



How to design value-added services for the future energy market?

Developing a new service design methodology

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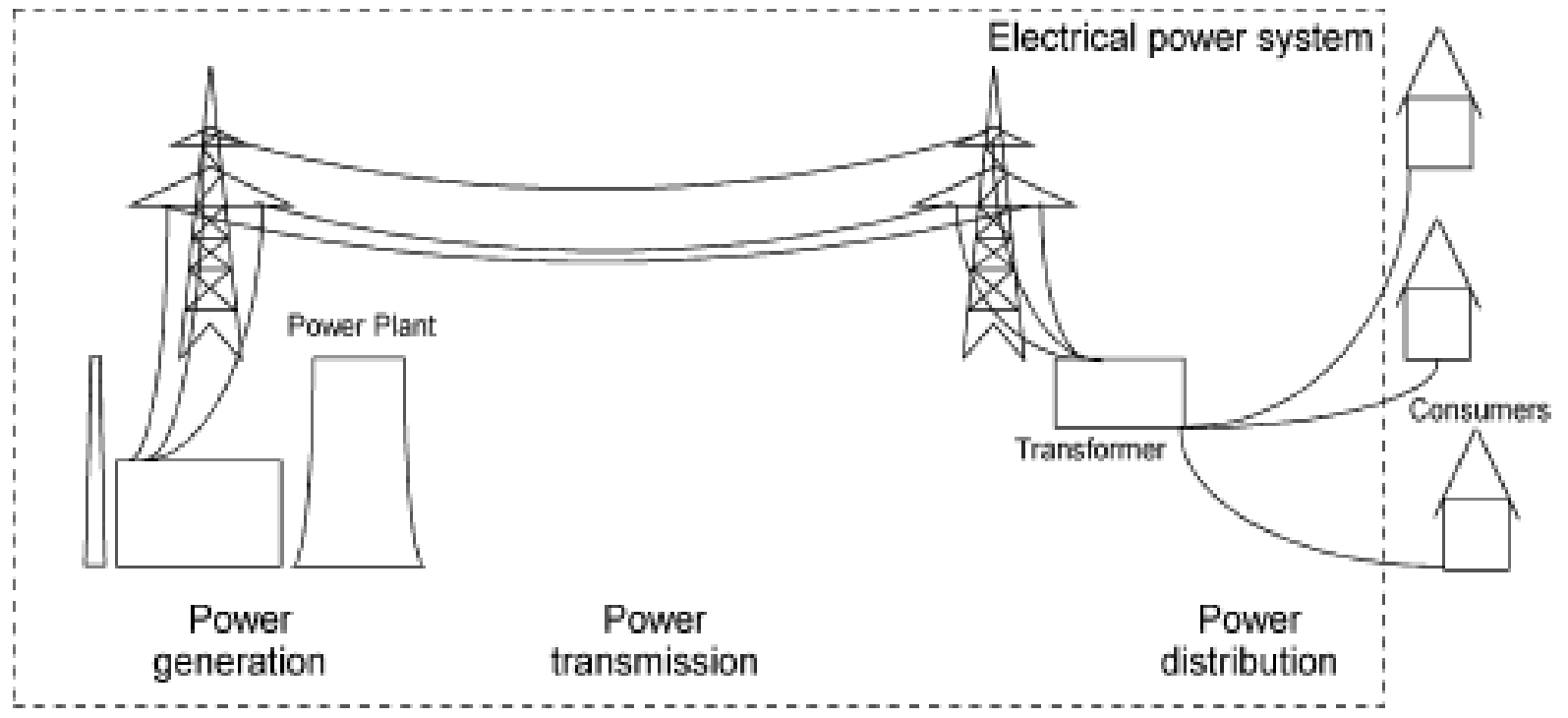


Content presentation:

- Context of research – developments in the energy industry
- Research questions & scientific context
- Research approach
- Discussant
- Questions & discussion

Context of research

Current electricity grid



Context of research

A future scenario



Source: *European Smart Grids Technology Platform (EUR 22040)*



Context of research

Energy Business Market

Business drivers

- Government ruling breaks open the traditional energy value chain
- New players will enter the play ground
- New business concepts will emerge
- Value-added services will become new business generator

Examples of value-added services:

- Fraud detection
- Remotely connect, disconnect, limit load
- Flexible tariffing (i.e. Pre-Pay, Time of Use, Max-/minimum Demand, Seasonal)
- End user energy management advice
- Demand response
- Remote control of appliances
- Local energy market place (supply-demand handling)
- Auxiliary services like safety, security, telemedicine, social alarm
- Etc...

- ⇒ Service oriented attitude and market approach needed
- ⇒ Structured service design process is crucial



Central research question

Central research question is:

“How to design value-added services
for the future energy market?”

Research sub questions

Sub questions:

1. Who are the stake holders, and what are their requirements?
2. How can design methods support the service design process, and what are their characteristics?
3. How to develop a new service design method that meets the requirements?
4. How to validate the new service design method?
5. How to evaluate the performance?
6. How does the new method perform?

Research approach

Scientific context

Menor:

“Offering new services is a competitive issue: enhance profitability, attracts new customers, improves loyalty, new opportunities”

Norman & Ramirez

“Service innovation needs constant mapping onto customer requirements and satisfaction”

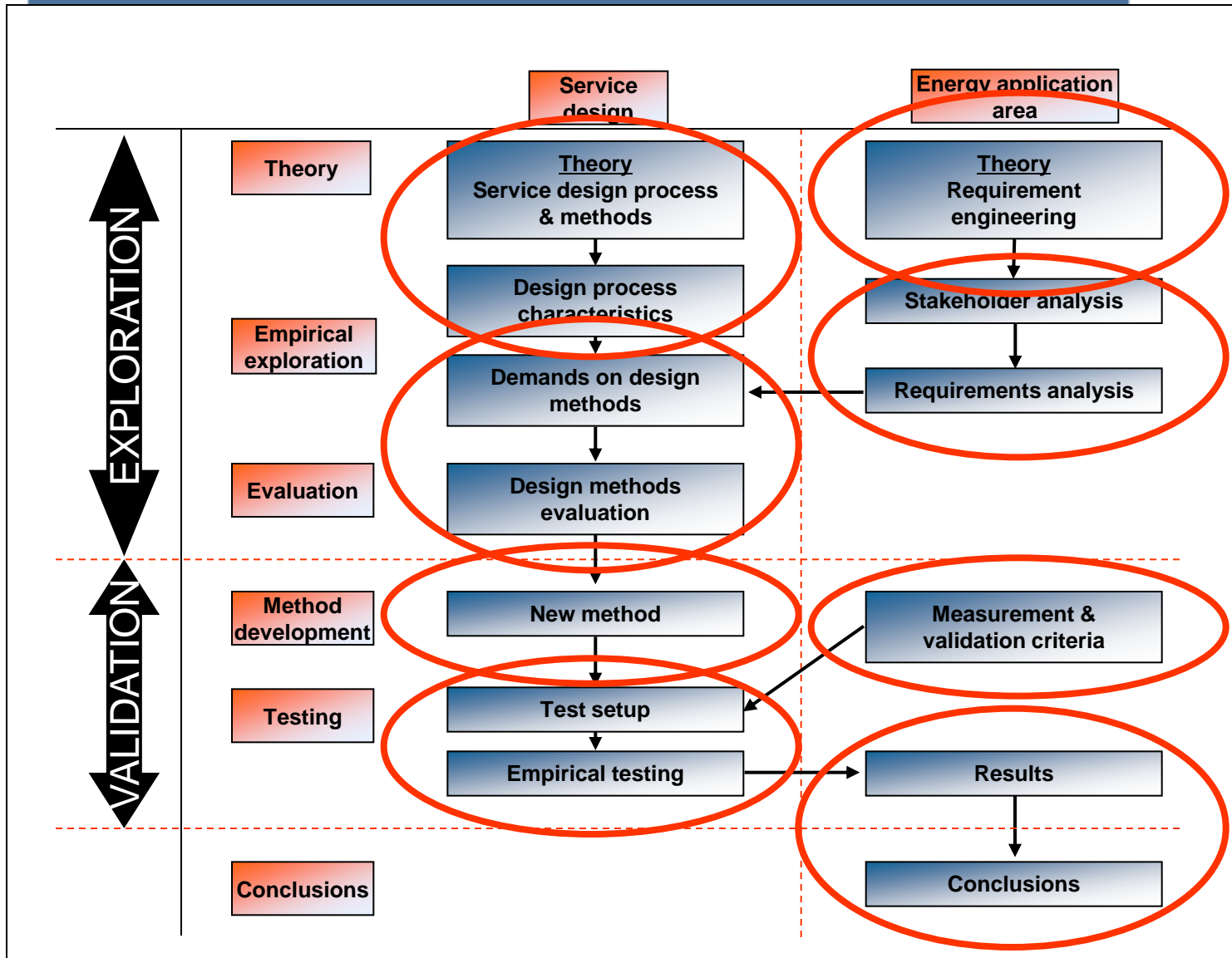
Ramaswamy:

“*Total design approach* is needed. Both technical-engineering functions, as well as customer-focused requirements, should be taken into consideration.”

Simons:

“Quality Function Deployment (QFD) methodology extended for developing e-services.”

Research approach





Discussant



Any questions?



More info:

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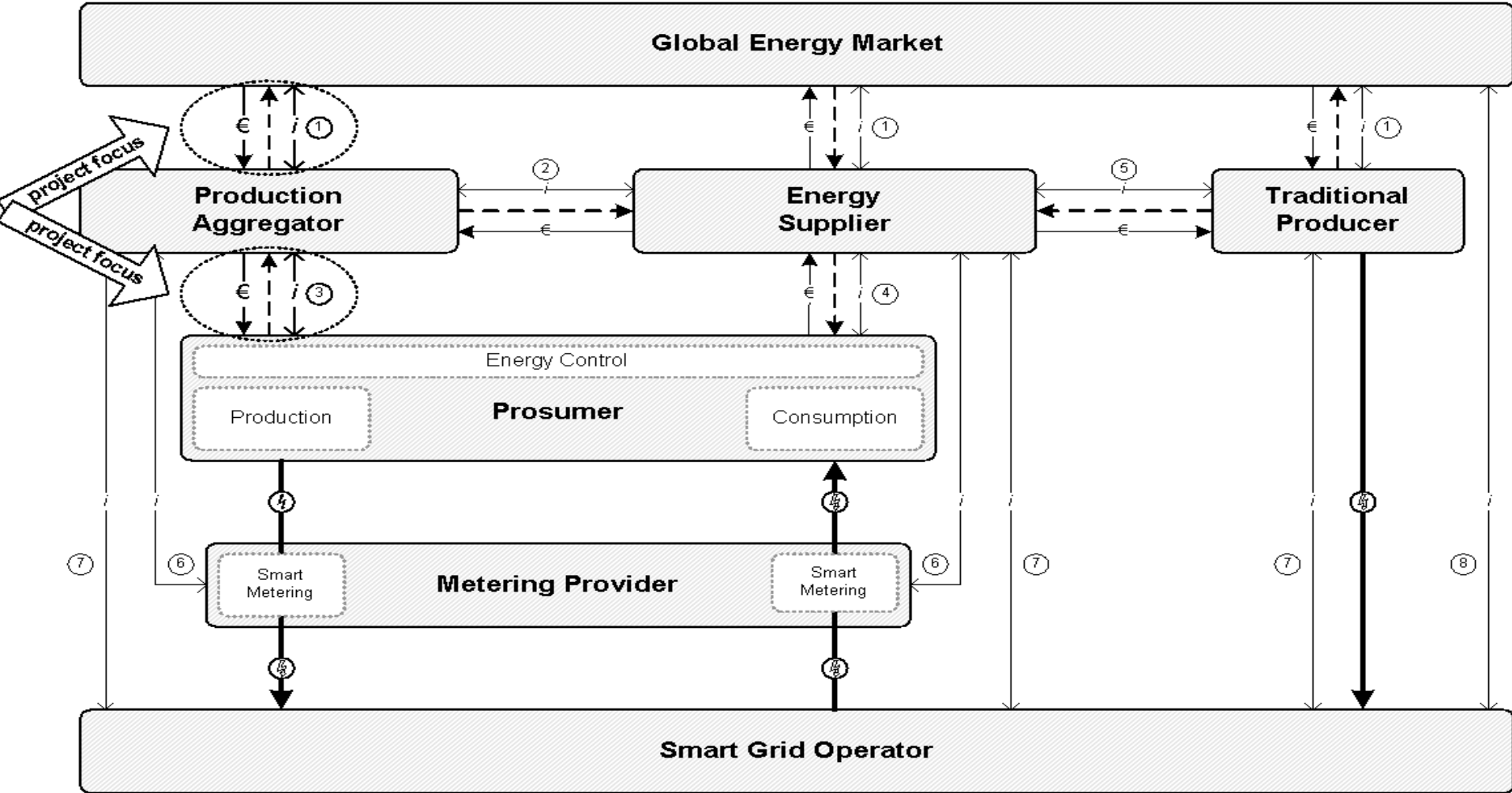
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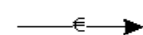




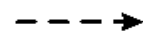
Legenda



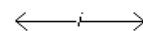
energy flow



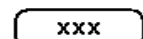
money flow



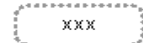
title flow (*flow of energy ownership*)



information exchange



role



process

① market info + buy/sell commands + clearing info

② contract information + financial statements

③ production control + financial statements

④ consumption control + financial statements

⑤ contract information + financial statements

⑥ metering information

⑦ capacity reservation requests

⑧ imbalance information

Context of research

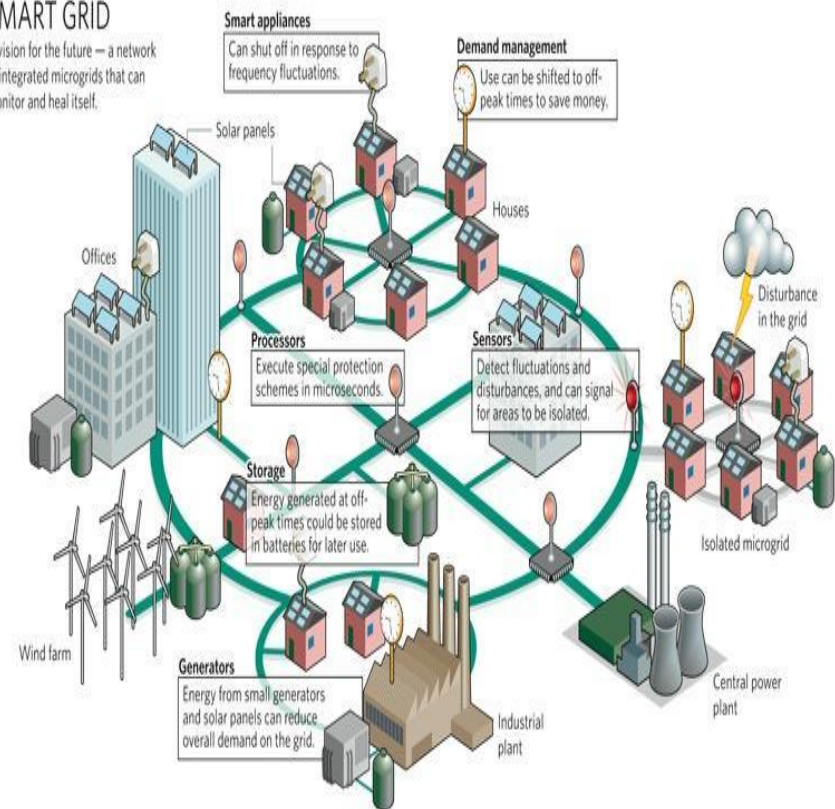
Technology developments

Technology drivers:

- Smart meters
- Smart homes
- Smart grids
- Distributed generation

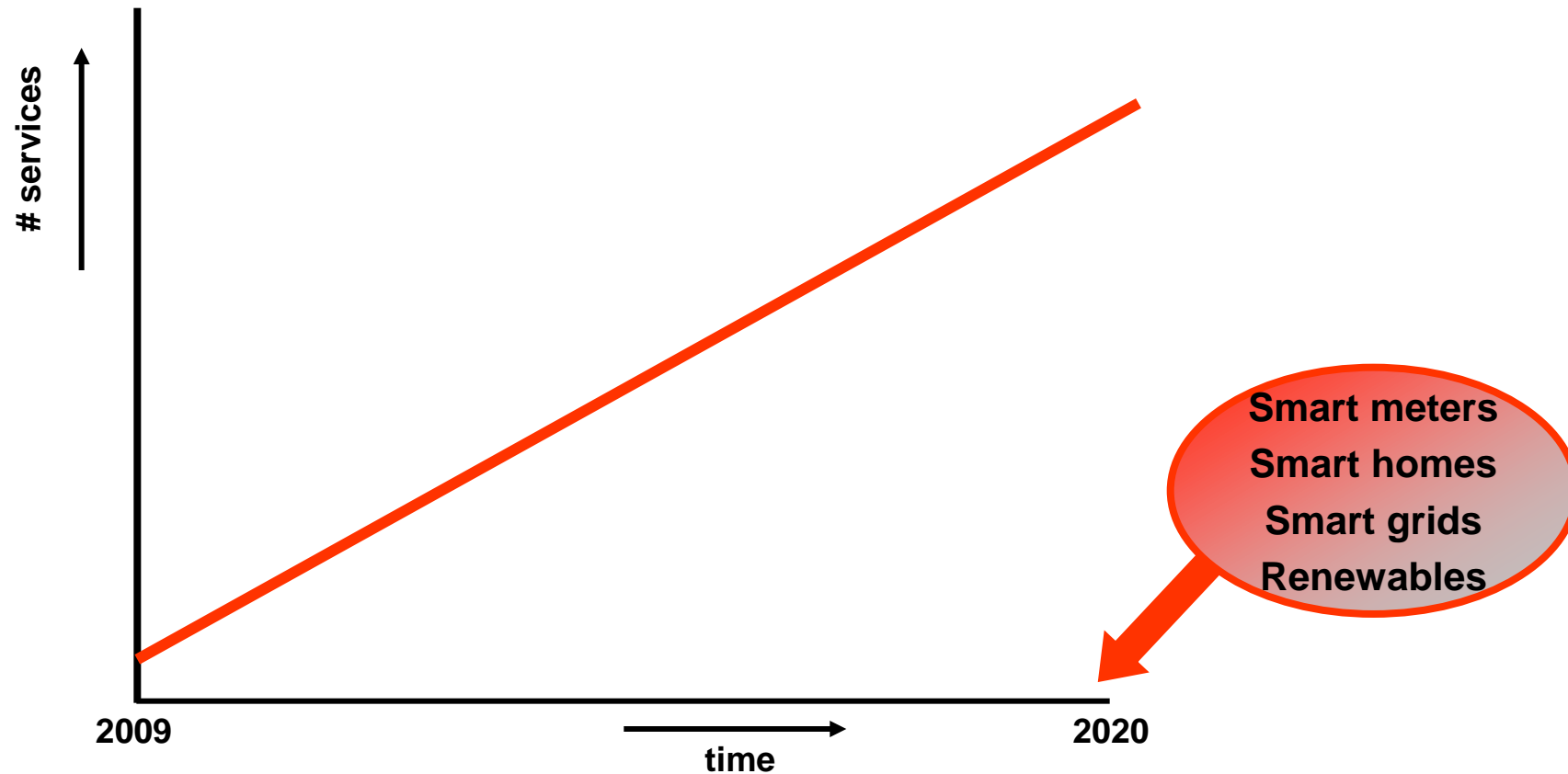
SMART GRID

A vision for the future — a network of integrated microgrids that can monitor and heal itself.



Context of research

Services in teh energy market



Research approach

