



Challenges for business modeling and analysis of new concepts – to see beyond the technology

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Economics of Smart Grids With Renewables
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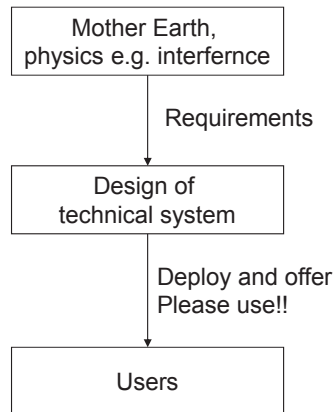
Topics

- Design of infrastructure systems – now and in the past
- Key components in business modeling and analysis
- Benefits and values of smart energy systems
- About research focus of smart energy systems
 - supply side vs demand side
 - technical aspects vs business aspects
- Examples from other sectors

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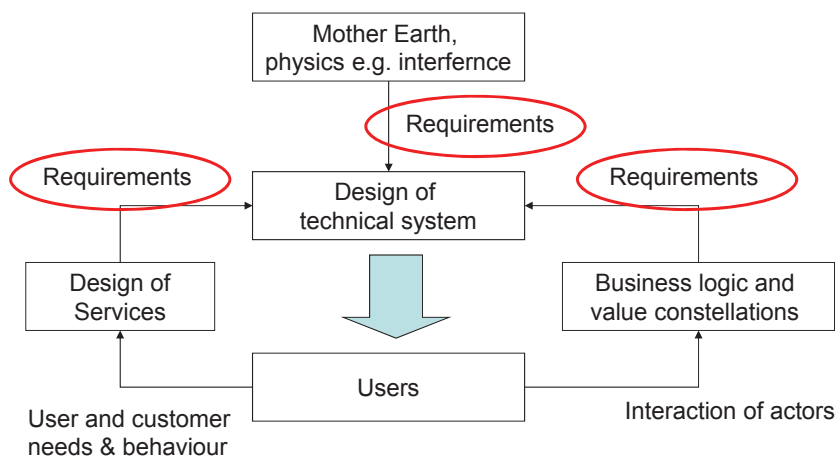
Design of mobile systems - traditional approach



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Design of mobile systems - assumption on future approach



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Business modeling and analysis

Customers and value proposition	{	<ul style="list-style-type: none">• The technical solution or concept is used to deliver a specific service to a specific customer segment• The customers experience some benefits• The value of the benefit can be described/estimated
Value network	{	<ul style="list-style-type: none">• The actors that create value control resources• Different actors can take different roles, resources & roles can be configured in different ways

Business research is very much retrospective
- It describes and tries to explain what has happened

This research tradition is also different from engineering sciences,
Very seldom "What If" approaches are used

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Benefits and values

<h3>Will it happen?</h3> <ul style="list-style-type: none">• Will it happen faster with a better solution—or not?• Are there showstoppers?<ul style="list-style-type: none">• Too expensive EV• No government support• Government problems• Compare Sweden, Denmark and Germany	<h3>Is there a value?</h3> <p>The case smart homes</p> <ul style="list-style-type: none">• Consumer value?• Value for suppliers?• Demand adaptation industry vs households
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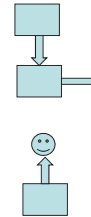
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About smart grid related research

- Solutions are often described in technical terms only
- Supply side aspects dominate
- Business thinking is focused on one sector at the time
- Business model assumes a provider-customer setting
- Difficulties to analyse value in a "what if" context

- Lessons learned from cases and other sectors
 - Access control and home care
 - Handling of metering data
 - Mobile parking
 - SMS ticketing



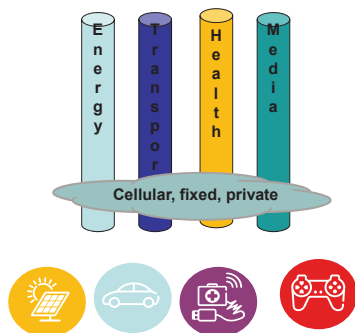
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"One sector at the time"

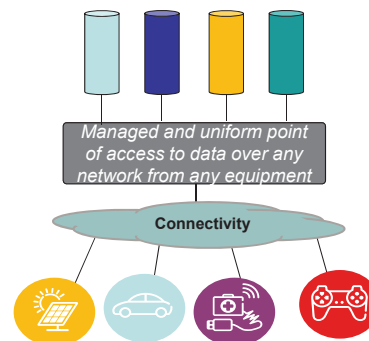
(pictures from Per Ljungberg, Ericsson)

Current solutions – stove pipes



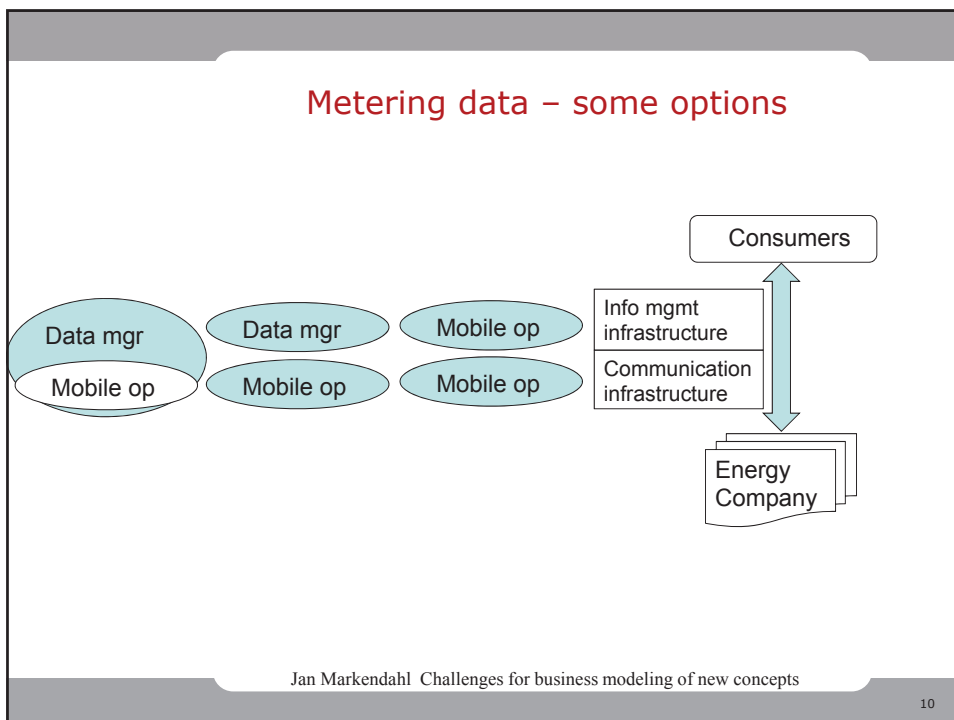
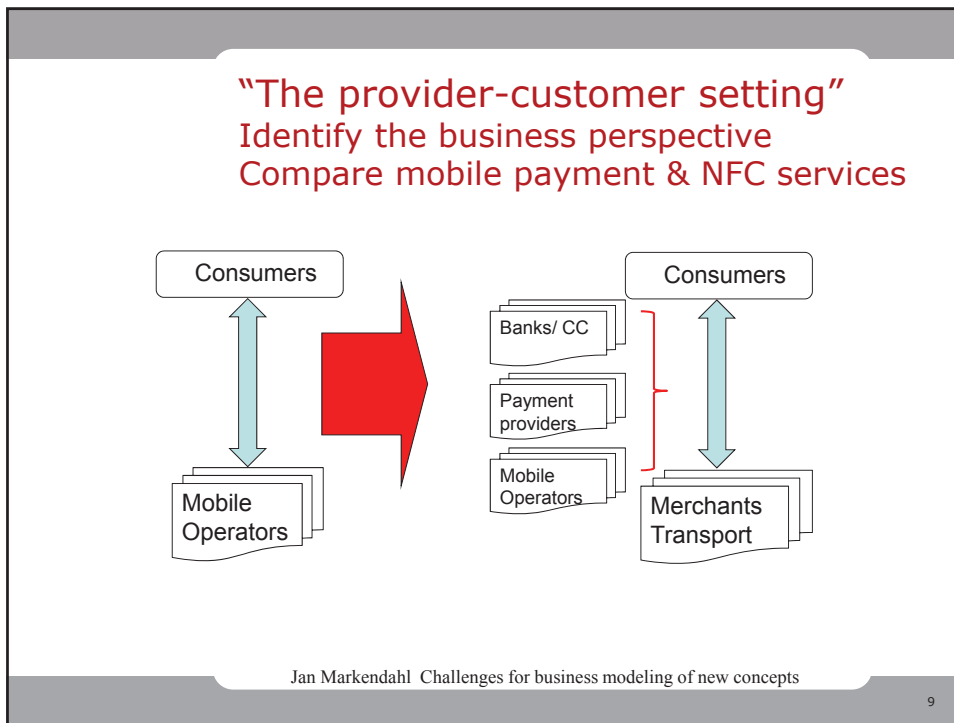
Generic services

- common requirements for verticals



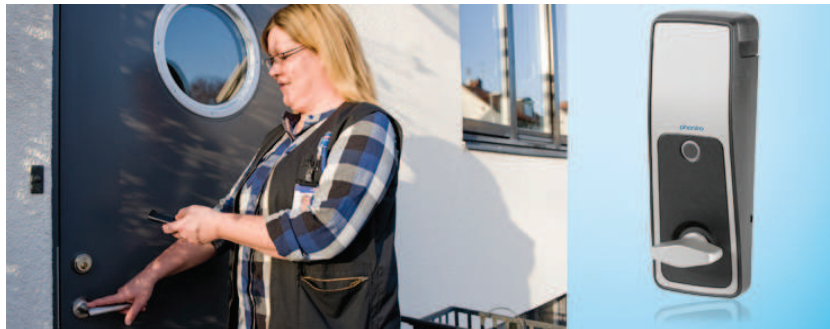
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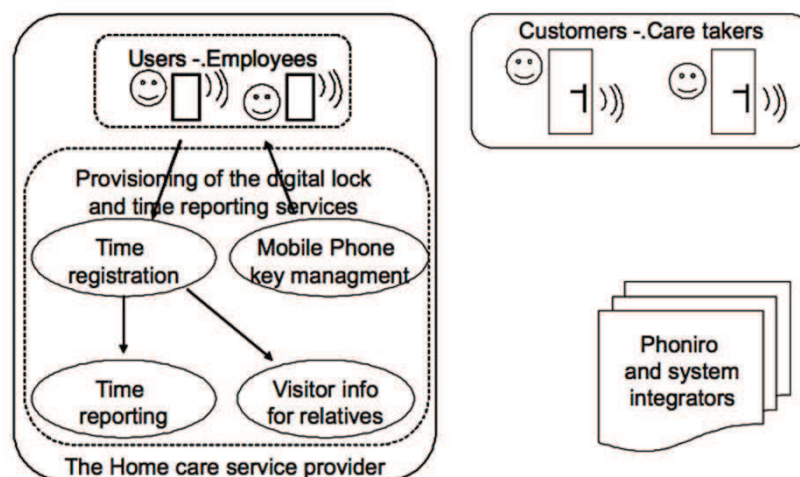
Home care services

- Digital keys and digital locks (and key management) using mobile phones with bluetooth technology
- Time reporting
- Other values

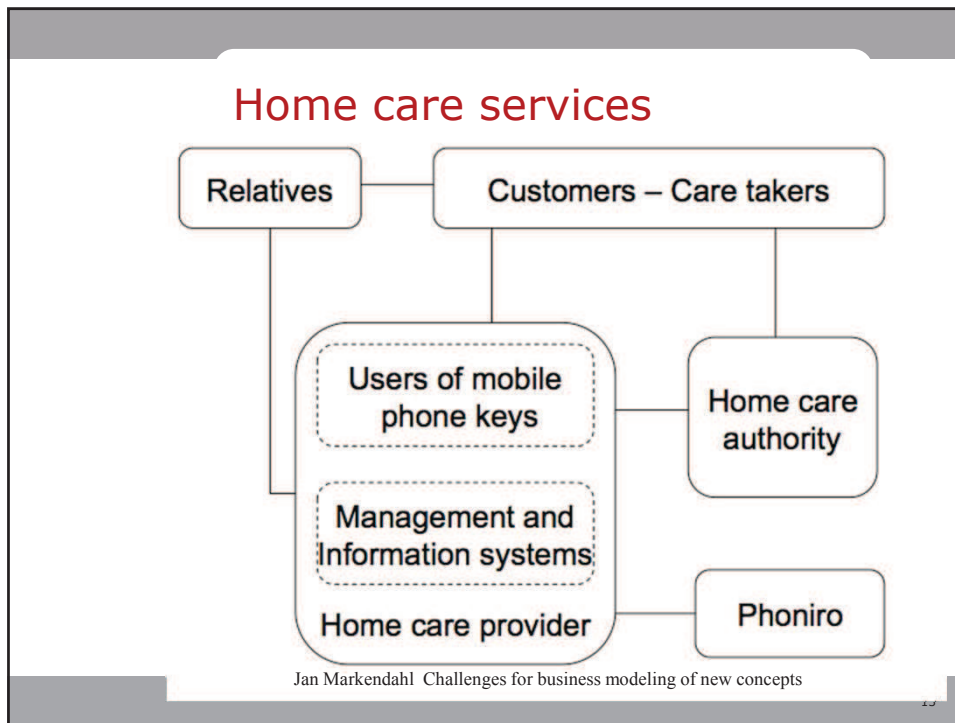


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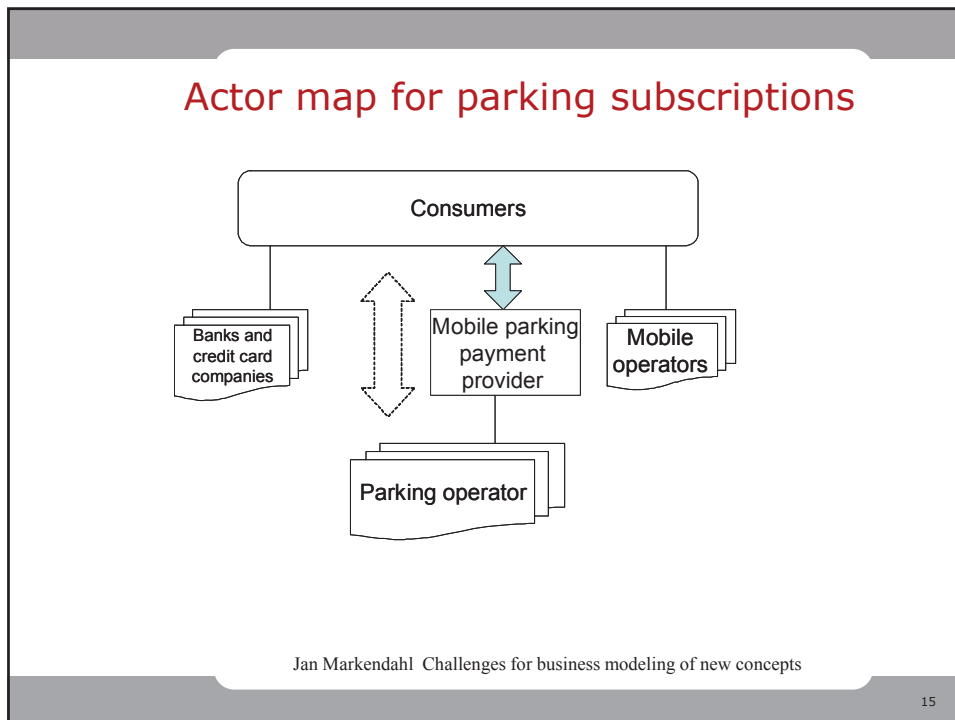
Home care services



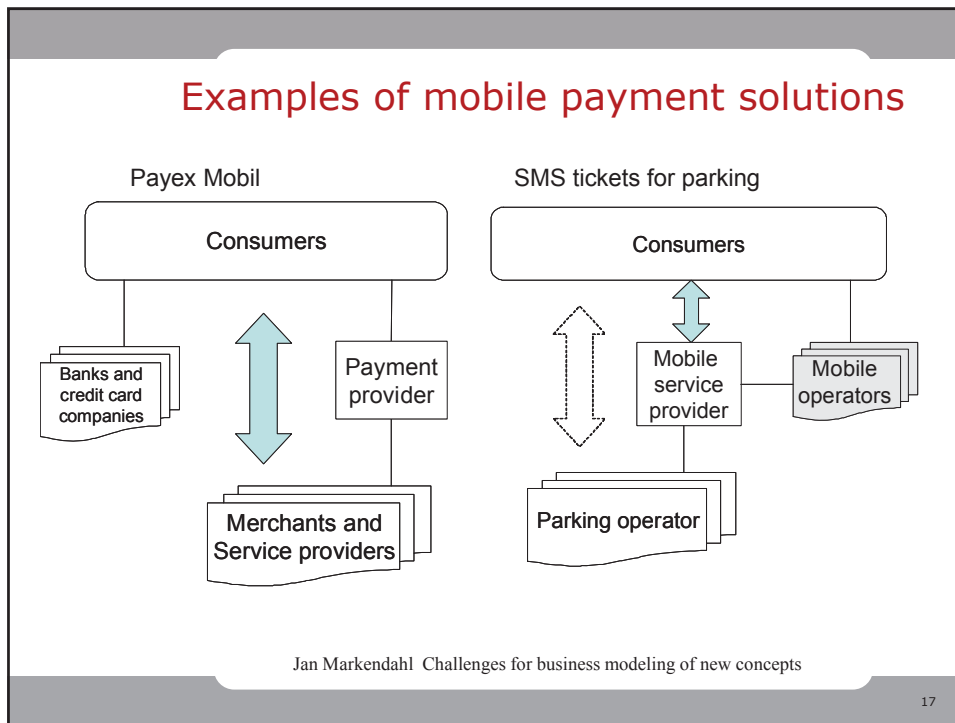
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- ### Findings for home care services
- Mobile operators and other ICT actors focus on the technical solutions, e.g. digital locks, the phone as a key and remote time reporting
 - The value of the benefits are most evident for
 - the service provider: efficiency
 - The authorities: proof that the home care service has been delivered
 - Relatives: proof that the home care service has been delivered
 - In order to provide the service you need to be involved in and understand the "home care business"
 - One big Mobile operator that initially promoted these services did withdraw "we do not have the competence", "it does not suit our business model"
 - Other more specialized actors provide these services as a bundled offer
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- ### Added values mobile parking
- For users
 - "Cashlessness"
 - Pay for what you get
 - Aggregated bills, less administration
 - För service provider
 - Less chash handling
 - Less need for ticket machines
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- ### Analysis of what actors that take different roles
- Analysis of 10 different mobile payment and ticketing solutions
 - Groups of roles
 - related to the services and service provisioning
 - related to management of business relations
 - related to charging, billing and payments
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What actor take business roles for different eco-systems?

	SMS payments	Parking subscription	Payex solution	Payair solution	Case "3 US operators"
Manage platform, SE	SMS ticket provider	M-parking provider	M-payment provider	M-payment provider	?
Provide the service	SMS ticket provider	M-parking provider	M-payment provider	M-payment provider	Payment processor
Manage user relations	SMS ticket provider	M-parking provider	M-payment provider	M-payment provider	Op+Payment processor
Manage SP relations	SMS ticket provider	M-parking provider	M-payment provider	M-payment provider	Payment processor
Charging requests	SMS ticket provider	M-parking provider	User (wallet is loaded)	User+ PoS merchant	Payment processor
Charge users	Mobile operator	M-parking provider	Bank or CC Company	Bank or CC Company	Bank
Distribute payments	SMS ticket provider	M-parking provider	M-payment provider	M-payment provider	Payment processor

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Result - what actors take different roles

- Intermediaries and middlemen take most roles
- Banks and credit card companies focus on what they use to do, i.e. to manage transactions
- Mobile operators do not play any important role in the value chain, sometime they are not even involved!

Conclusion

- Findings from initial business and value modeling work done for smart energy systems
 - Architecture is focused on technology issues only
 - Business thinking focused on one sector only
 - Business thinking focused on provider perspective
 - Difficulties to analyse value
- In general it is challenging to do business model work for services not here yet
 - especially if we can foresee new actors, new types of businesses and new market structures

Thanks for your attention

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