CaaS

Capability as a Service in digital enterprises

Stockholms universitet

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UNIVERSIDAD POLITECNICA DE VALENCIA

CROZ

everis an NTT DATA Company

freshtl

SIVAG

PT

Agenda

The general need for capability

Overview of the CaaS project

Overview of the application case at SIV AG

Overview of the development environment

Other work done

Reflection on project related challenges

Motivation:
context changes
businesses need to adapt

Nov 22, 2011 3:10pm

Groupon Deal Burns Small Bakery With Orders for 102,000 Cupcakes

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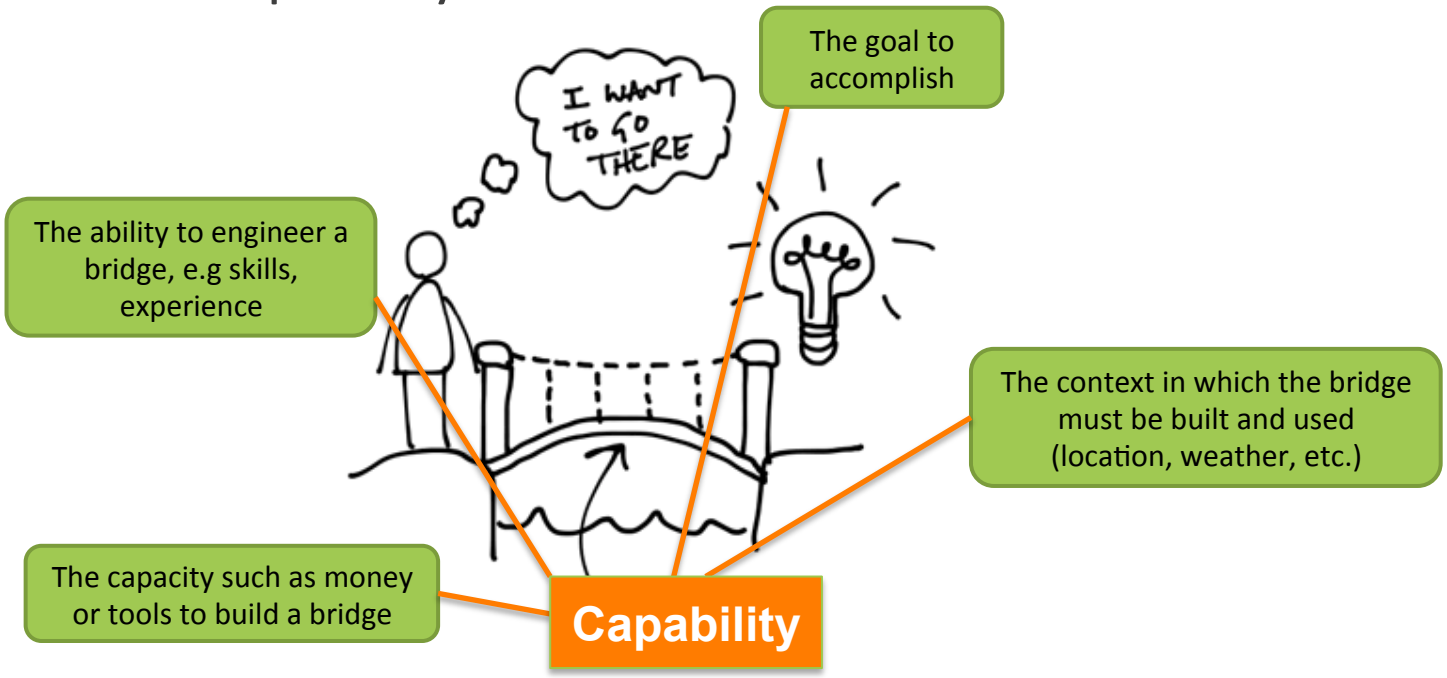
Capability as a Concept

- Enterprises must focus on their capabilities: *the ability and capacity that enables an enterprise to achieve a business goal in a certain operational context*
- What is a Capability?



Our Solution

- **Capability as a Service**
- We propose a novel paradigm supported by four cornerstones

Defined Best Enterprise Practices as Patterns

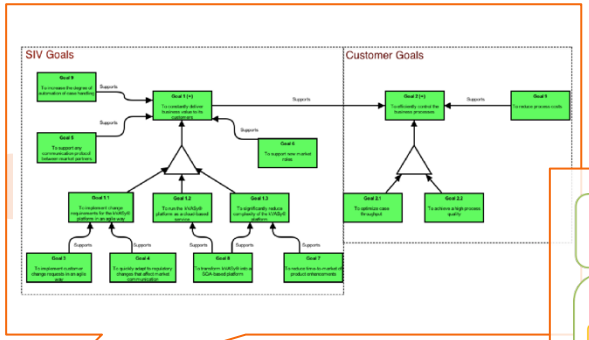
Capability-driven Development (CDD) Methodology

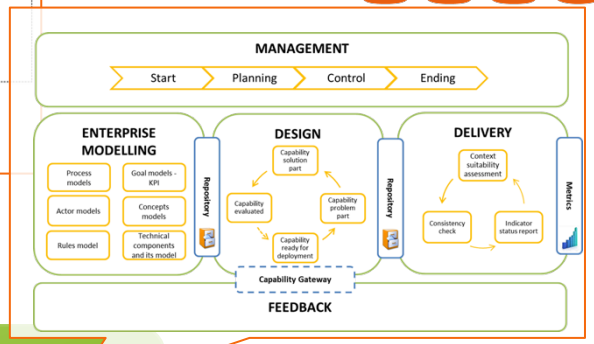
Capability Delivery Adjustments According to Context

Capability Design and Delivery Environment

The overal

Use case driven





WP2
Use case
(SIV)

WP1
Requirements

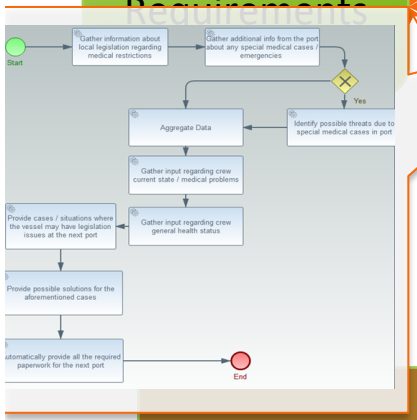
WP3
Use case
~~(FreshTL)~~

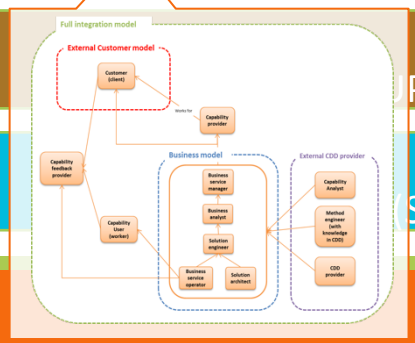
WP4
Use case
(Everis)

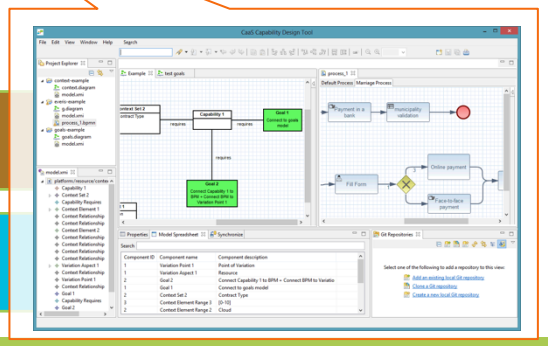
WP5
Methodology
(UR)

WP6
Environment
(Croz)

WP7
Exploitation
(Everis)







PVLC)

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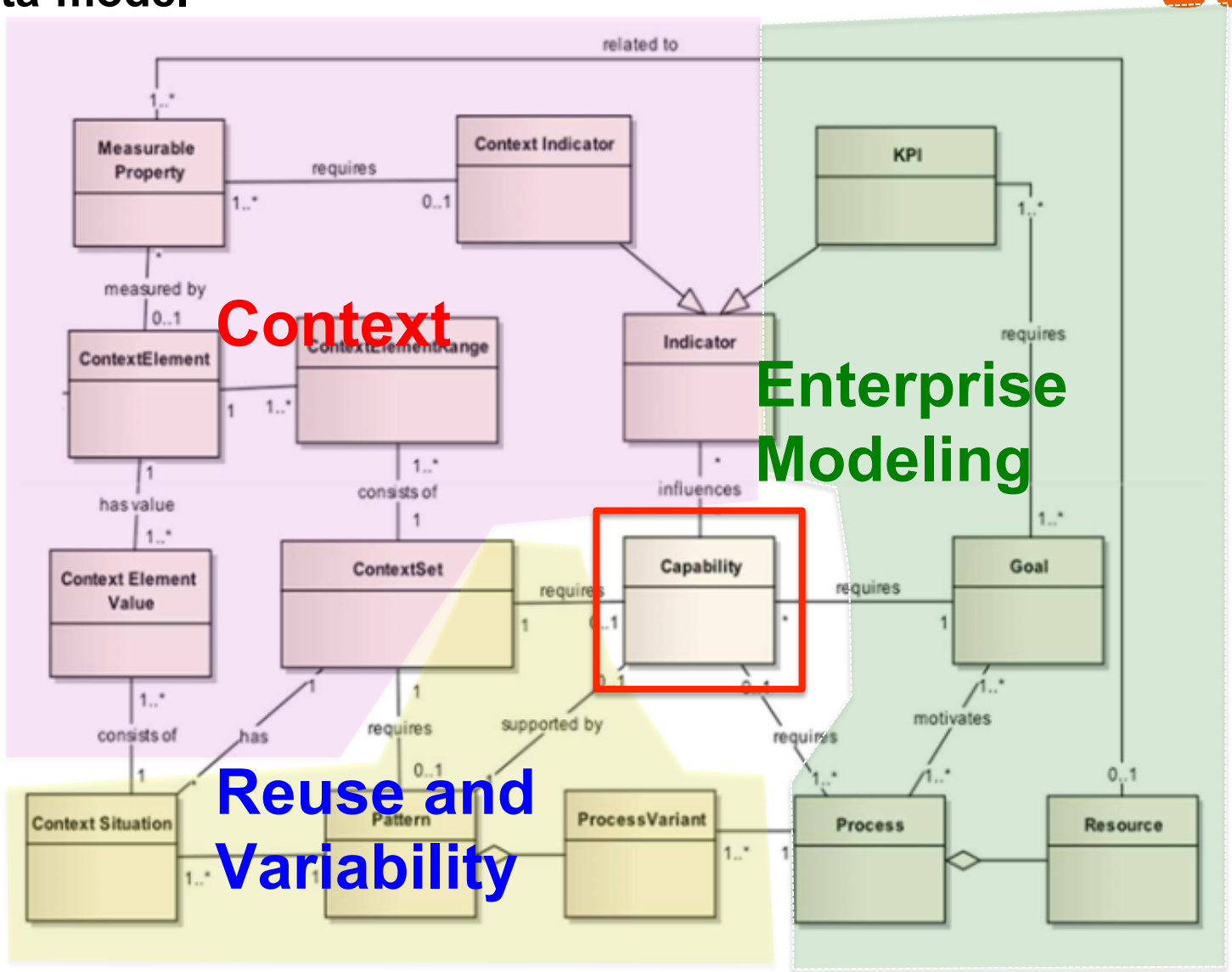
Key Concepts: Capability & Context

- *Capability* is an ability and capacity for a company to deliver value, either to customers or shareholders, right beneath the business strategy.
- *Context* refers to situational cognition; as such, it is used to describe the conditions of an entity.

- The company wants to *sell ice creams* as long *as it is sunny and the temperature is within a given range*.

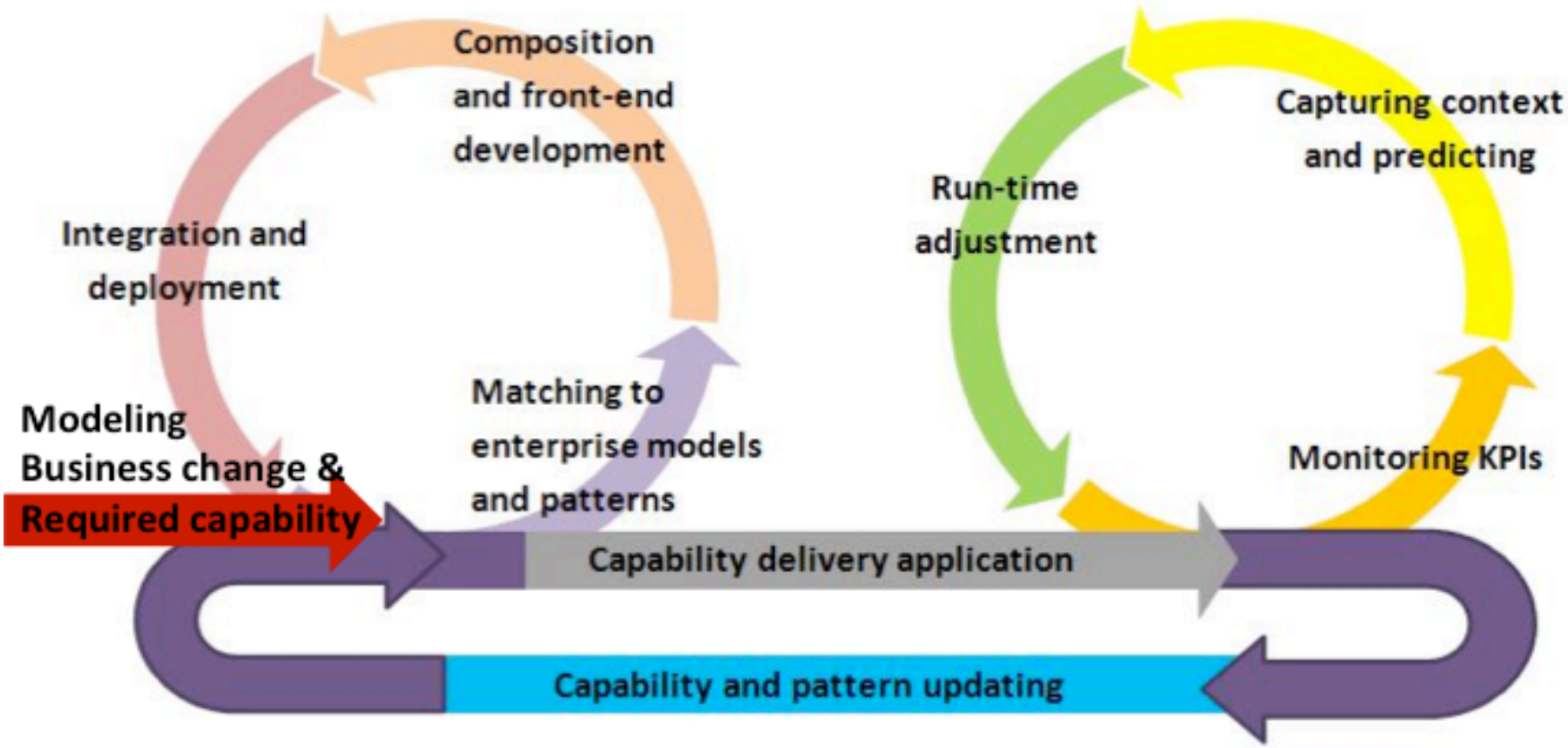
Capability Driven Development

- meta-model -



Capability Driven Development

- life-cycle process -



Capability Driven Development

life-cycle process, navigation and adjustment at run-time

Travel management dashboard

Trip #849-2014

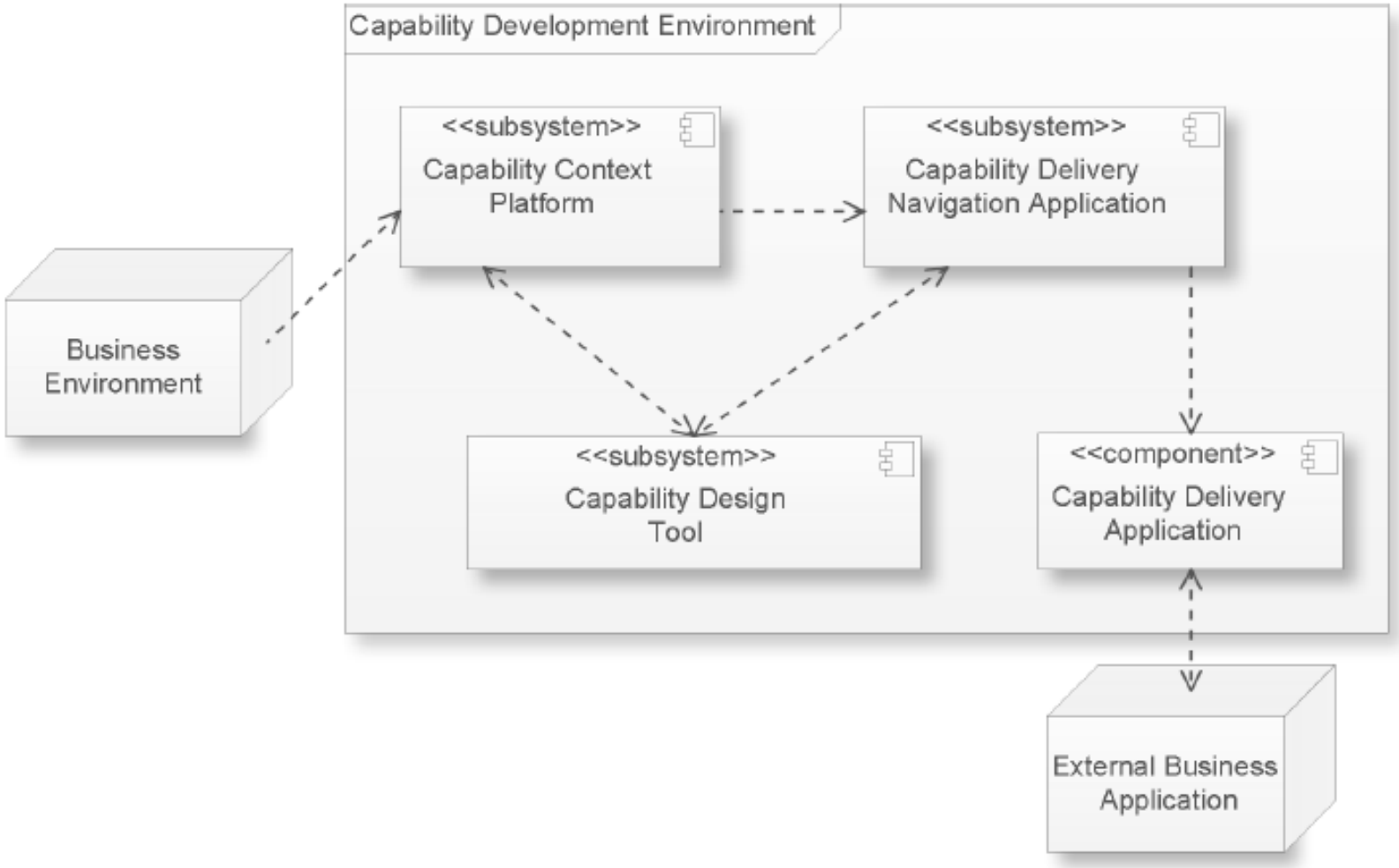
Current Context Situation

Travel conditions=Normal, Regulatory requirements=Comliant, Calendar=Significant conflict, Weather=Normal, Traffic=Low

KPI	Value	Adjustments
Total cost	650	Travel day earlier to reduce scheduling conflicts by 6 hours (click for more details)
Days late	0	
Accomodation cost	300	
Severity of scheduling conflicts	8	

Context indicators	Value	Patterns suggested
Hours scheduled	8	Apply Costs justification pattern to justify accomodation costs (click for more details)
Temperature	25	
Travel conditions	Normal	
Accomodation cost limit	200	

CDD Development Environment Architecture Overview



A Capability-oriented Requirements Engineering Process

Objective	Means
Support specification of concept-wide requirements inherited from EM, and of varying business situations; facilitate specification of patterns of capability delivery that are meant to be sufficiently general and reusable in long-term.	Apply the principles and the activities of the RE process to systematically collect and manage the requirements.
Integrate EM and MDD to overcome inconsistencies between the final software application and the requirements for capability.	Use a model-oriented approach and an integrated tool platform for documenting the requirements as well as for application development.
Facilitate rapid application development and efficient support for requirements change.	Apply incremental and iterative RE, as well as agile practices.

Elicitation

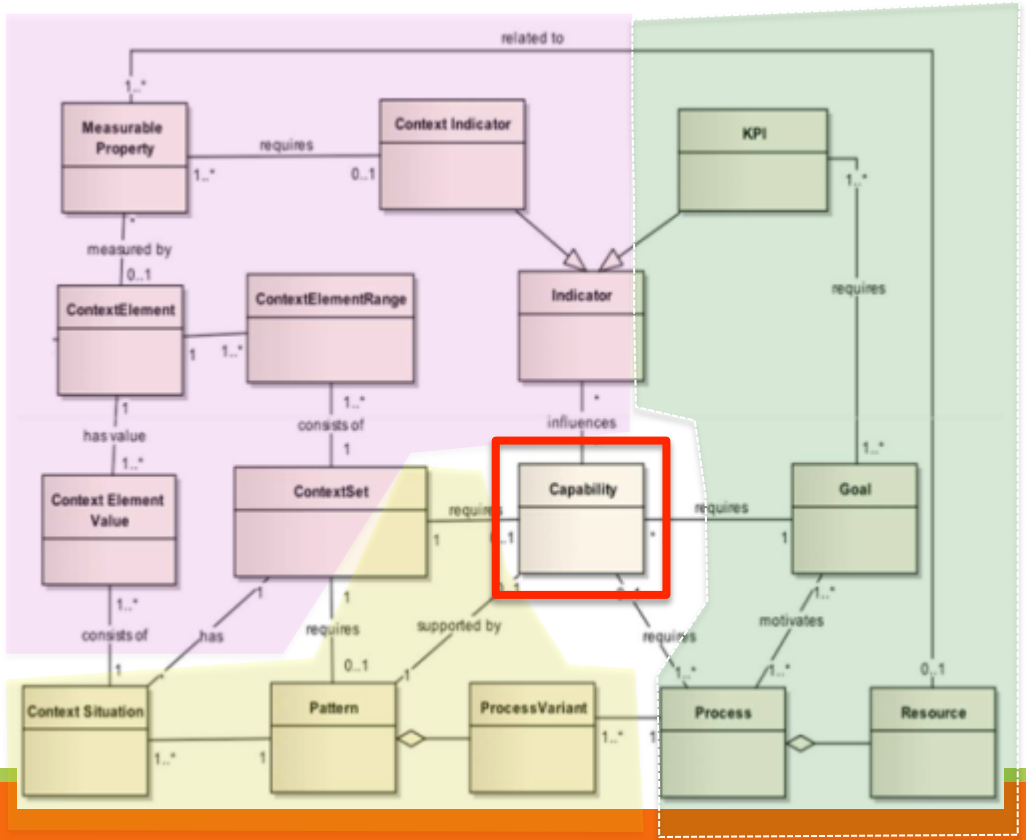
Identification of relevant stakeholders:

Stakeholder	Responsibility
Business analyst	Identify new, or change/improve existing enterprise sub-models, i.e. goals, processes, resources, and KPIs.
Context analyst	Identify the context-sub model.
Requirements engineer	Has the knowledge of CDD
Customer	Has benefits of delivered capabilities
Capability User	Is directly involved in the interactions of a delivered capability

Elicitation

Capability elicitation, starting perspective:

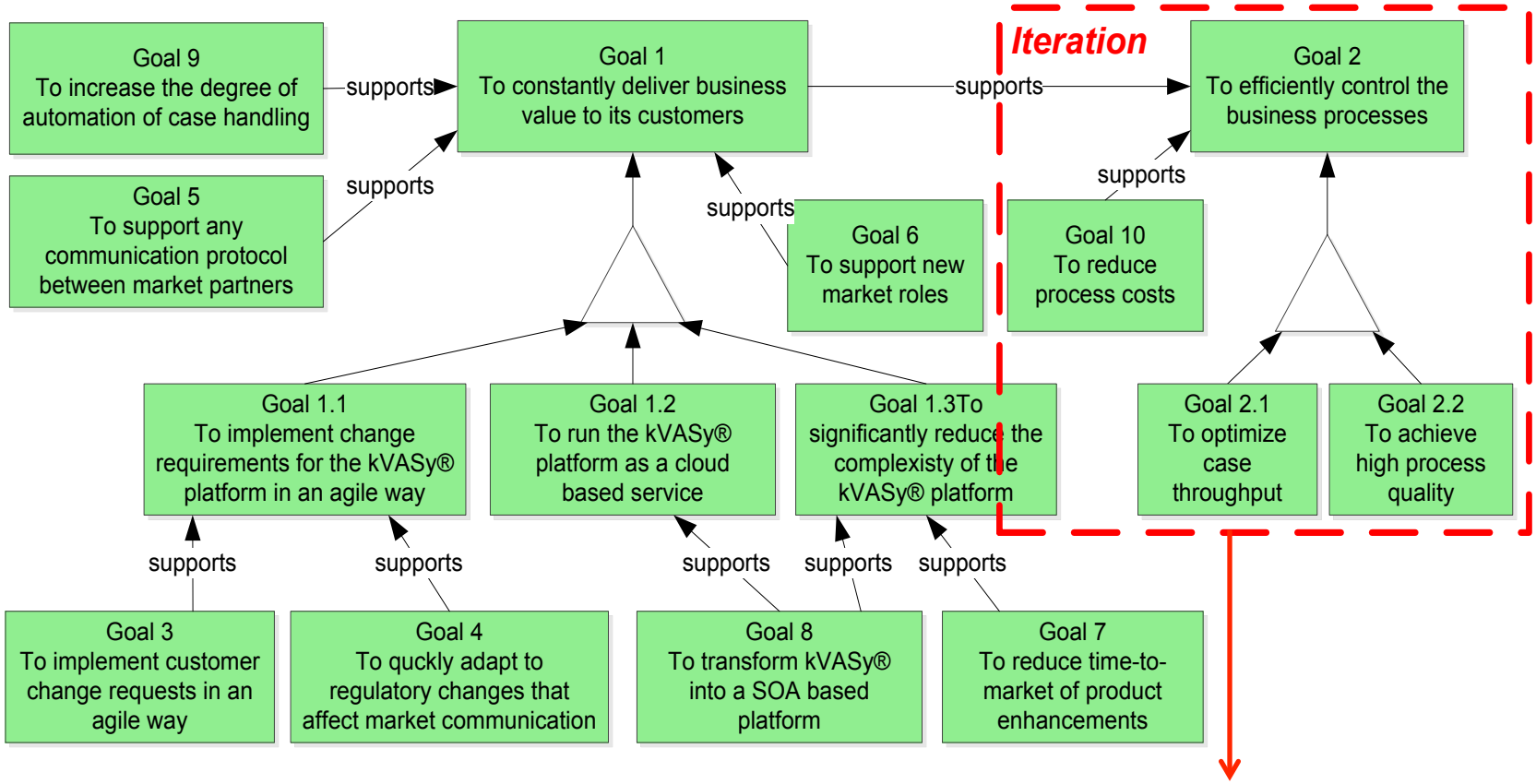
- *Goal-first*: business strategy
- *Service-first* customer needs
- *Context-first:* business conditions

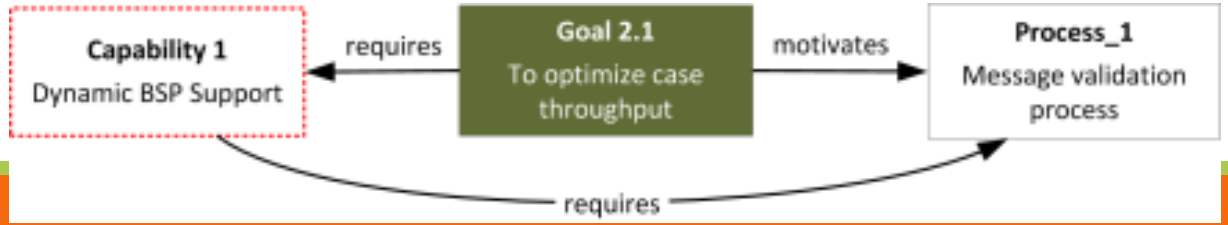


Elicitation – A Case at SIV

- The CaaS partner SIV is a Germany-based independent software vendor (ISV) and a business process outsourcing (BPO) provider for the utilities industry.
- SIV has developed a domain-specific ERP platform kVASy® that supports all relevant value-added processes of market players.
- All BPO services offered to SIV's customers – mostly grid access providers and balance suppliers – are based on the functionalities of kVASy®.
- SIV's business goal is to deliver a maximum of business value to its customers by to combining best practice business processes with compliance to the market's ever changing business rules and regulatory requirements.

Elicitation – A Case at SIV

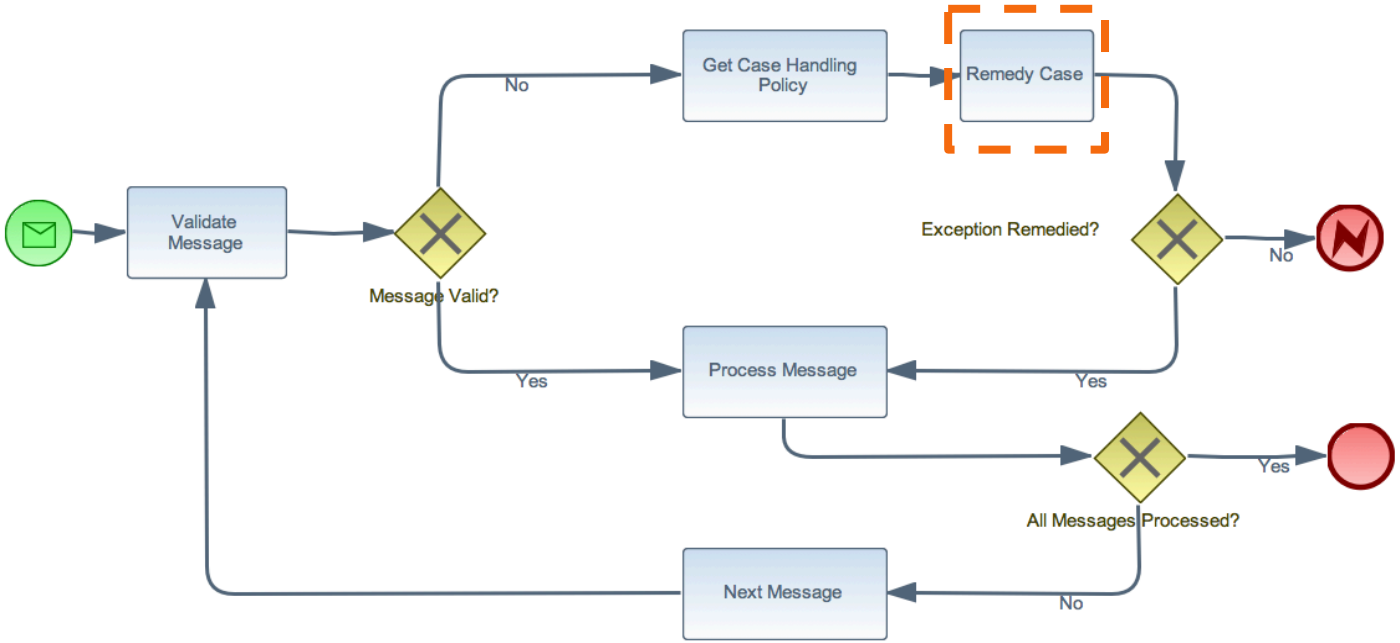




Elicitation – A Case at SIV

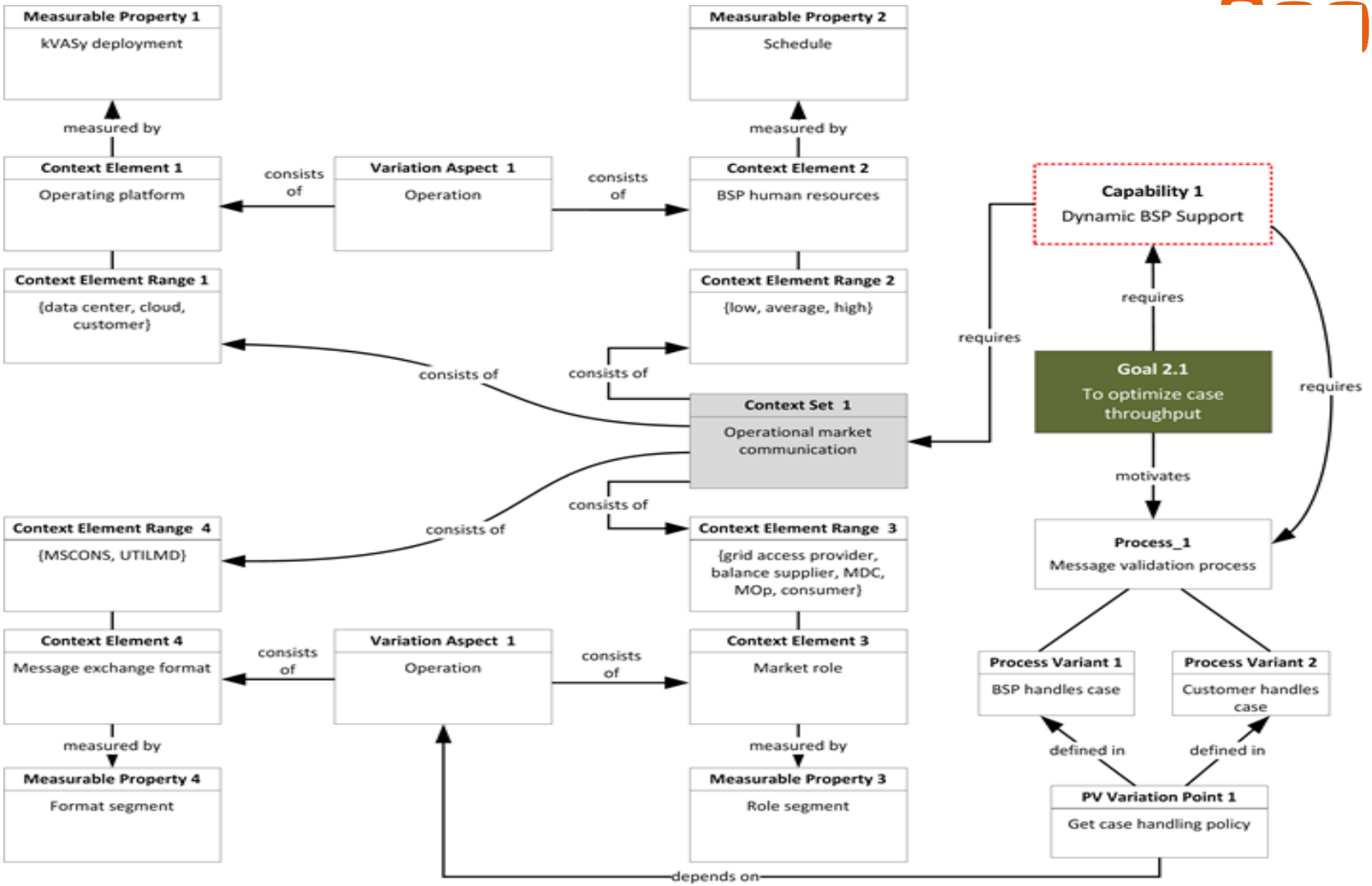
"Message Validation" business process:

…the recipient is supposed to validate each message (such as "energy consumption data") against the underlying message specification. The sender is to be notified about any invalid message within a deadline specified by the regulatory authority



Given the large number of messages to be processed, there are usually many concurrent cases that need some clearing. Hence, the size of the backlog can grow considerably over time leading to missed deadlines and/or overtime work. Thus - customer's workload, the current backlog size, message type, exception types, and other, are represented by (different) context models, and (different) capabilities are elicited to handle those contexts.

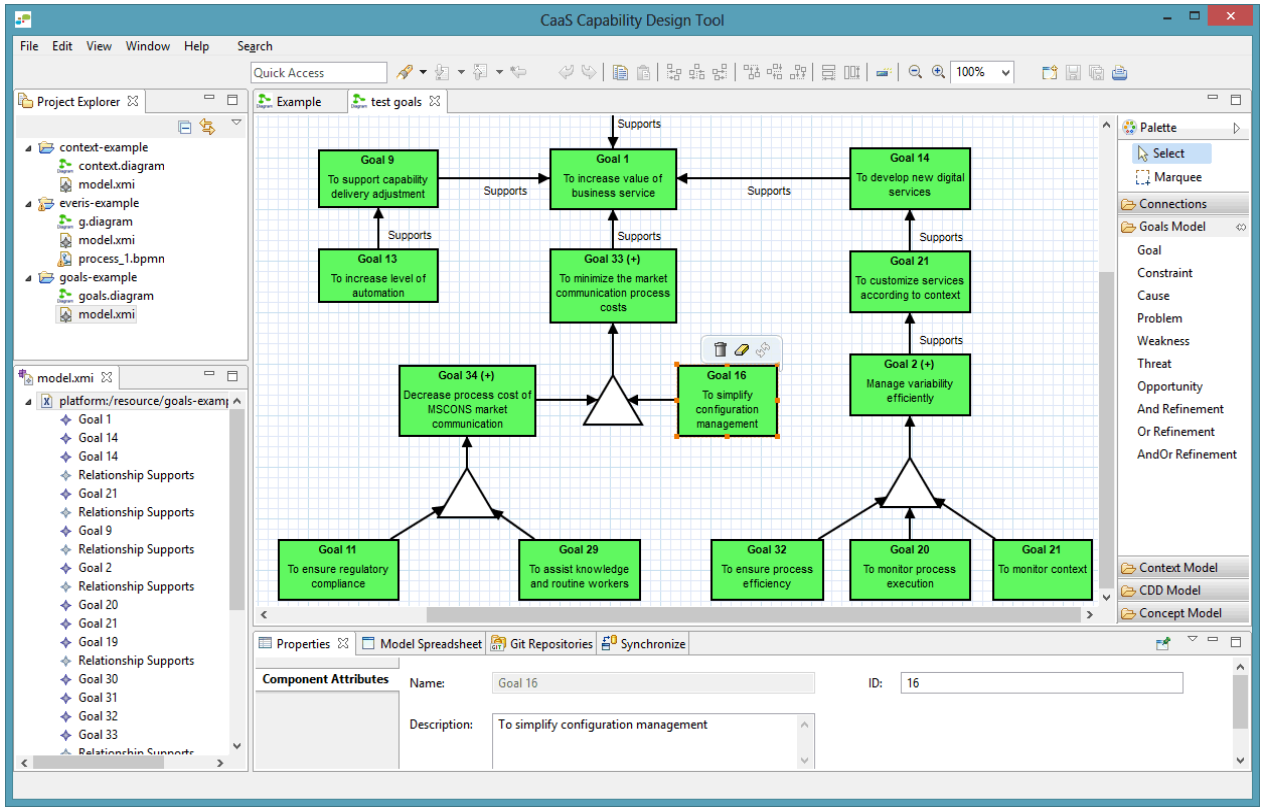
Elicitation – A case at SIV



Depending on the concrete context situation, the task "Remedy case" can be dynamically routed to the external business service provider (BSP), or left with the customer.

Documentation

- Model-oriented, with natural language for annotations
- Open to different modeling languages
- Intra- and inter-model links can be defined for traceability



Analysis, Validation, Change Management

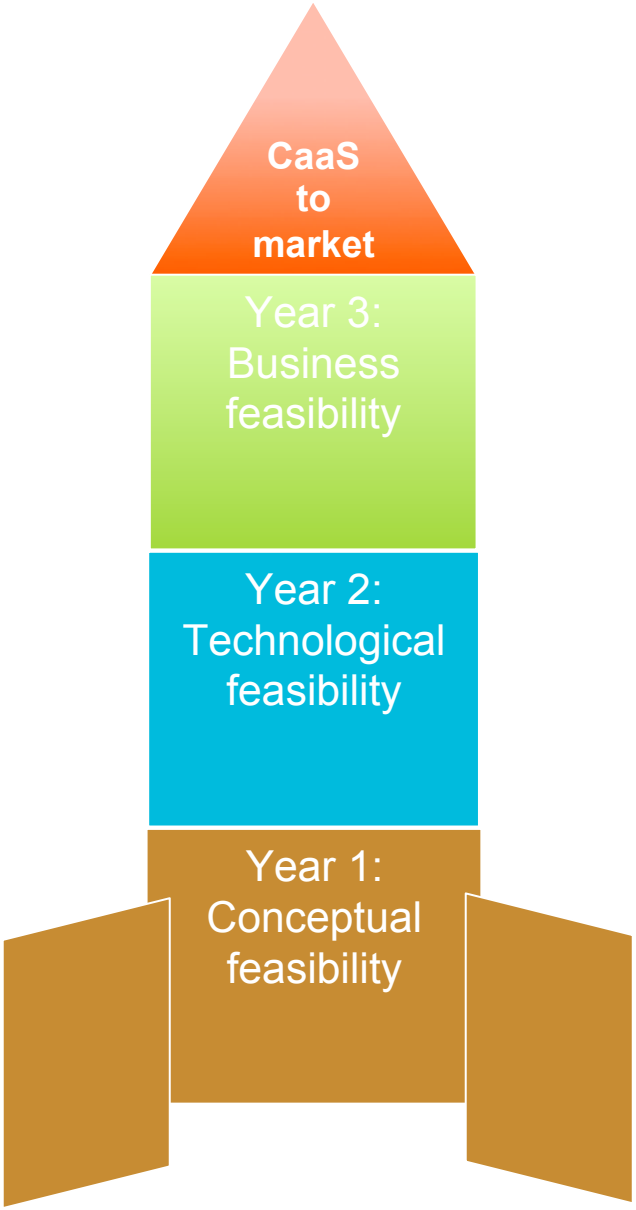
- Analysis: Necessity, Feasability, Redundancy, Consistency
- Validation: Group-review meetings (per iteration), expert reviewing.
- Change Management: act upon a change.

Summary of experiences

- The main objective of the process is to facilitate the specification for capability requirements in an integrated way following the multi-perspective views defined in the CMM to facilitate further application development.

- From business goals, services, or from relevant business contexts. In any of the three strategies, both the functionality and the quality aspects of capability are captured, where the first are dictated by the CM, and latter by the setting of the goals and KPIs.

Summary


CaaS
to
market
Year 3:
Business
feasibility
Year 2:
Technological
feasibility
Year 1:
Conceptual
feasibility