

eService Science in a Networked World

From Semantics to Pragmatics



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Innovation and eService Networks

- The *Virtual ISP* challenge:
 - Build an ISP that *precisely* satisfies your *customer needs* (e.g. Internet access plus an email in-box, but *not* web-space)
 - Provide a *service bundle* that a *single provider* never could offer by *himself* (e.g. access, email, calendar, VoIP, IPTV, ...)
- For a virtual ISP, we need to ...
 - Provision the multi-provider service bundle (IP access, email box, VoIP)
 - Search for an ad-hoc network of service providers
 - Elicit *customer needs* (email + voice communication)
 - ... *all automatically*
- Note: eServices are *not equal* to Web services
 - eServices as in *eCommerce* versus web services as in cross enterprise *Interoperability*



So, What Are Innovative Service Networks?

- *Innovative eServices*:
 - *Services*: Commercial deeds and activities of a mostly *intangible* nature
 - *eServices*: Those services in which ICT plays a dominant supporting or enabling role
 - *Innovative eServices*: Those services *perceived* as new by the market (old-school e-Commerce is done)
- *Networks of businesses*:
 - Enterprises and final customers that co-produce economic value. Examples: Dell, Cisco, IKEA, News papers, IPR Societies, Energy networks, ...
- Note: eServices are *not equal* to Web services
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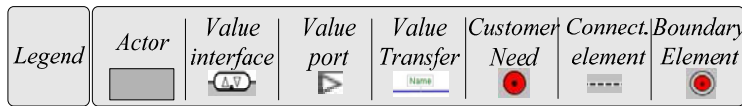
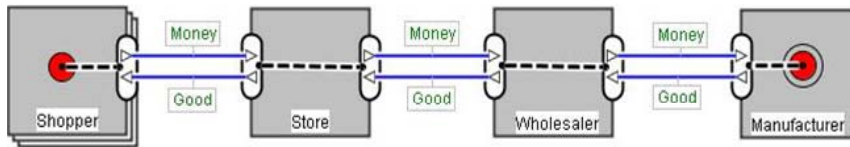


Focus on Pragmatics: The *Business Value*

- “eService networks require thorough engineering & understanding of the *business value*, or the *pragmatics* of these systems”
 - *Use and value of technology* rather than technology itself
- Pragmatics are found in the *context* of eServices
 - Final customer: Consumer need, want, demand and *valuable* consequences: *Why would a customer buy a service?*
 - Enterprises: Cost efficient valuable resources to produce the service
 - Both: *Reciprocal values* for the supplier (often money)
- *Foundations* in Marketing, Axiology, Business Strategy, Economics, but *conceptualization and computational reasoning* cf. Computer Science

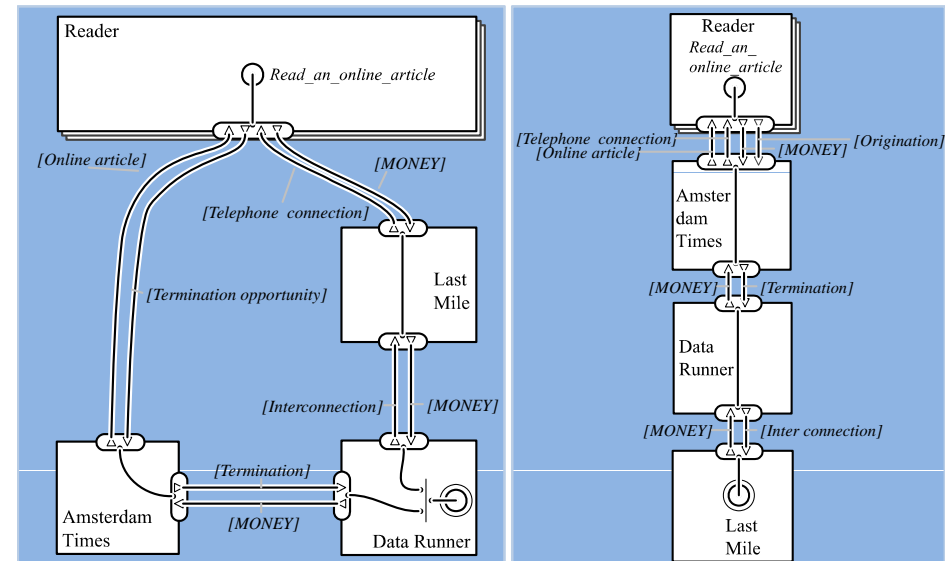


Business Value: Hello World in the *e³value* ontology



	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						

“Free” online news in the *e³value* ontology An e-Business Model



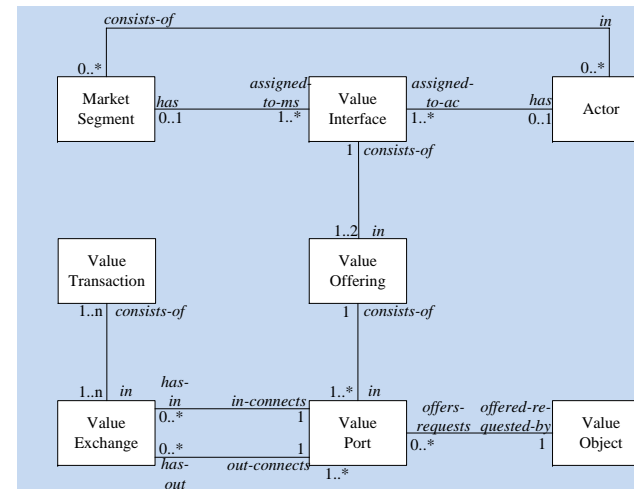
The *e³value* Ontology: A Tool for Representing, Modeling and Analyzing Networked Value Constellations

Business Models for Distributed Energy Resources

	Profit			
Scenarios	Amst. Times	Last Mile	Data Runner	Hoster
<i>Null scenario</i>	164,400	102,000	133,800	8,000
Sensitivity Analysis				
Forecast >> Actual	-28,560	10,200	26,680	8,000
Decrease in interconnection	164,400	346,800	-8,600	8,000
Decrease in revenue sharing	-19,200	102,000	205,600	8,000

www.e3value.com

The *e³value* Ontology: Founded in Axiology & Business Strategy, Using a Computer Science way-of-modeling



- Core ontology in UML and Protégé.
- RDF/S & Java implementation available
- 2008, industrial tool support for *e³value* will be developed by BizzDesign as part of Architect

e³family of Ontologies: Pragmatics for eService Networks

- Focus is on the *business value* perspective; the context

e³family - Designing networked constellations

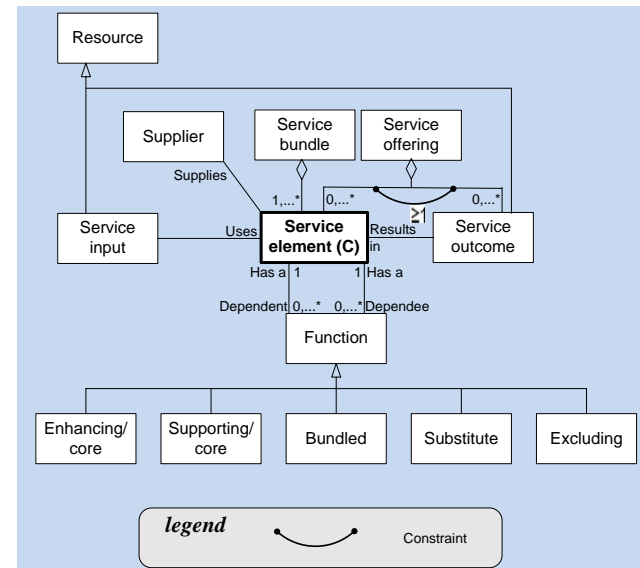
e³alignment Consistency between perspectives Business - IT alignment	e³strategy Correct strategic positioning Consistent business strategies	e³domain BUSMOD for the electricity power industry
	e³value Long term economic sustainability Economic reciprocity	
	e³service Customer need - service matching Service bundling	
	e³control Opportunistic behaviour Inter-organizational controls	

evalue™

- Other examples of context oriented research in IS:
 - Problem framing
 - i* / Tropos / KAOS goal modeling



e³service: Matching & Bundling



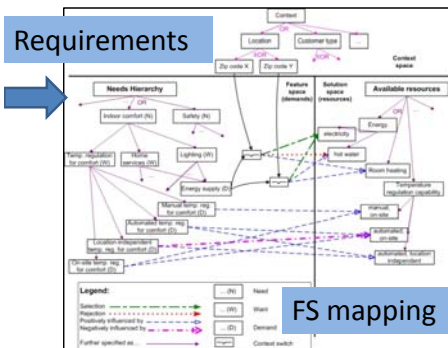
With Ziv Baida (EU-Obelix, BSIK / Freeband) and Sybren de Kinderen (NWO/Jacquard/VITAL)

Aim:

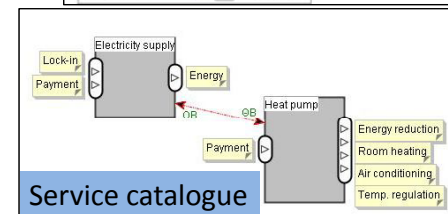
- Service need / catalogue matching on the *value level*
- Bundling analysis



Example: e³service

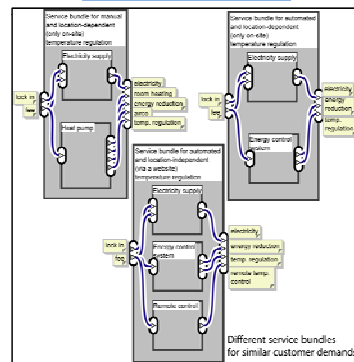


FS mapping



Service catalogue

Service bundle



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- RDF/S & Java implementation available



e³service:

Care for Dementia Patients and Family

The *e³*family ontologies are Used in Real Life Projects ...



Pragmatics in eService Networks *Business Value is Key*



"Business Modeling for the CxO"

Henry Peyret, Forrester Research

August 21, 2007

"Academic research on high-level business modeling.

The Vrije Universiteit in Amsterdam has developed a methodology — *e³value* — along with models and a simulation tool to calculate economic value across enterprises. This is particularly useful for validating new business models for networked enterprises — such as those in the music industry, in the deregulated European energy sector, or in the telecom industry — where firms need to explore revenue-sharing providers."

More information: www.e3value.com

