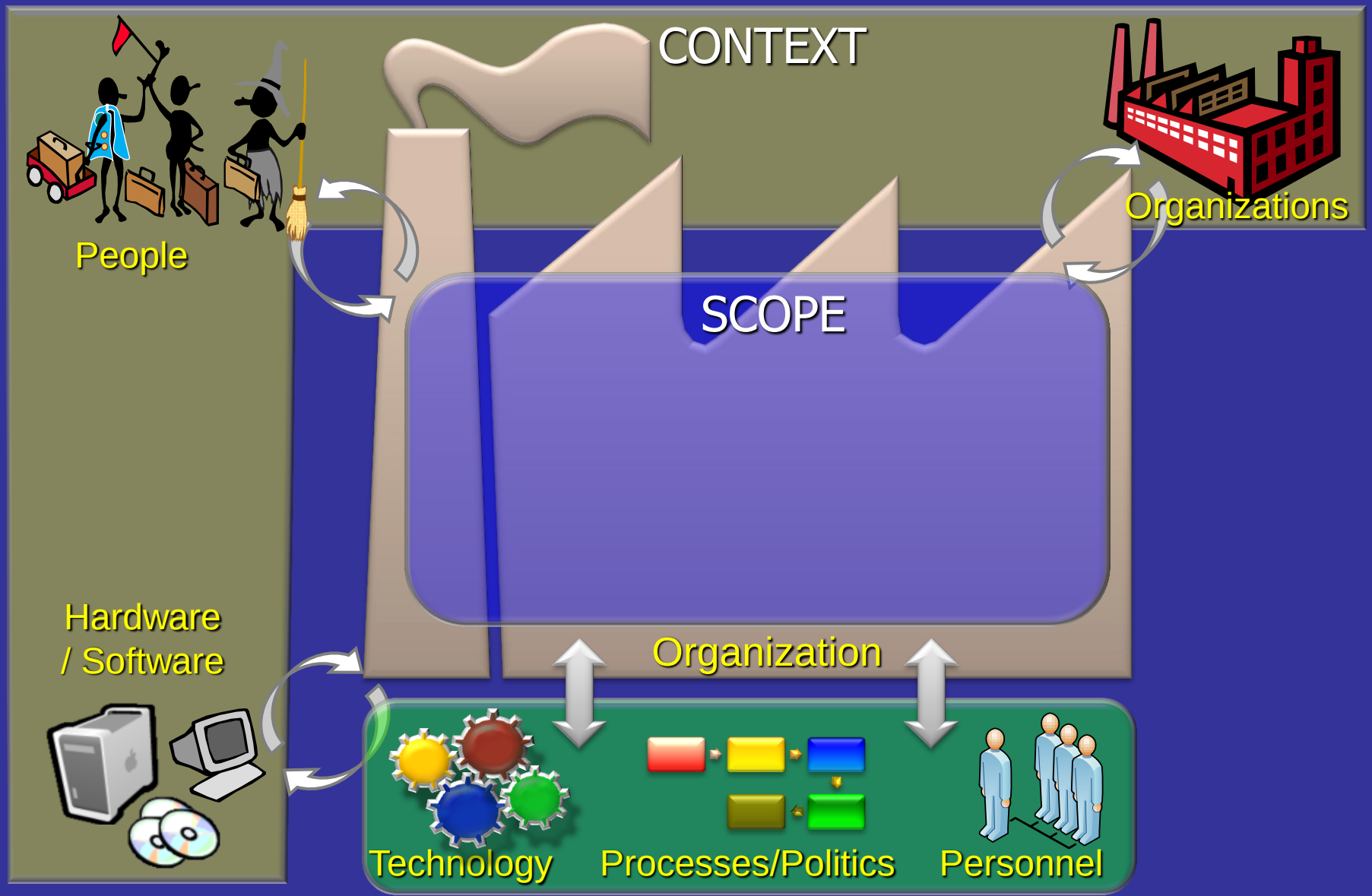
3. Decomposition of IS



4. Architecting a solution



The context and the organizational Scope



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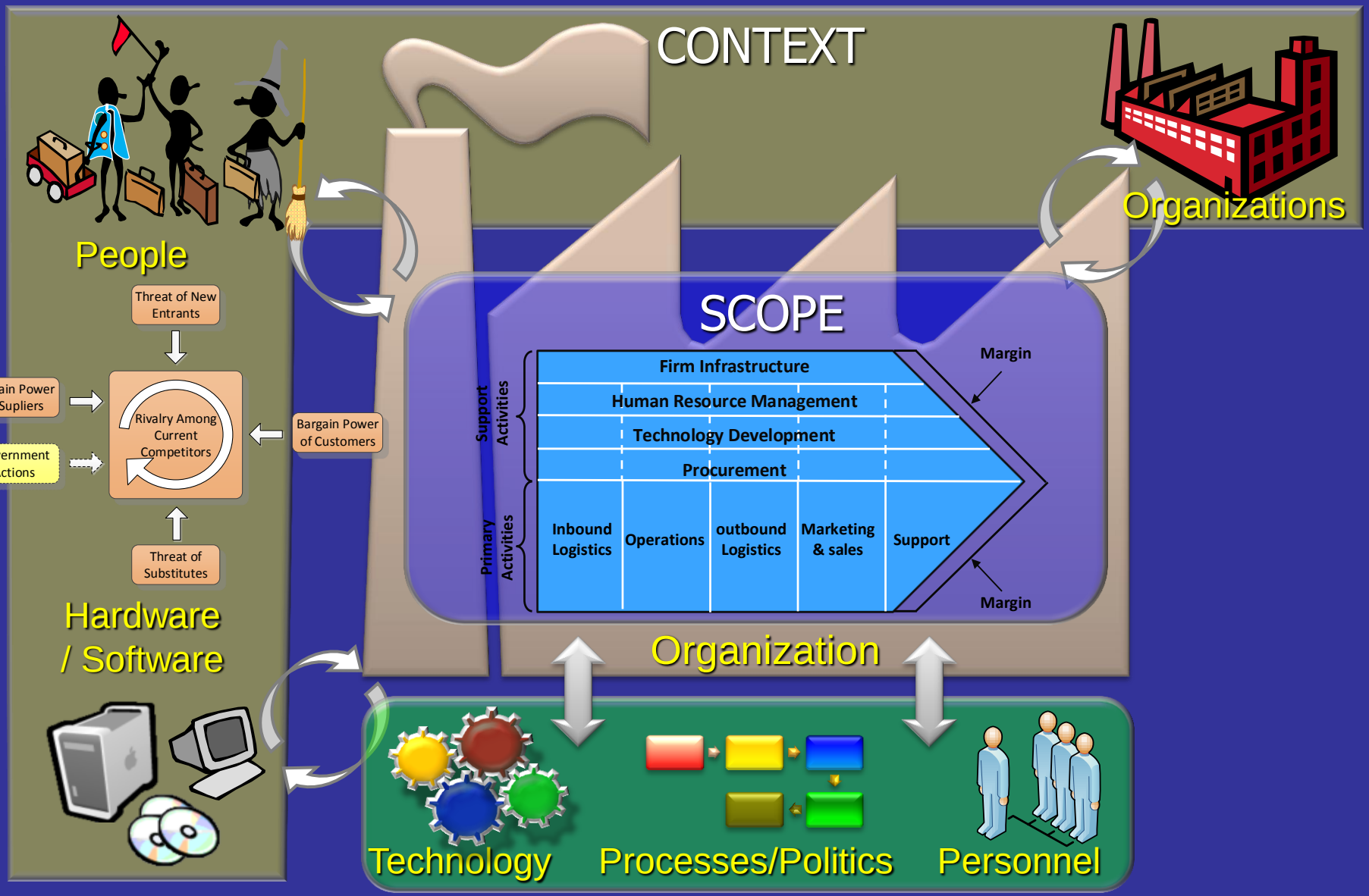
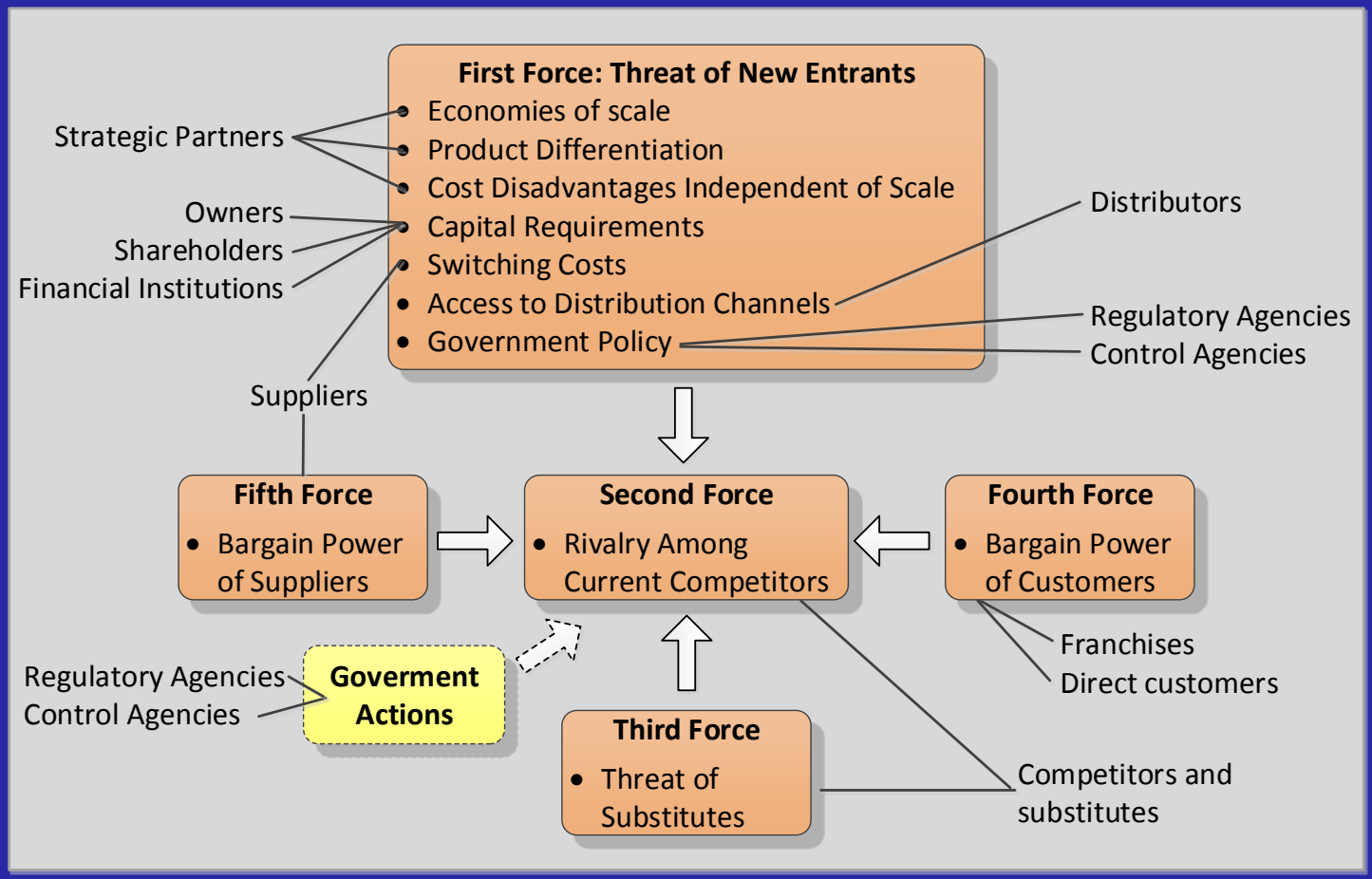


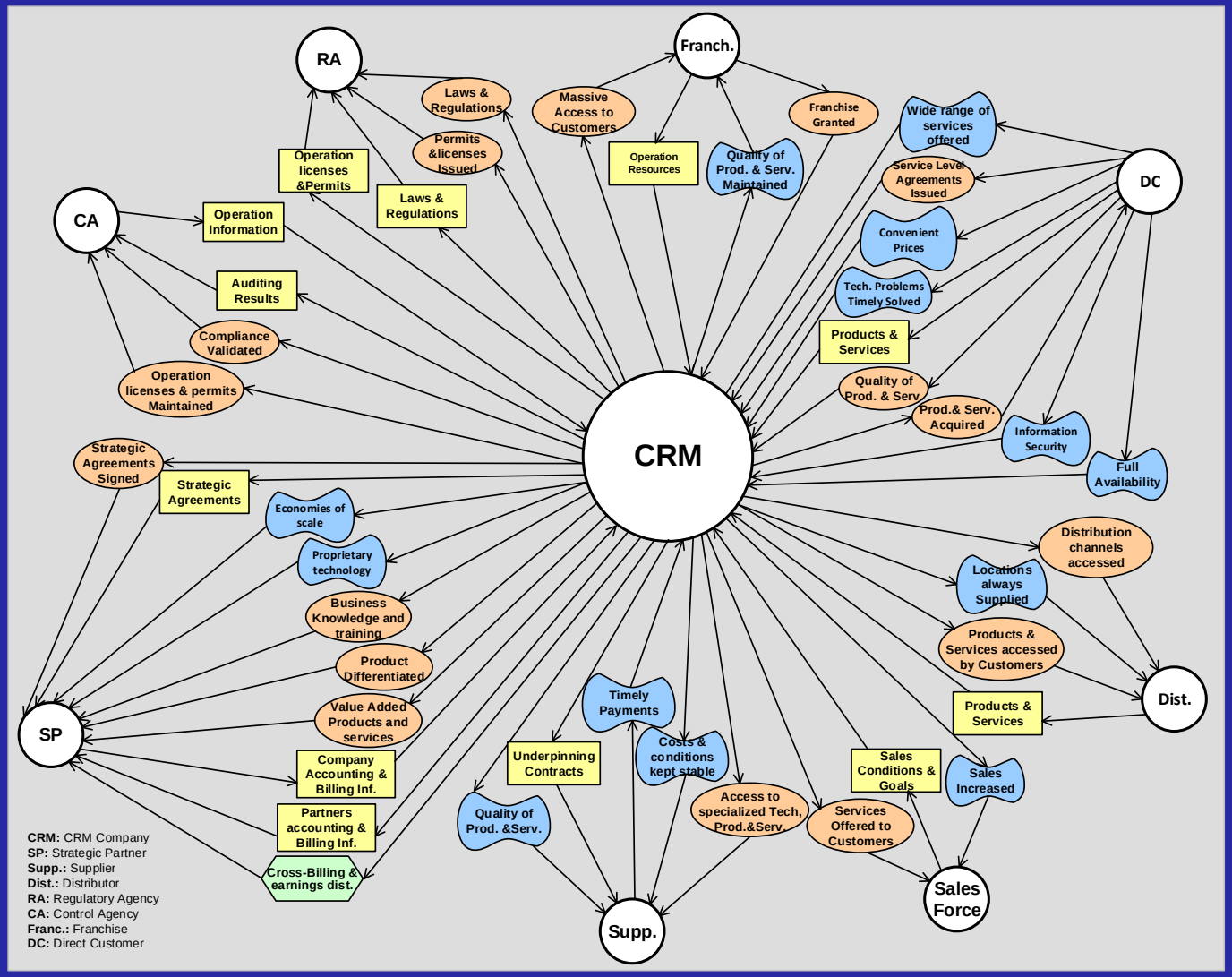
/* SD-based Context Model patterns (1/2)

- 5 industrial cases led as define 3 patterns CRM, SCM, ERP.
  - 11 generic actors where identified in relation to porters five market forces.
  - 57 generic dependencies in relation to them.



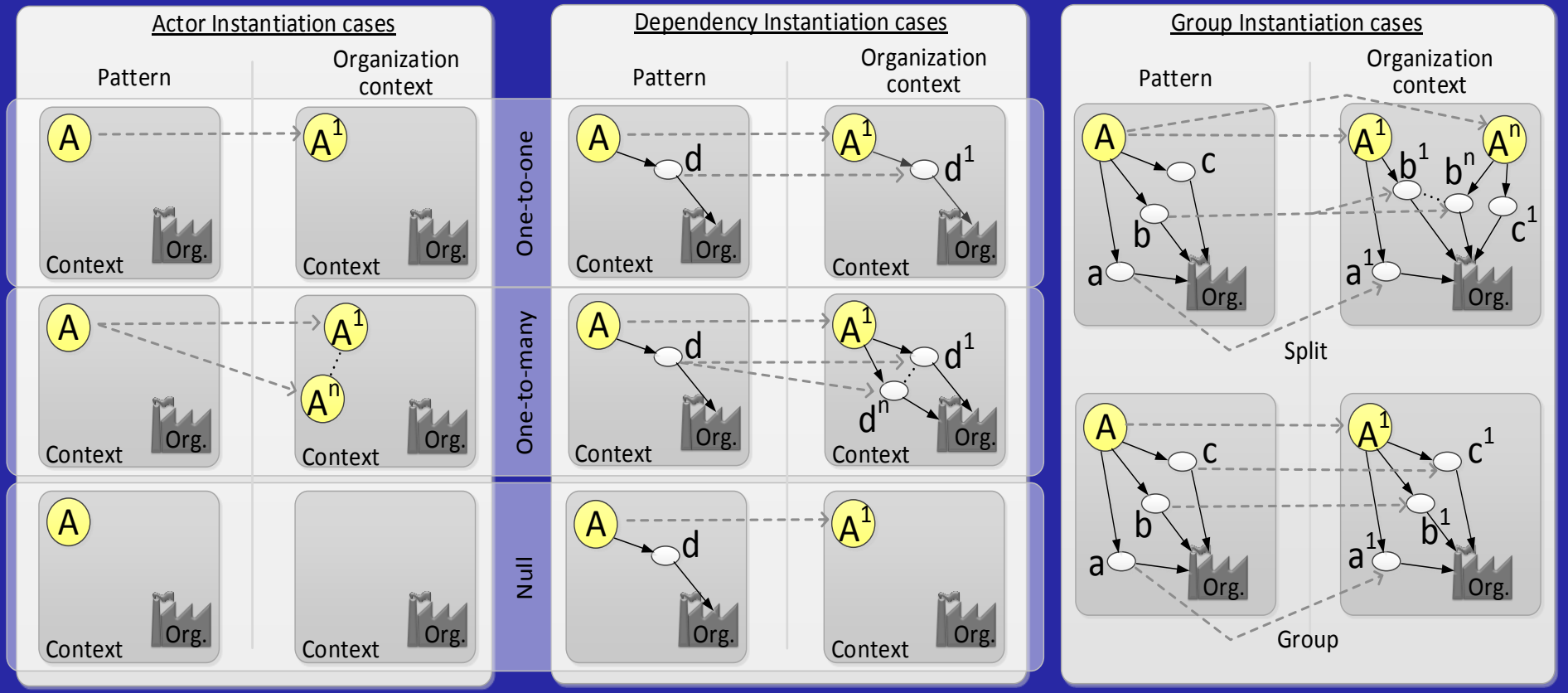
/* SD-based Context Model patterns (2/2)

- Patterns where defined for generic Business Models (CRM, ERP, SCM)



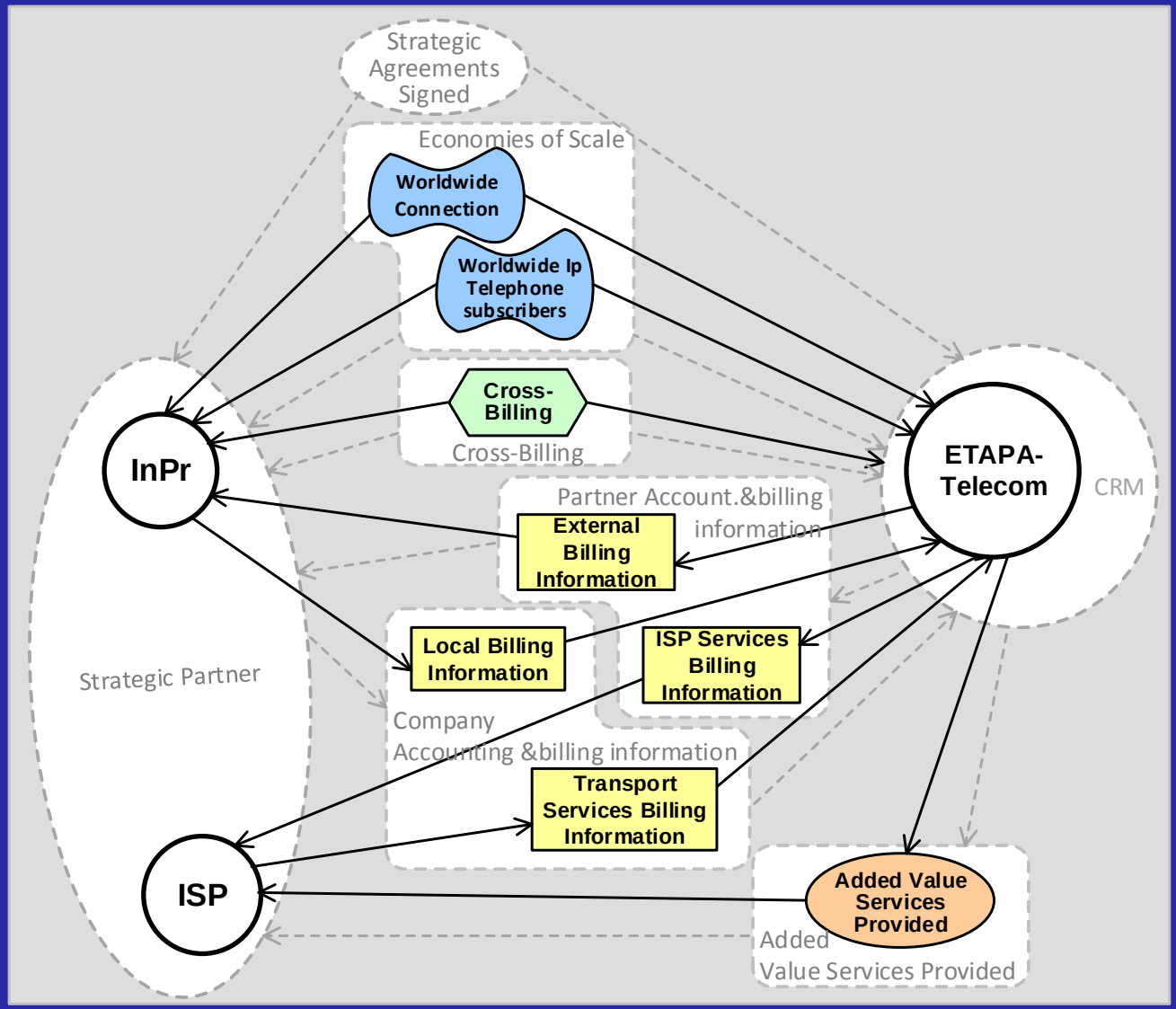
Pattern instantiation cases (1/2)

- Patterns instantiation cases where also formalized



Pattern instantiation cases (1/2)

- Used to support patterns instantiation in practice



/* SD patterns… some practical problems

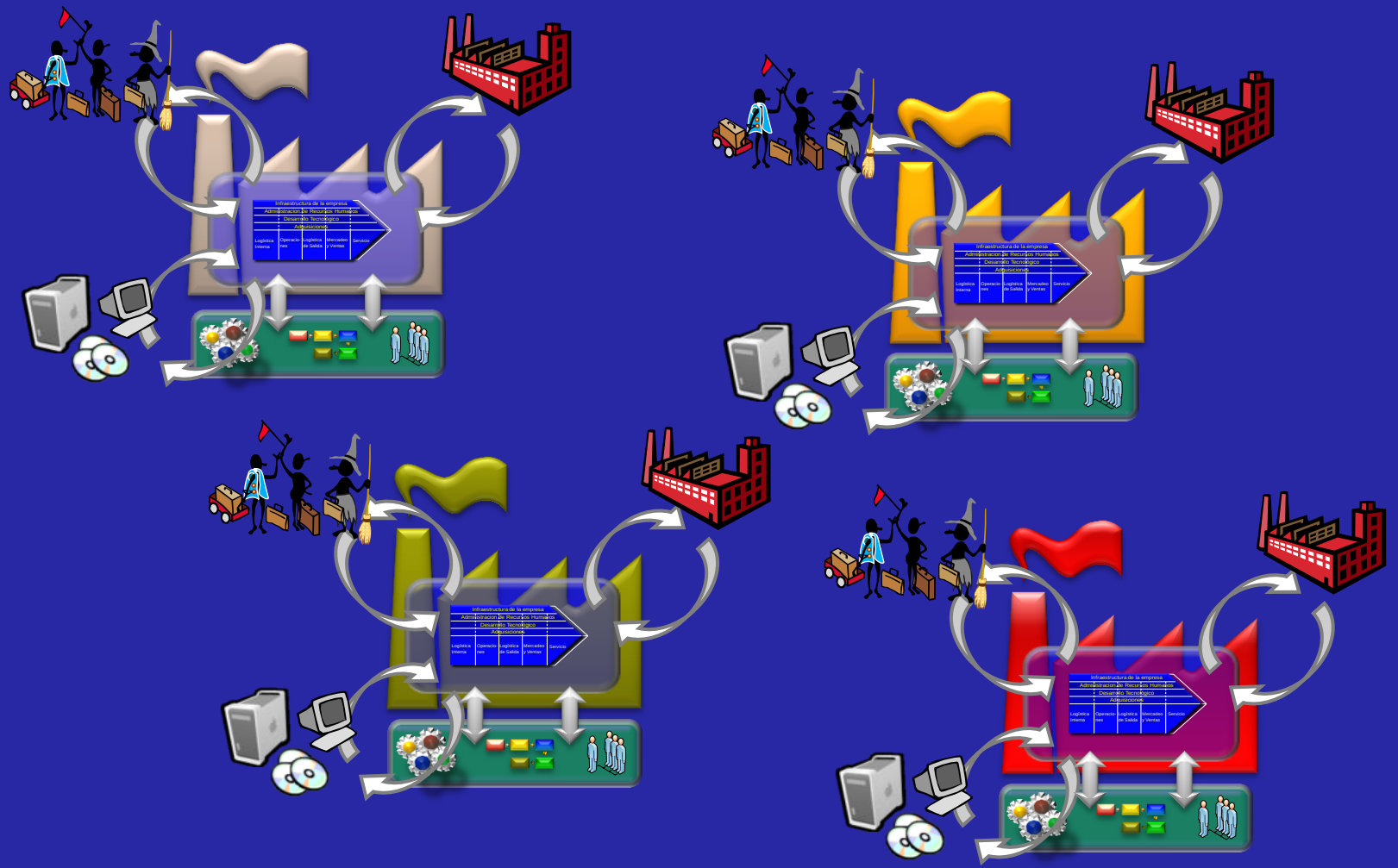
- Problems with the approach
  - To many business models… impossible to identify patters for all of them
  - Patterns grow to large
  - Semantic problems make it difficult to match dependencies
  - Graphical nature of i*…

A NEW APPROACH TO ADDRESS THE PROBLEM

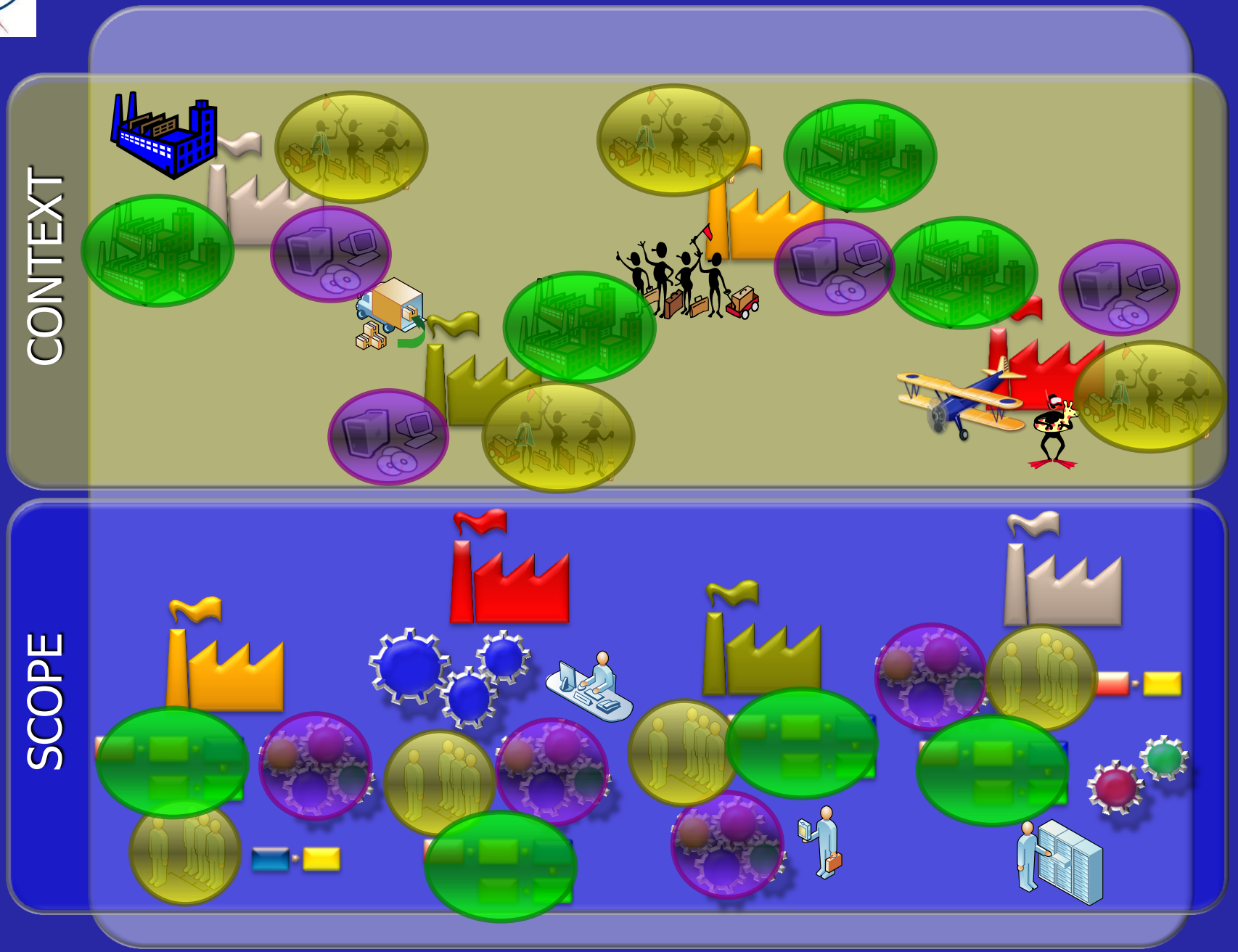
First objective: validate and extend patterns catalogue

In the last three years we have explored 29 organizations

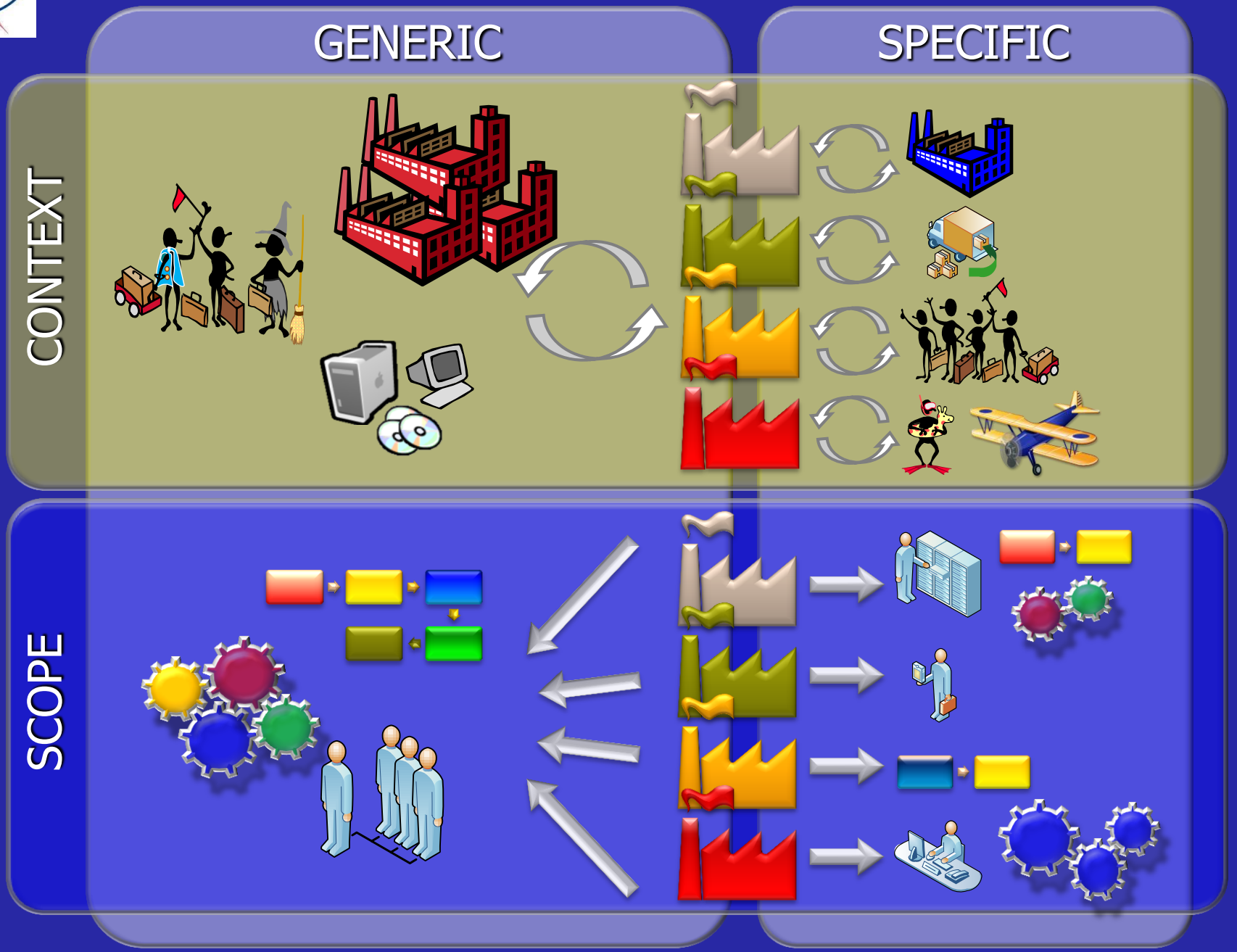
- Cases helped to validate the actors and dependencies included in patterns
- … and the instantiation cases



Identification of common elements (1/2)



Identification of common elements (1/2)

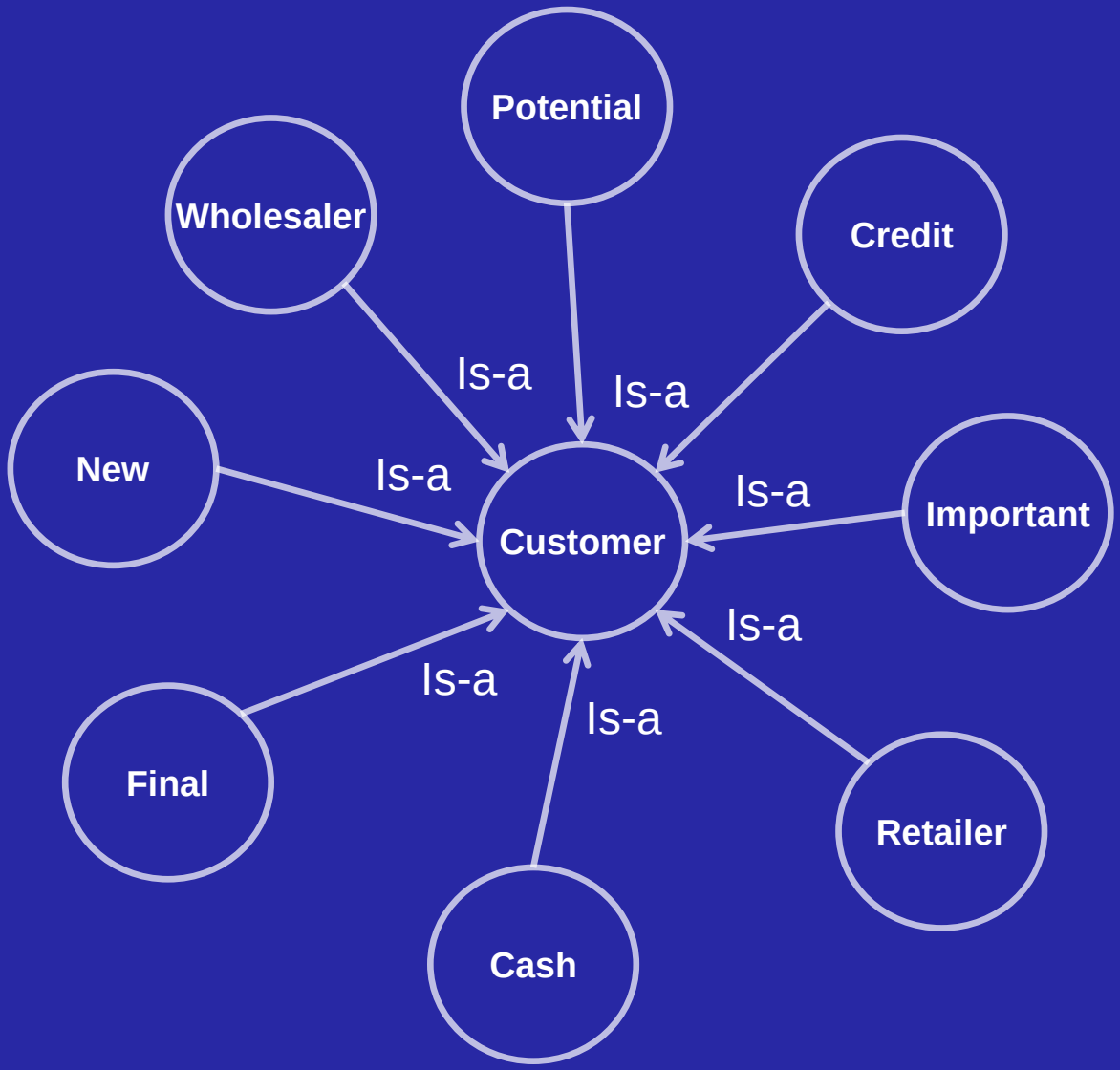


Some of the results

- 29 cases conducted in small, medium and large companies
  - In addition to the 5 original industrial cases
  - Currently 25 new cases under analysis

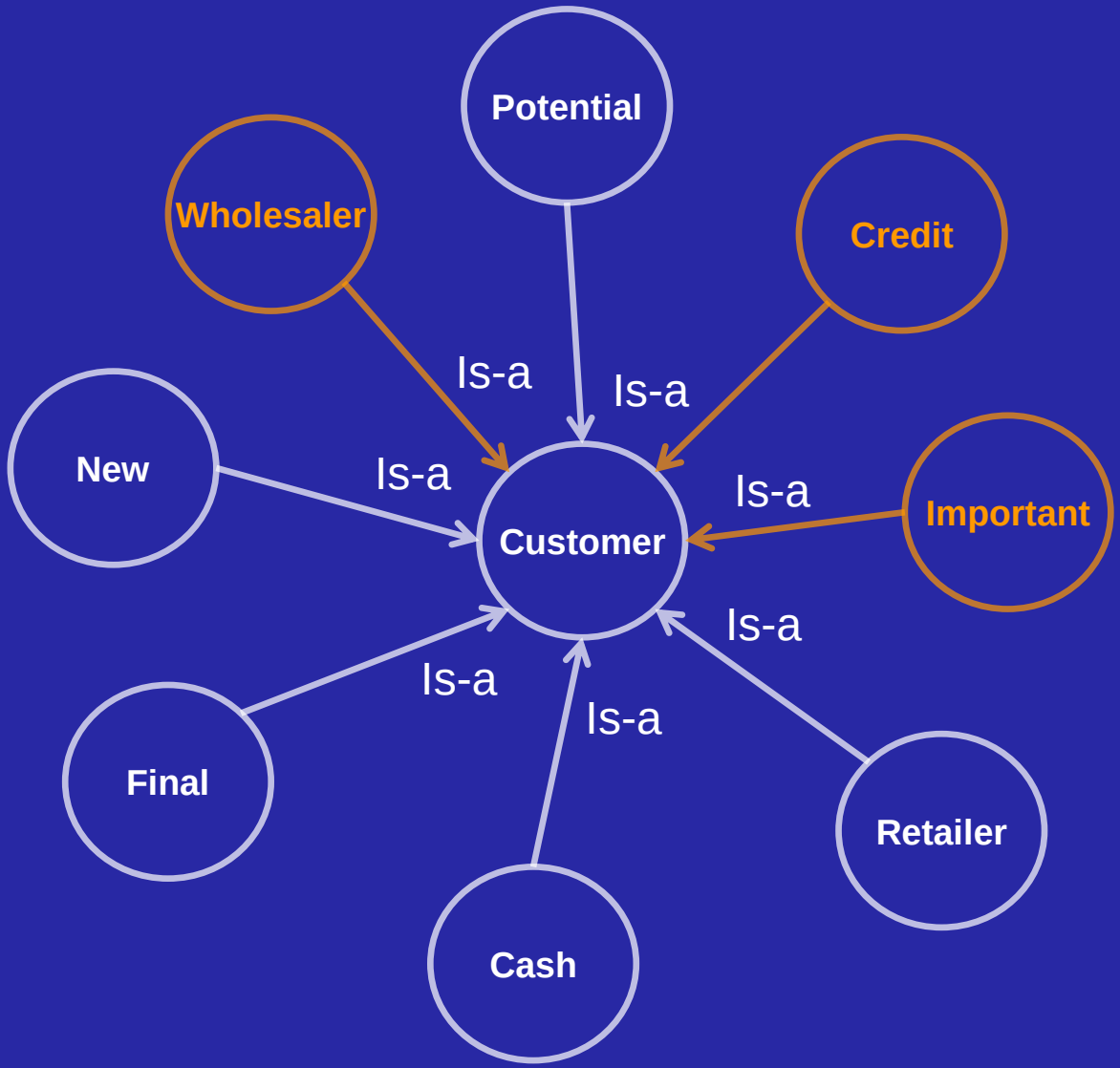
- Some numbers in relation to the 29 cases
  - 59 actors identified
    - All of them in relation to the 11 original generic actors
    - 23 appeared in at least 17% of the cases
  - 189 dependencies identified
    - Including the 57 original ones
    - 52 appeared in at least 17% of the cases

Regarding actors (1/2)



Regarding actors (2/2)

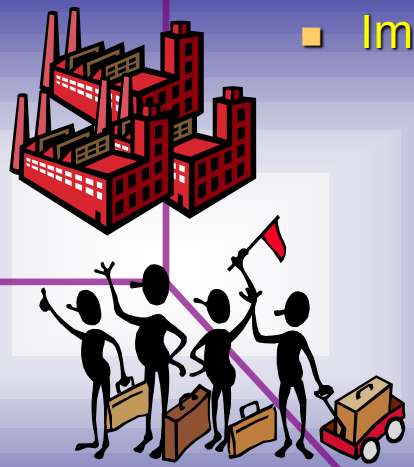
- They can be of more than one type at the time



Identification of actors categorization dimensions

- Identified actors can be categorized according some orthogonal categorization dimensions
  - Each dimension has a set of categorization labels associated
  - E.g., Customers

Frecuency
- Potential
- New
- Important



Distribution Chanel
- Wholesaler
- Retailer
- Final

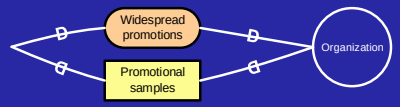
Payment method
- Credit
- Cash

A catalogue of Actors categorization dimensions

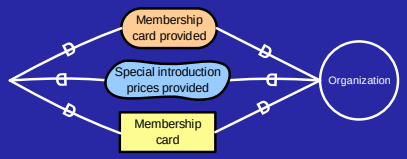
- Each label has generic dependencies associated to them

Frecuency

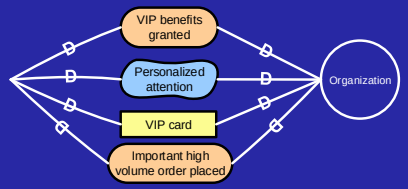
- Potential



- New

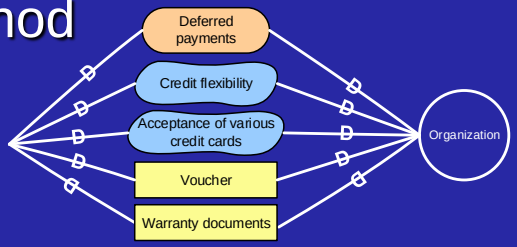


- Important

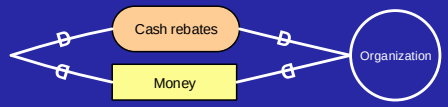


Payment method

- Credit

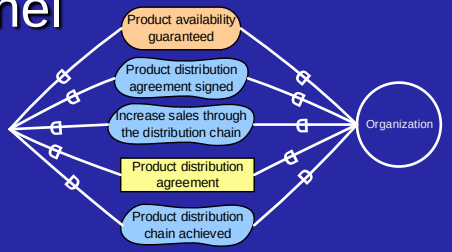


- Cash



Distribution channel

- Wholesaler



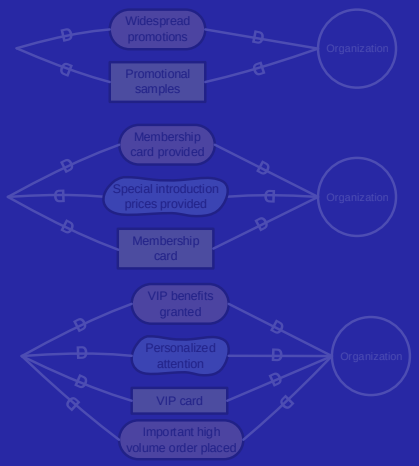
- Retailer

- Final

Using the Catalogue: Actors Identification (1/2)

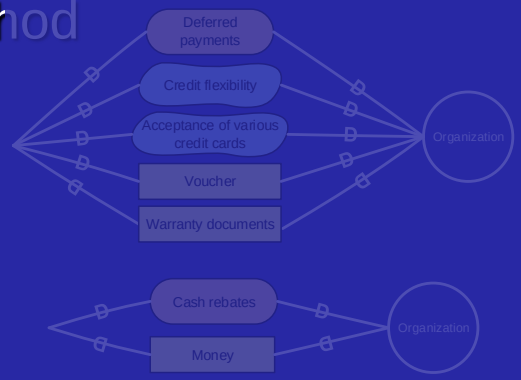
Frecuency

- Potential
- New
- Important



Payment method

- Credit
- Cash



- Potential actors are identified by combining labels
- E.g., Customers
  - Potential + Credit
  - Potential + Cash

    or
  - New + Credit
  - New + Cash

    or
  - Important + Credit
  - Important + Cash

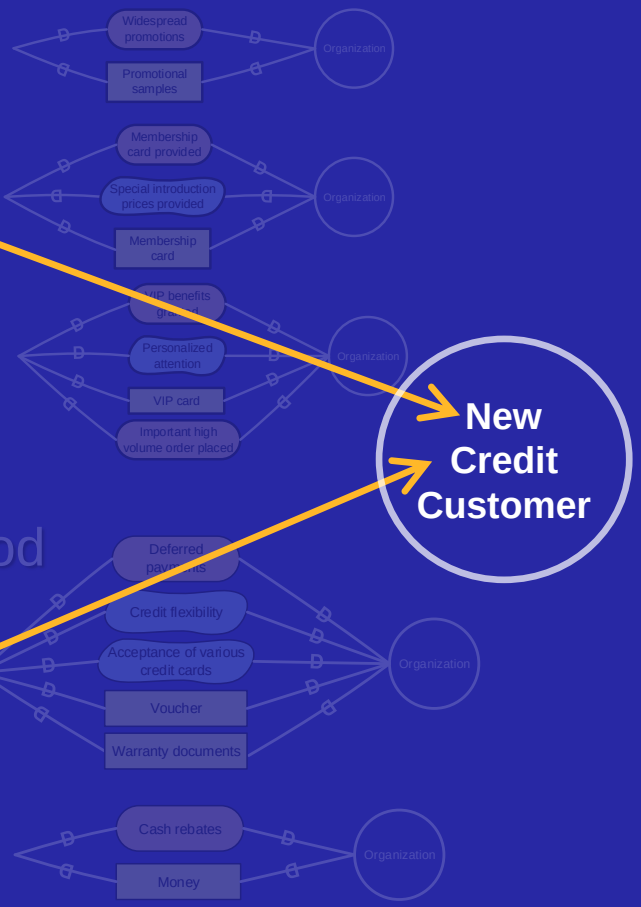
Using the Catalogue: Actors Identification (2/2)

Frecuency

- Potential
- New
- Important

Payment method

- Credit
- Cash



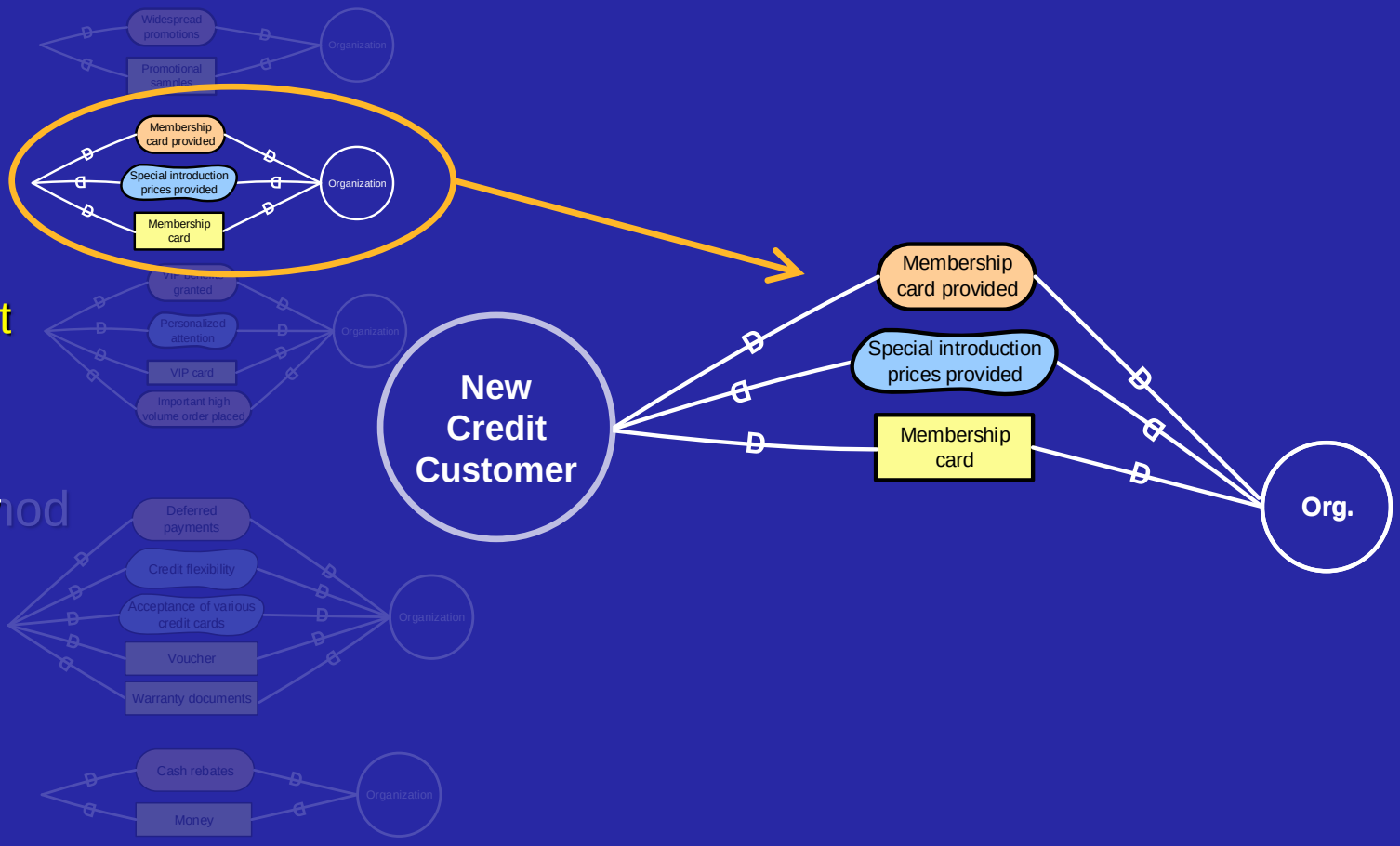
Using the Catalogue: SD Context Model construction

Frecuency

- Potential
- New
- Important

Payment method

- Credit
- Cash



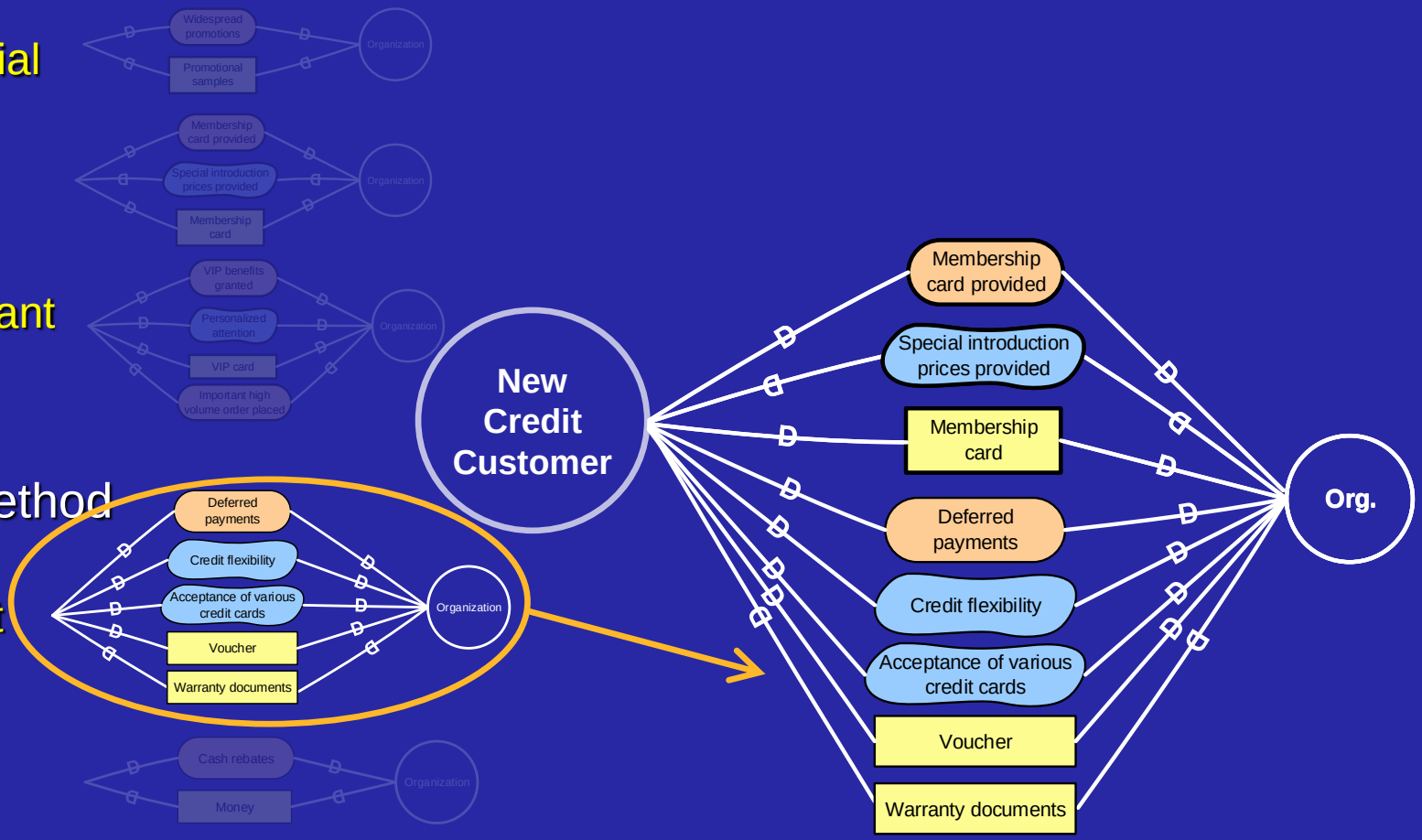
Using the Catalogue: SD Context Model construction

Frecuency

- Potential
- New
- Important

Payment method

- Credit
- Cash



CONCLUSIONS AND FUTURE WORK

Conclusions + Future work

- Catalogue of reusable elements for *i** SD-based Context Models
- Method to systematize the identification of Context Actors and dependencies
- Proposal based in significant amount of empirical evidence
- The resulting catalogue of reusable elements and the method proposed, can be used to semi automate the construction of Context Models
- As future work we plan to:
  - Improve the catalogue, labels and dependency names
  - Introduce Semantic technologies to improve antonyms and synonyms recognition…
    - and improve matching of dependencies
  - Extend current tool support

Questions?