



A Business Modelling Framework for Mobile Grid Technology

IST Mobile Summit 2006

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Agenda

1. The Starting point
 1. Current Telecommunication Providers' Value Chain
 2. Mobile Grid Technology in the Akogrimo Project
2. The Challenge: Disintermediation of Established Value Chains
3. The Approach
 1. Reintermediation Prediction by means of Economic Theory
 2. Operationalisation by Business Model Engineering
 1. Strategic Considerations
 2. Customer Orientation
 3. Service Orientation
 4. Supply Chain Perspective
4. Lessons Learned and Next Steps



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Current Telecommunication Providers' Value Chain

Component Producer	Subsystem Producer	Network Systems Producer	End Device Producer	Telco Network Operator	Telco Service Provider	Application Provider
<ul style="list-style-type: none"> Semi-conductors Optical fibres Copper cables Modular packaging systems Electronic components Electronic displays Batteries 	<ul style="list-style-type: none"> Electric amplifiers Optical amplifiers Power supply Multiplexers Routers Software modules Air conditioning technology Computers 	<ul style="list-style-type: none"> Switches Billing systems Transmission systems Network management Systems Mobile network systems 	<ul style="list-style-type: none"> Telephones Fax machines Modems Answering machines xDSL splitters Least cost routers PC cards Mobile phones Television/radio receivers 	<ul style="list-style-type: none"> Intermediary grid-bound speech telephone networks Intermediary mobile phone networks IP networks Further data networks Cable distribution Networks (TV/radio) 	<ul style="list-style-type: none"> Network-leveled basic services (e. g. telephone connection) Network-leveled added value services (e. g. voice box, phone call forwarding) Application-leveled added value services (e. g. video on demand, Web hosting, sectoral data exchange) 	<ul style="list-style-type: none"> Search engines Helpdesk systems (e. g. timetables) finance applications (e. g. Trade in Securities) Administration applications (e. g. applicant management) Book entry systems Online Shops/Markets
<ul style="list-style-type: none"> Corning Data Modul Infineon Toshiba 	<ul style="list-style-type: none"> Ciena Cisco Juniper Siemens 	<ul style="list-style-type: none"> Alcatel Ericsson Nortel Siemens 	<ul style="list-style-type: none"> Motorola Nokia Philipps Samsung 	<ul style="list-style-type: none"> BT Ignite Deutsche Telekom Level3 Vodafone/Arcor 	<ul style="list-style-type: none"> Debitel Deutsche Telekom Mox Telecom Schlund 	<ul style="list-style-type: none"> Amazon ebay Lufthansa Yahoo!



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[Gerp2004]

Akogrimo Overview

- Realize a layered Next Generation Grid middleware
 - architecture and*
 - reference implementation*
 - enabling cross-layer co-operation from network through Grid up to the application layer*
 - for a large number of nomadic and mobile users*
- Demonstrate the capabilities with *challenging applications* and real users
- Develop Elaborated *Business Models* for this new platform
- Provide *Supporting Tools* for developers

Concepts, patterns, services

Exploit e.g. the Network Identity, Location, Operator Contracts, ...

Design for

proof the

Ensure that the framework offers

Basis for Technology Providers and Consultants from the consortium

Make the Grid *the* service prov.



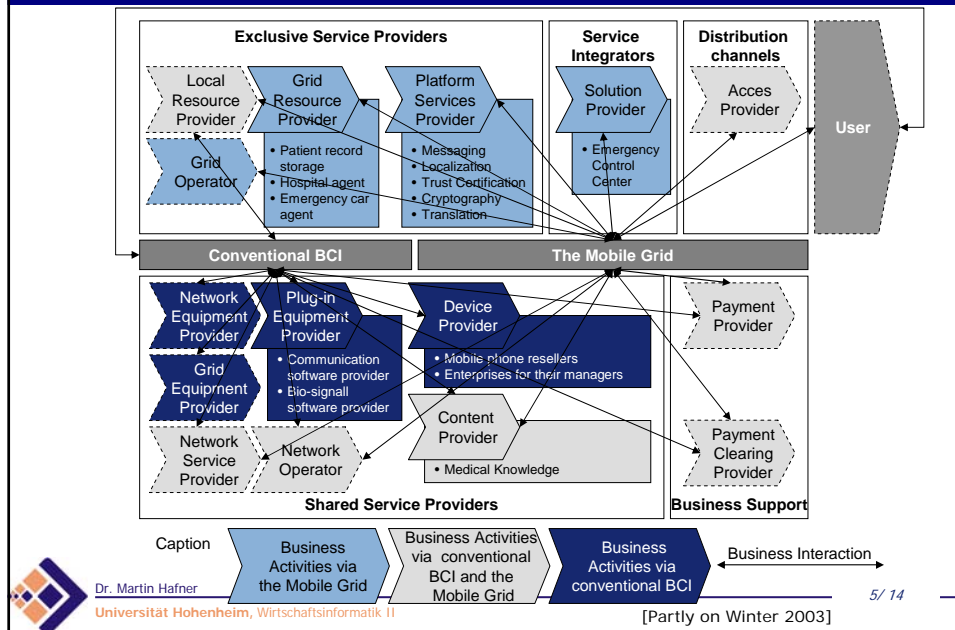
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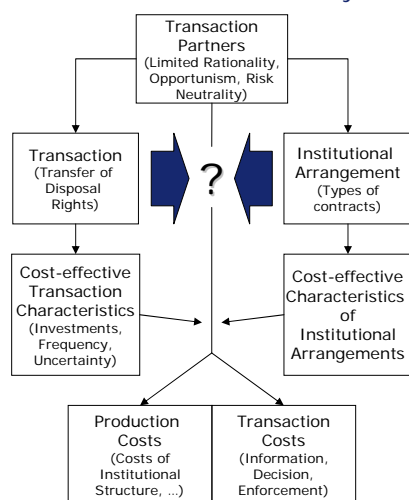
[Wesn2005]

The Mobile Grid Value Network Applied to the Emergency Domain

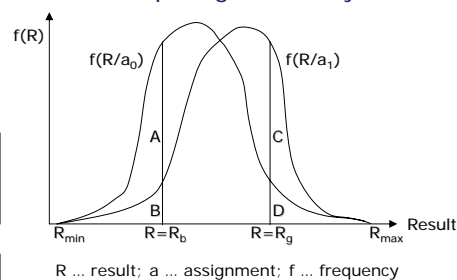


Methodology of Value Network Engineering

Transaction Cost Theory

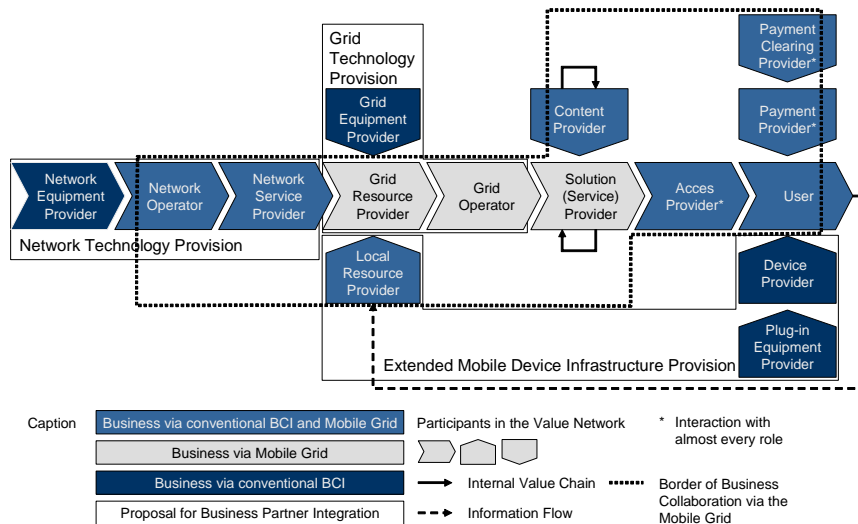


Principal Agent Theory



- Agent's rooms of manoeuvre because of information asymmetries between principals and agents
- Results vary according to the agent's efforts.

The Mobile Grid Consolidated Value Network



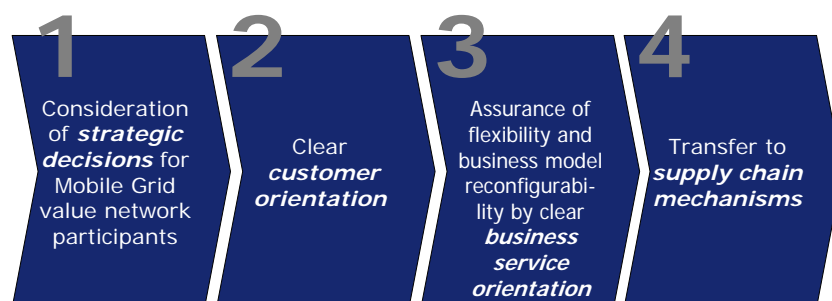
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Operationalising Value Networks: The Business Model Concept

- Limited knowledge on the future
- Product development of telecommunication providers to be considered as industry secrets
- No protection by law for business model innovations

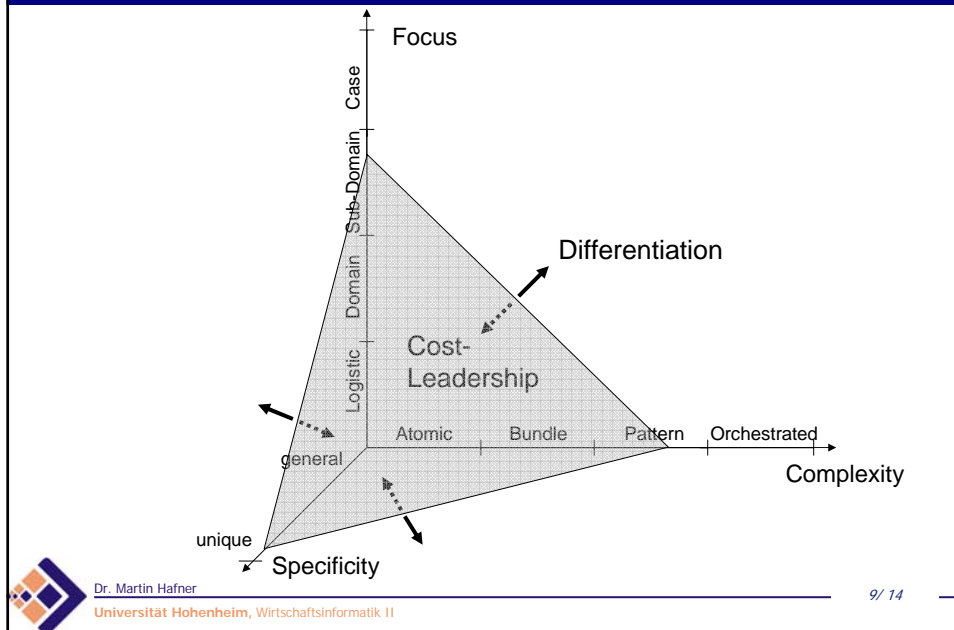


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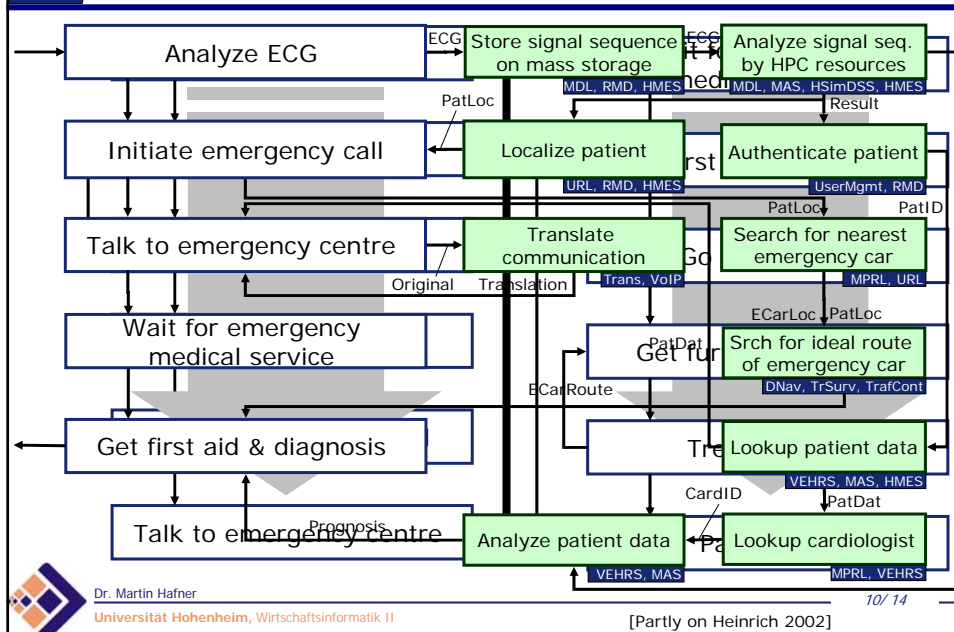
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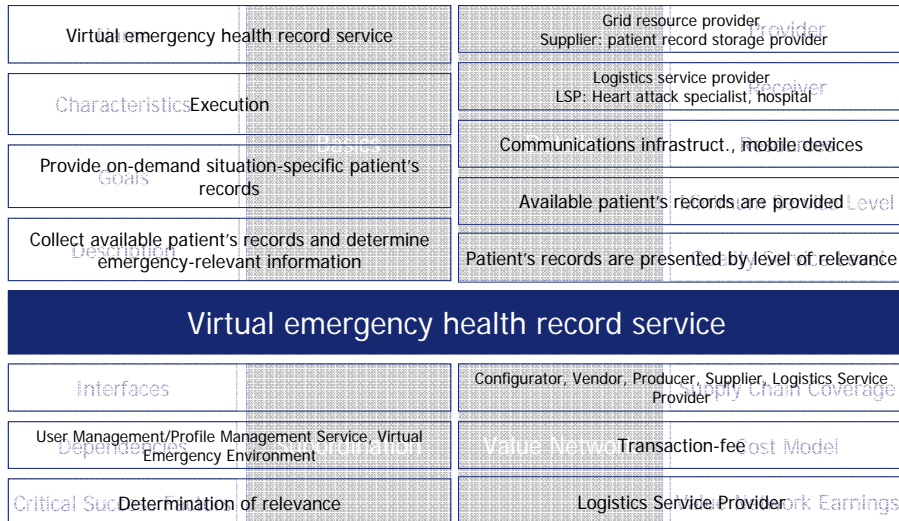
1 Evaluation Criteria for Strategic Decisions



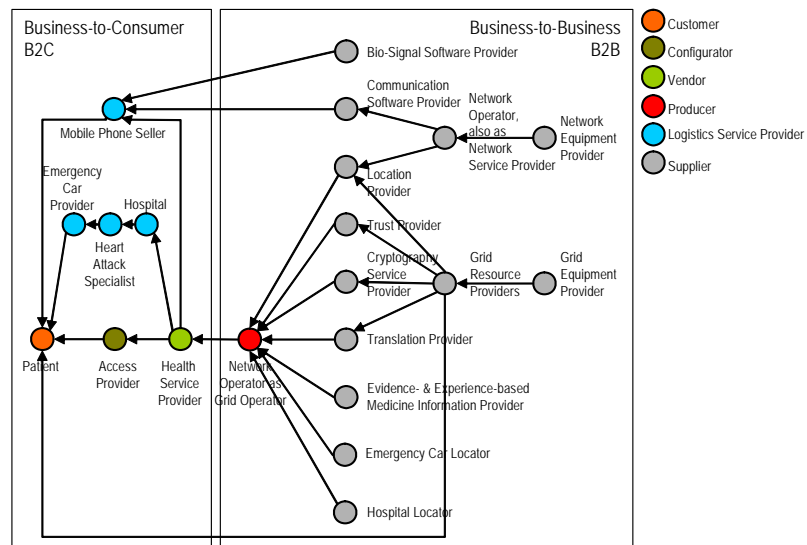
2 Customer Orientation from the Information Logistic Perspective



3 Business Service Orientation



Supply Chain Mechanisms in the Akogrimo Emergency Scenario



Lessons Learned

- High effort for getting *from technical project results to market design* as they clearly need to be explained to investors, end users, etc.
- Significant evidence for *engineering products, technologies* but also actor descriptions, business relationships, market processes, and business models
- Important challenge of every IST research project as its *staff usually not identical with stakeholders* (CEOs, business development)
- ... on the other hand: collaboration of UHOH in effective *networks of expertise*
 - UHOH's *Center of Entrepreneurship*
 - *Venture Capital Circle* of the metropolitan region of Stuttgart
 - UHOH's *Research Center Innovation & Service Management*



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Further Business Model Engineering Activities

- Business Model Engineering for *innovative project outcome* regarding ...
 - *Technology diffusion processes*
 - Comparability of *value-added scenarios*
 - *Business development* and market engineering processes
- ... to achieve reduction of *investment risks*, accelerating *time-to-market*, etc.
- Further use cases for business model engineering in the area of UHOH's research interests ...
 - *Mobile and electronic healthcare*
 - *Telematic and traffic control*
 - Logistic, in particular *agro-food chain* based on RFID and Galileo system
- *Empirical study* planned and further *national and international research project proposals* on business model engineering in 2007



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