

Service System Modeling

A shared representation and a web-based tool for the collaboration of the telecom's innovators

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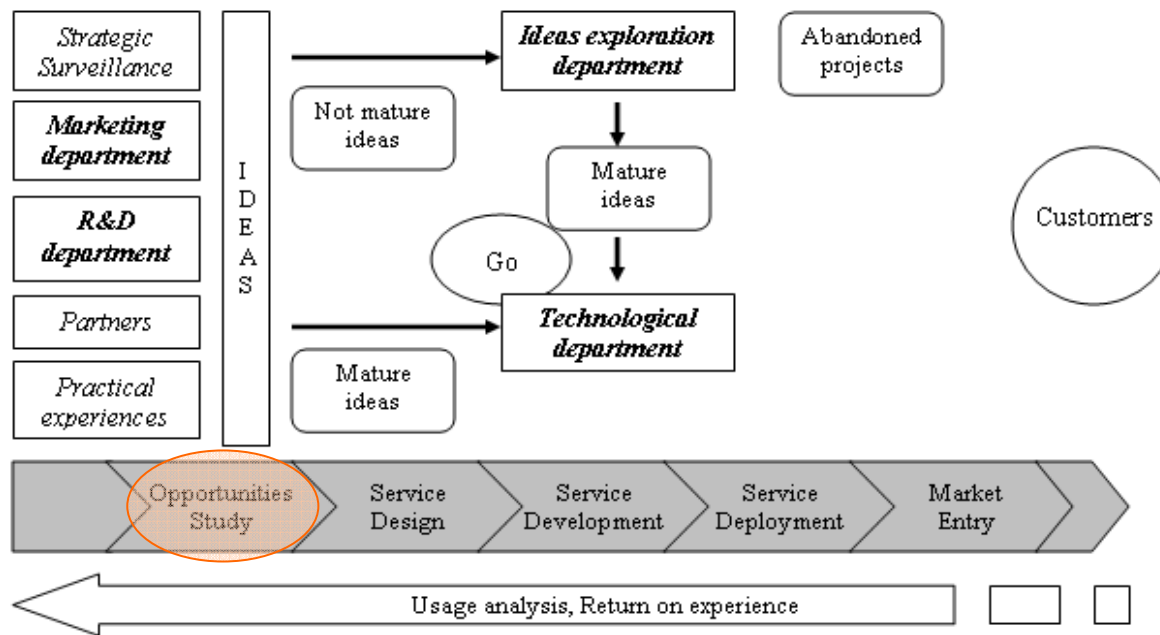
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Contents

- 1 Services innovation within the telecom context
- 2 The Service System concept and model
- 3 OntoStoria² : modeling and simulation method & platform
- 3 First experiment
- 4 Discussion

Services innovation - The telecom operators

- An evolving socio-economic environment
- A competitive market
- A structured services design process :



Services innovation - The « opportunities research »

→ A collaborative and complex practice :

- Lot of actors, documents, data, etc.
 - Remote and inter-professional network of innovators
 - Description of some technical functionalities or the business processes of the targeted customer
- ... instead of the overall targeted service situation

→ A core problem : the still confused concept of “service”

- Multi-dimensional object (lots of definitions and uses)
- Usually disconnected from the field of experience
- Linked to more and more integrated moments of analysis (design, production, consumption)

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The Service System - An emerging concept

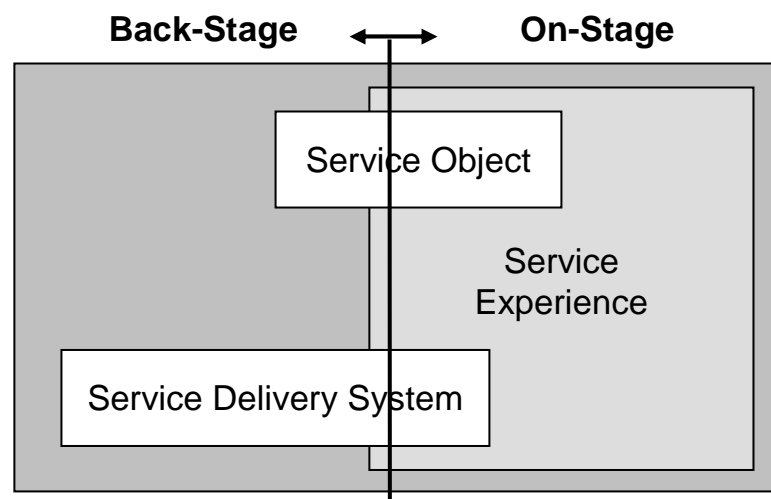
→ Proposition of the SSME community :

Services Systems are "*dynamic value co-creation configurations of people, technology, shared information (such as language, laws, measures), internal and external service systems connected by value propositions*" (Spohrer, 2007)

→ Hypothesis : a service as a system can be...

- A useful "intermediary object"
- An interesting "operational object"

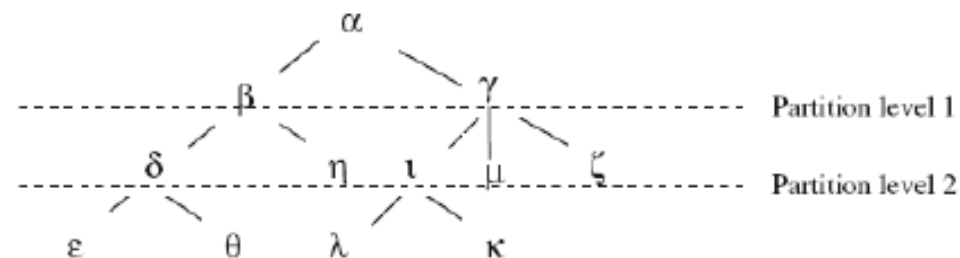
→ Structure :



(Bugeaud & Soulier, 2010)

The Service System – A mereo-processual model

- Existing models of the “service” always define it through its content / substance
- Service System = collection of dynamic, heterogeneous and space-time related entities
- Formalization through an ontological alternative which :
 - Considers dynamic and interacting categories
 - Adopts a “process-oriented” knowledge paradigm
 - Uses some principles from the Mereology and the General Process Theory



(Seibt, 2009)

- Construction thanks to a Service System co-modeling and simulation method

- Hypothesis :

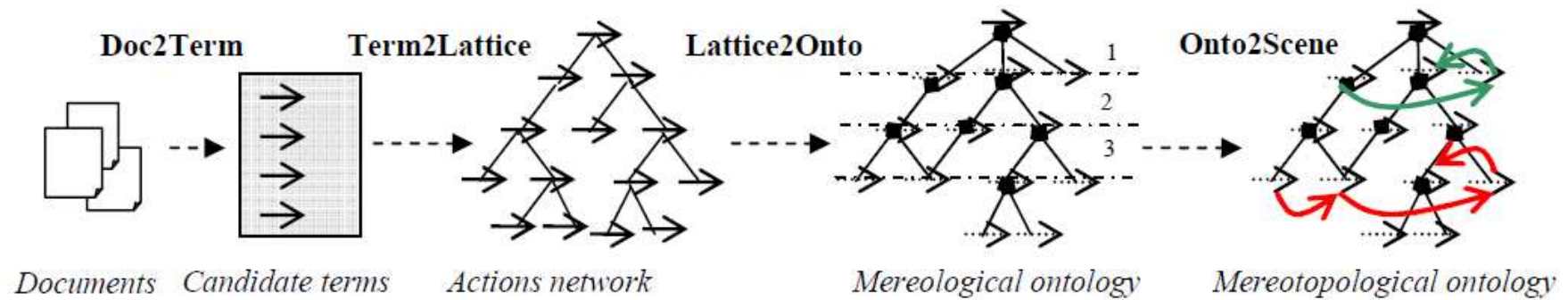
a process-oriented ontology of heterogeneous and interacting entities will provide an appropriate philosophical and conceptual framework for the Services Systems representation, the identification of all the possible scenarios and the detection of the service communities

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OntoStoria² - Modeling and simulation method

→ A semi-formal semantic description of dynamic categories :



Then :

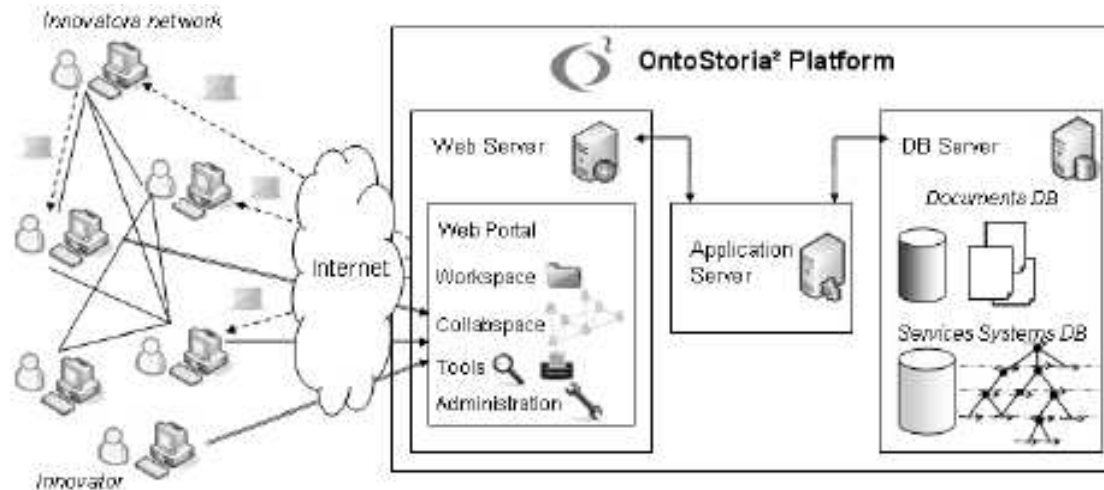
- Selection of a scenario to see its animation
- Possible modifications of the Service System elements
- Validation + generation of a deliverable



Example from the OnMap solution

OntoStoria² - Platform architecture

→ A web-based environment :



→ Objectives :

- Stimulating the opportunities research step
- Supporting the innovators' work

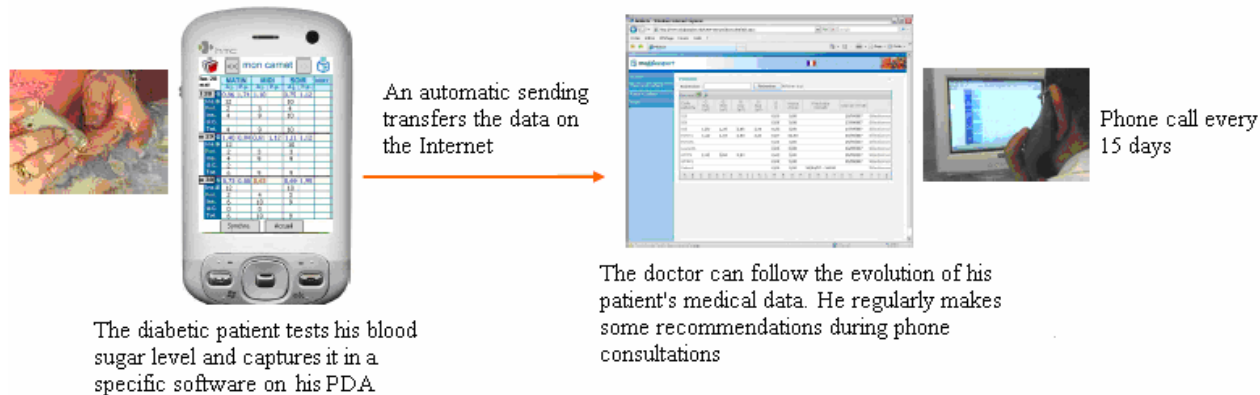
→ Implementation of the method : several modules

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First experiment - Case study

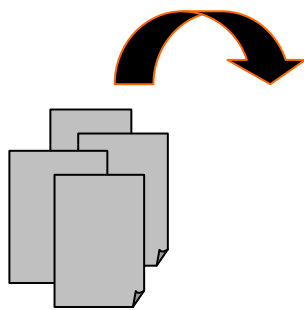
- e-Health = a key domain for the telecoms innovation :
- Remote monitoring of diabetic patients = an existing Service System



(Bugeaud & Soulier, 2009)

- Application of the OntoStoria² steps based on several existing documents

First experiment - Case study

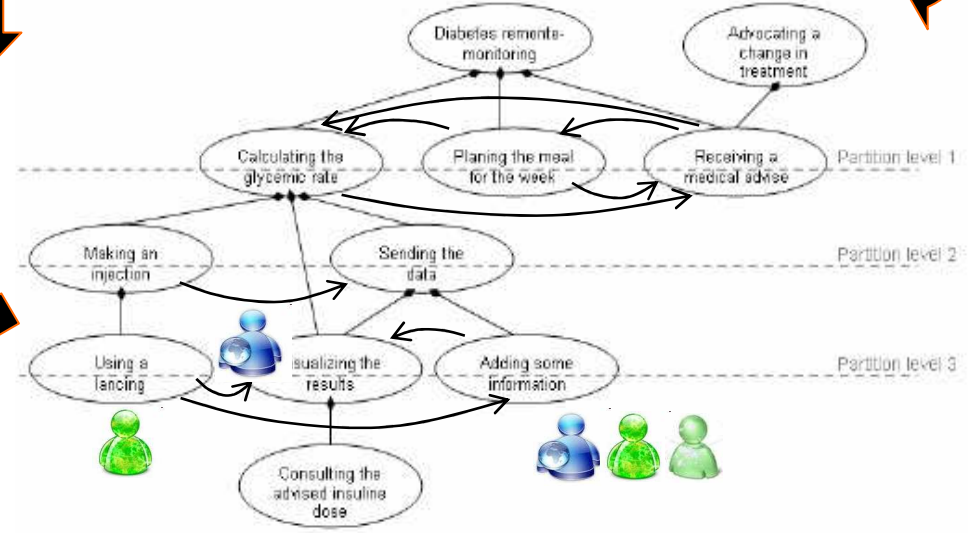
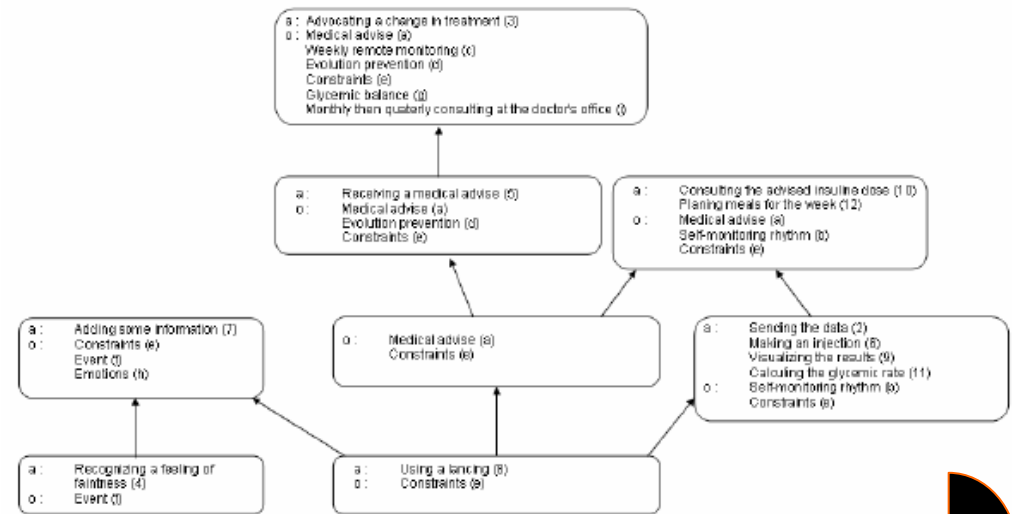


Sales brochure

Medical conf. présentation

...

The patient pricks himself the finger
The patient receives a medical advice...



First experiment - Evaluation within an innovators' group



→ Procedure :

- 6 telecom innovators
- 2 opportunities search sessions by phone
- 3 sub-evaluations...
 - Relevance of the Service System as a shared representation
 - Adequacy of the mereological and processual principles for the representation of dynamic phenomena
 - Usability of a simulation / animation

→ First results :

- Reduction of the disagreement between the innovators and emergence of ideas
- Improvement of the individual and collective representations of the service
- Effectiveness to imagine the real situation (“service universe” : context, interactions, etc.)

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Discussion

- Service System = useful for the convergence of the innovators' views

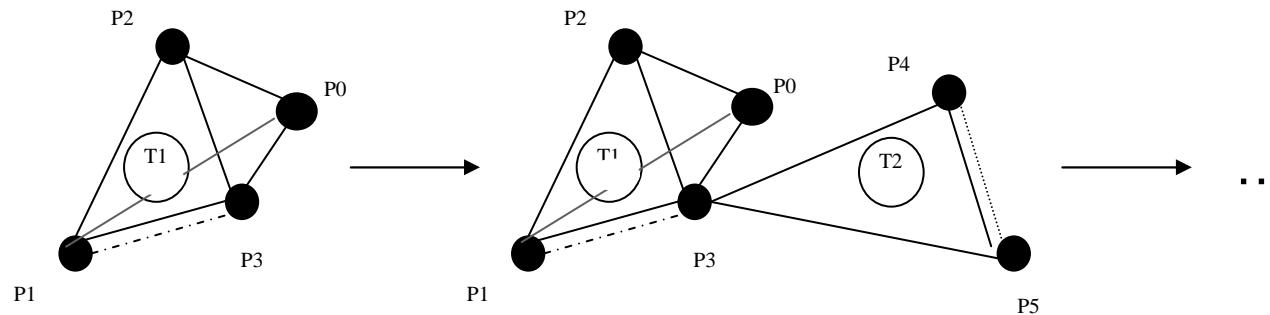
- An extended mereological ontology gives a possibility to :
 - represent the hierarchical structure of the involved “processual entities”
 - interpret the dependencies between them
 - imagine the emergence and evolution of the service and its communities

- Overall assessment of OntoStoria² = further publications

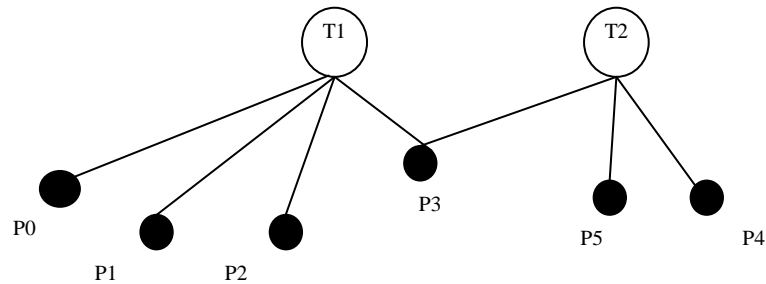
- Now we are :
 - Improving the model's axiomatization and calculation = towards an hypernetwork
 - Improving the transformation of selected scenes into animations
 - Preparing a larger scale experiment

Ongoing work

→ A Simplicial Hypernetwork :



→ Instead of a Mereological Ontology :



Thanks !

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