



Value-based business-IT ALignment

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Assessing Economic and Technical Feasibility in Networked Value Constellations

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19-01-2007

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Outline

- What is the problem?
 - Issues in MIS research
- How do we deal with it?
 - Model-driven approach
 - e³value and UML
- Why should it solve the problem?
 - Benefits, gaps to fill in
- Small example for illustration
- Real-life case study for validation
- Conclusions, further thoughts



Issues in IS Management

- Networked value constellations
 - Joint work (bundle of suppliers) to satisfy complex, IT-based customer (business) need (i.e. Dell)
 - Different business entities with different requirements
- Design of networked value constellations
 - Interplay exists among business and IT engineering
 - Strategic Alignment Framework (Henderson, Venkatraman, 1993, *IBM Systems Journal*)
- Problems to deal with
 - Different domains in decision making
 - No constructional (operational) support



Focus

Design of Networked Value Constellation

- Operational support

Feasibility

- Economic = Value perspective
 - Focus on profit and substantial economical effects (i.e. expenses, investments)
- Technological = Information system perspective
 - To find an acceptable IT-driven solution to put the constellation into operation



Research Idea

- Constructional solution based on *conceptual* models
 - To detect inconsistency
 - To provide traceability of decisions taken
 - To achieve shared understanding among stakeholders
 - Exploratory – no heavy formalization
- Based on specialized ontologies (Borst, 1997)
 - Conceptualization for knowledge representation
 - Applied in business domain
- Automated reasoning becomes possible

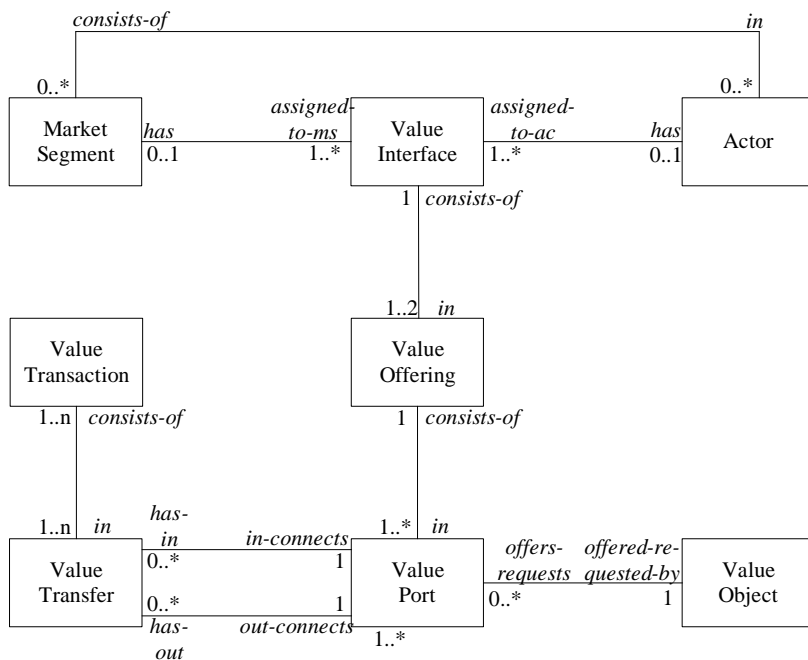
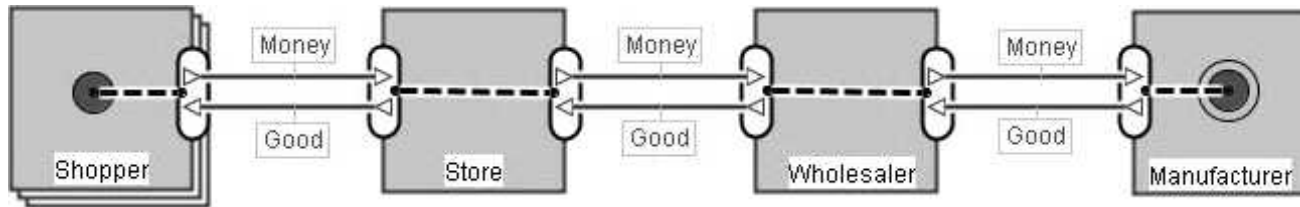


e³value

- Value-based modeling: *e³value* method (Gordijn, Akkermans (2003, *REJ*))
 - Demonstrates the joint value proposition, value distribution and allocation
 - Notion of *value activity*: combines different perspectives (IS, process) from an economic value point of view
 - Cash-flow analysis built on value objects (profitability sheets)



e³-value in Nutshell



	A	B	C	D	E	F
1	Value Interface	Value Port	Value Exchange	Occurrences	Valuation	Economic Value
2	Buy store	total for Buy store		10000		-900000
3		Good	(all connected)	10000	0	0
4		Payment	Money	10000	90	-900000
5	Sell store	total for Sell store		10000		1000000
6		Payment	Money	10000	100	1000000
7		Good	(all connected)	10000	0	0
8						
9	total for actor			20000	0	100000
10						



Extending e³value

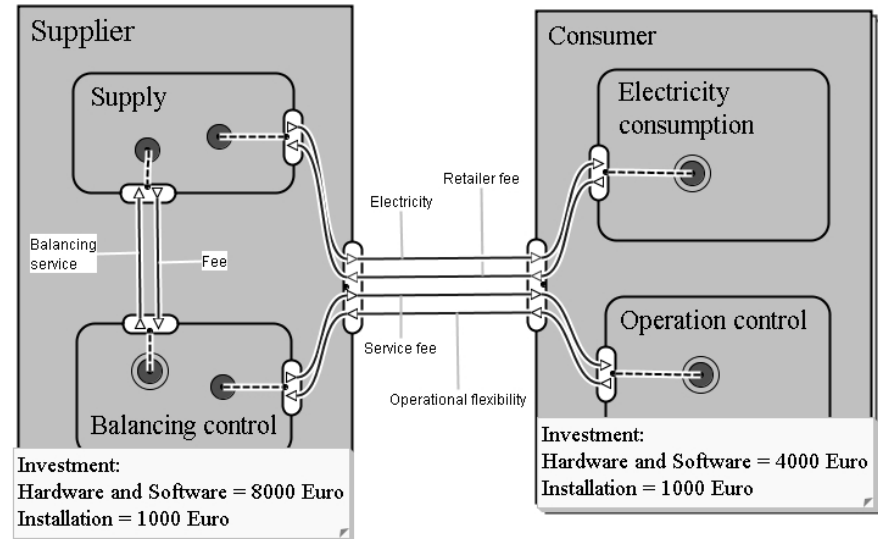
- Cost considerations evolve over time
- Only object-based evaluation is not sufficient
 - What about the value activities?
- e³value time series analysis
 - Different time frames evaluated sequentially
- Useful for purposes
 - ROI becomes possible (DNCF)



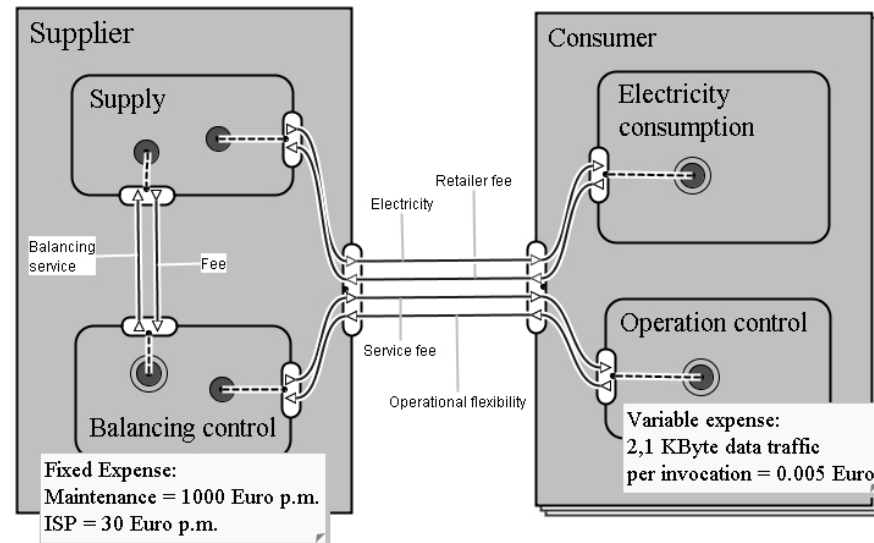
Economic Value Perspective

Small example taken from a real-life study in the electricity domain

Timeframe 0 (investment):



Timeframe X (operation):





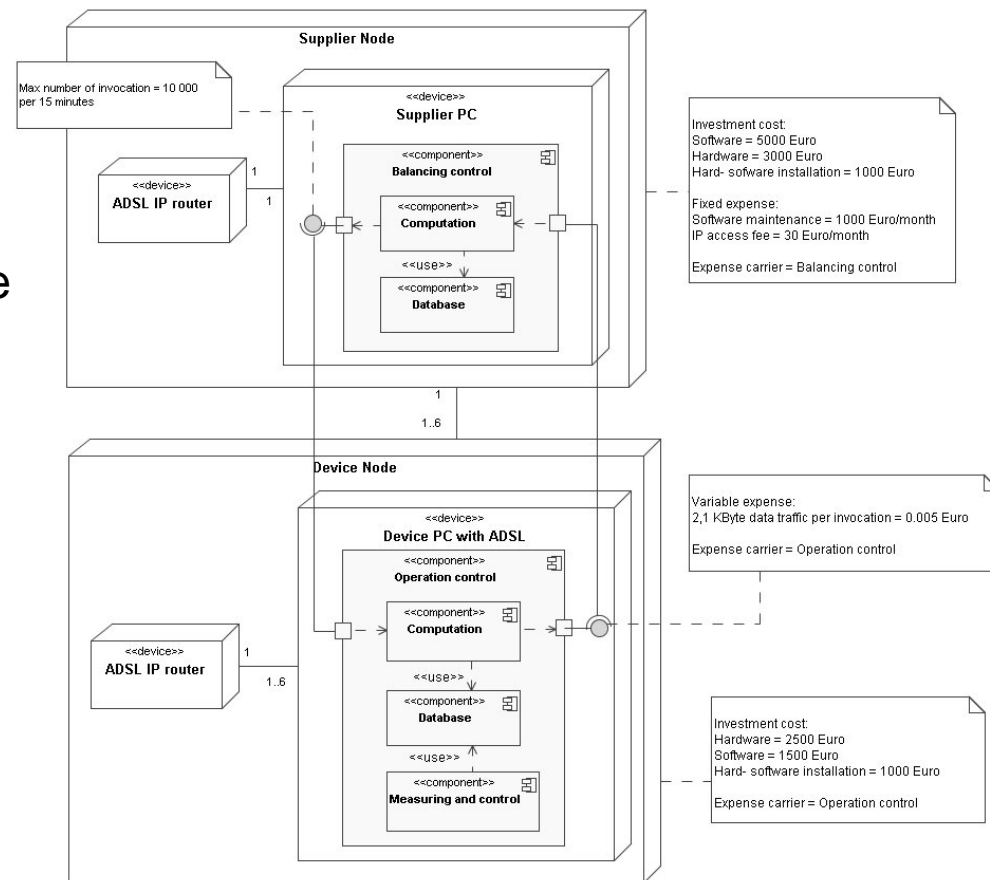
Economic Feasibility with e³value

- Construction of profitability sheets:
 - Evaluation of value objects = valuation functions
 - Evaluation of value activities – how does it happen?
- Further investigation is needed: UML
 - Construction of UML model
 - Information (financial attributes) gained from UML is fed into e³value



Information Systems Perspective

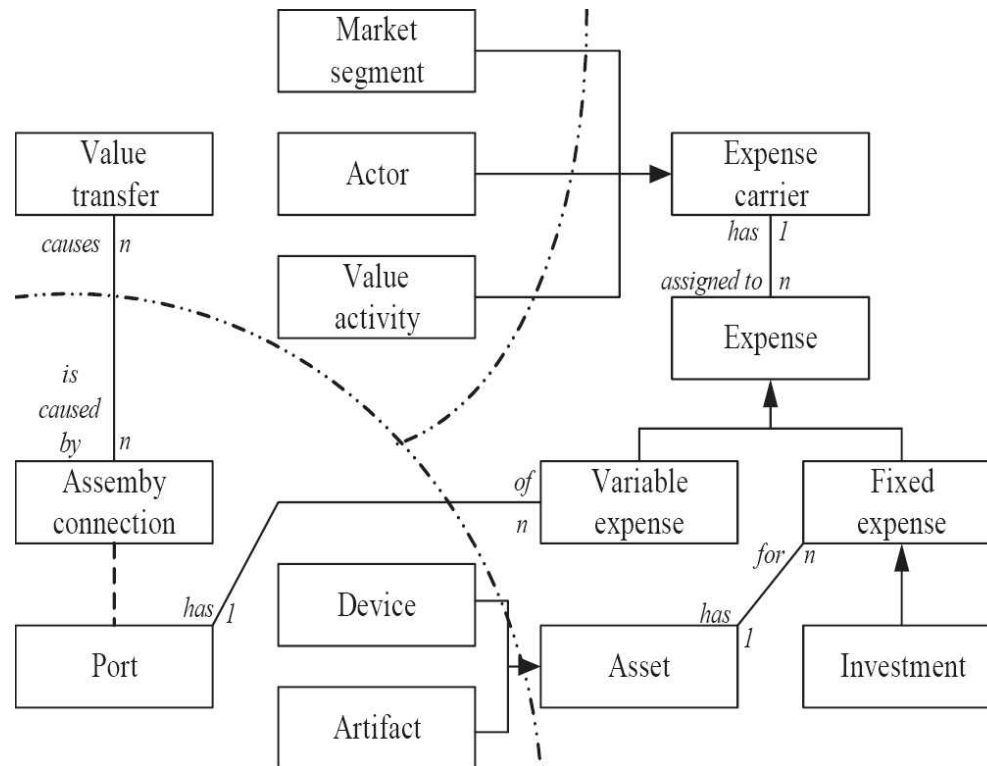
- Value activities = UML components
- Financial attributes and technical constraints
- Important construct: expense carrier





Initial Conceptual Model

Bridging e³value and UML modeling concepts to address economic feasibility



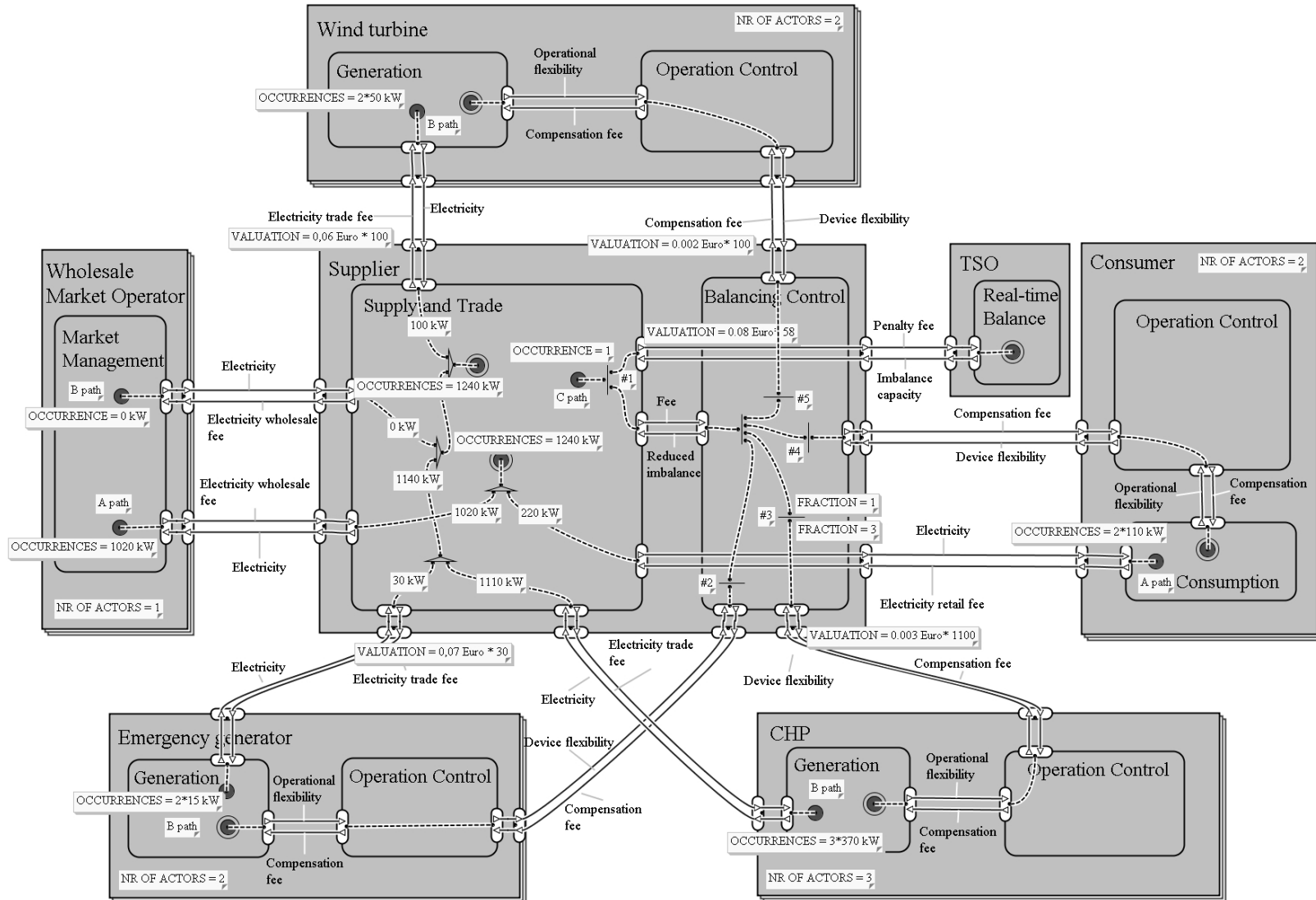


Technical Feasibility

- UML = structure of underlying IT architecture
 - Attributes: technical constraints
- Value model = structure of value constellation
 - Attributes: dimension of market segments, occurrences
- Scalability
 - Important concept of technical feasibility
 - Example: size of market segment and occurrences vs. max nr of invocations

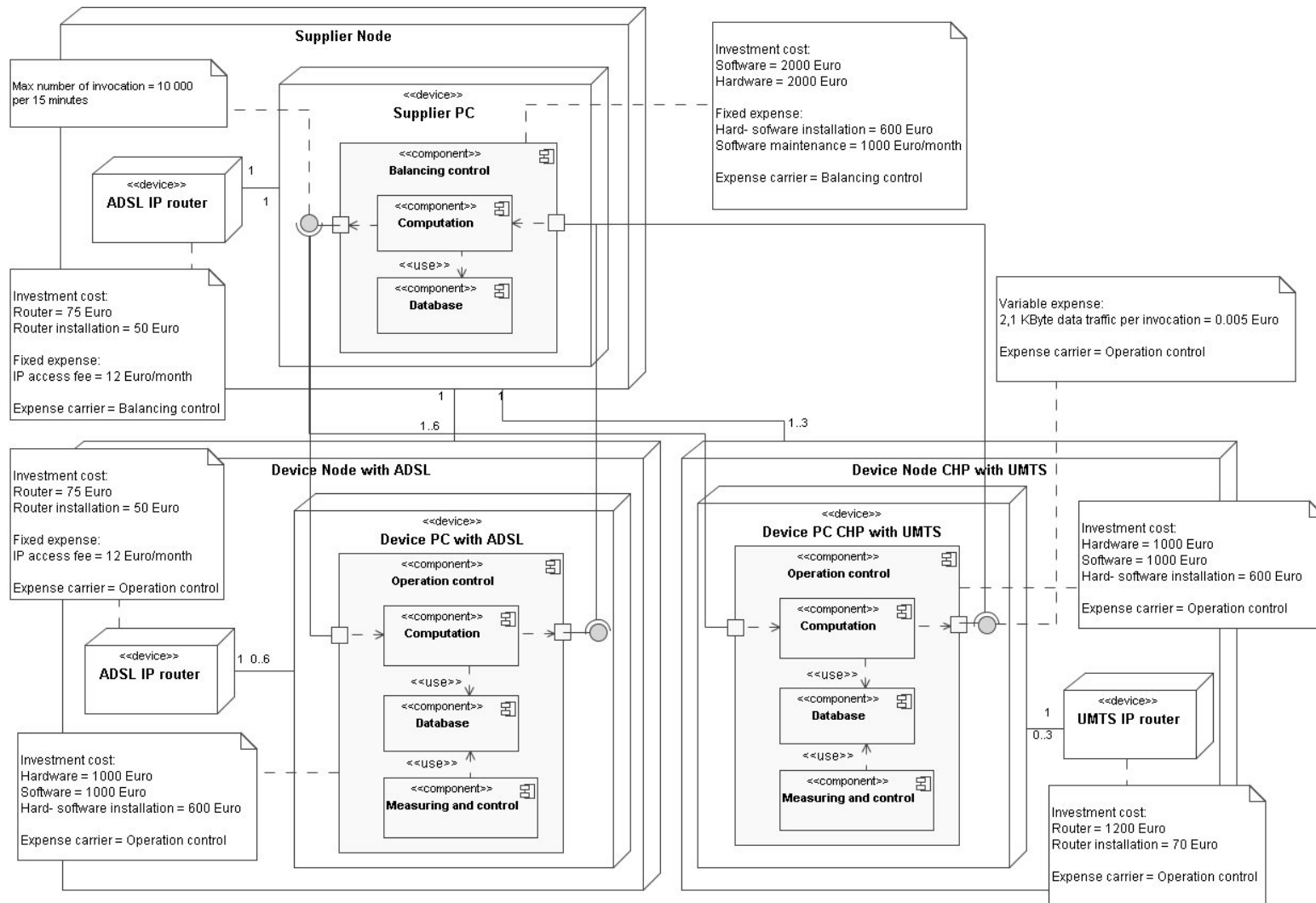


Real-life Case Study I





Real-life Case Study II





Conclusion and Further Research

- Model-based analysis as first step forward seems helpful
- Provides operationalized solution
- Analysis of IT and value perspective result in important design questions

- Elaborating on other aspects of technical feasibility – would the initial approach (structure diagram + value model) be successful?
- Process view - how would it help?
- Risk: another potential attribute of UML model constraints
 - How would it influence our reasoning over feasibility?



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