

Product Services - Green and Viable Business Models?

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Green business models

Introduction

- Business and sustainability hopes on PSS
- Economic viability
- Environmental performance
- Conclusions

ANNOUNCING THE PUBLICATION OF

New Business for Old Europe

**PRODUCT-SERVICE DEVELOPMENT,
COMPETITIVENESS AND SUSTAINABILITY**

EDITED BY **ARNOLD TUKKER** AND **URSULA TISCHNER**
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Shift to PSS – the business hope

- Business and consumers concentrate on ‘core competences’ and hence need more integrated (outsourced) solutions
- Many products become commodities -> diversification is the only strategy to escape price competition
 - Unique, customized product-service bundles (solutions)
 - Unique, monopolized client knowledge and relations
- GDP is determined for over 50% by intangible value



5 \$/shoe

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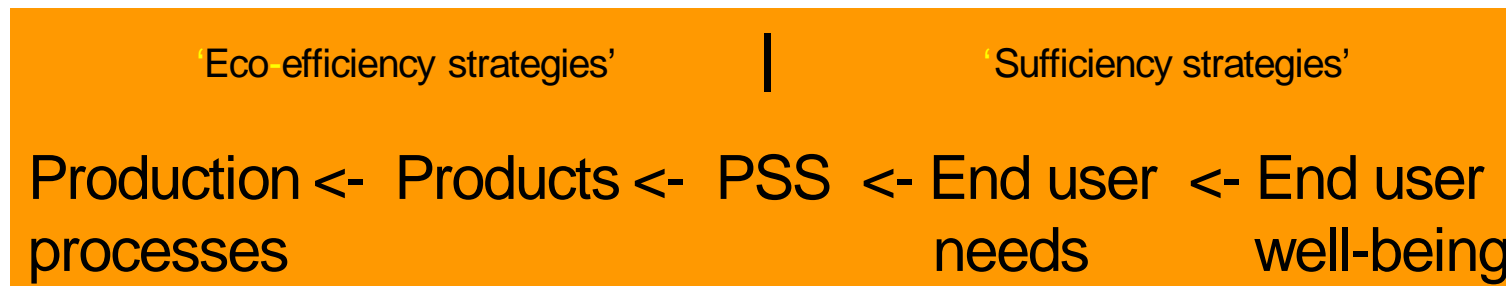
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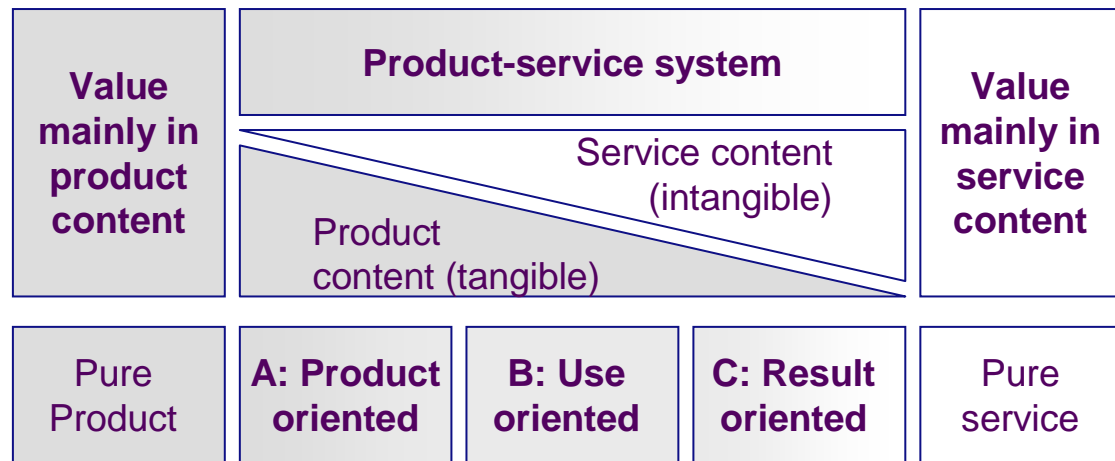
100 \$/shoe

The shift to PSS – the sustainability hope

- Only one earth (not 4)
- We need the satisfaction, not the product
- Services are weightless
- PSS is the key to Factor 4 !
- So if business becomes service-oriented sustainable paradise will follow



Product Service Systems: a classification



Car sales....



+ financing and maintenance

Car sharing system



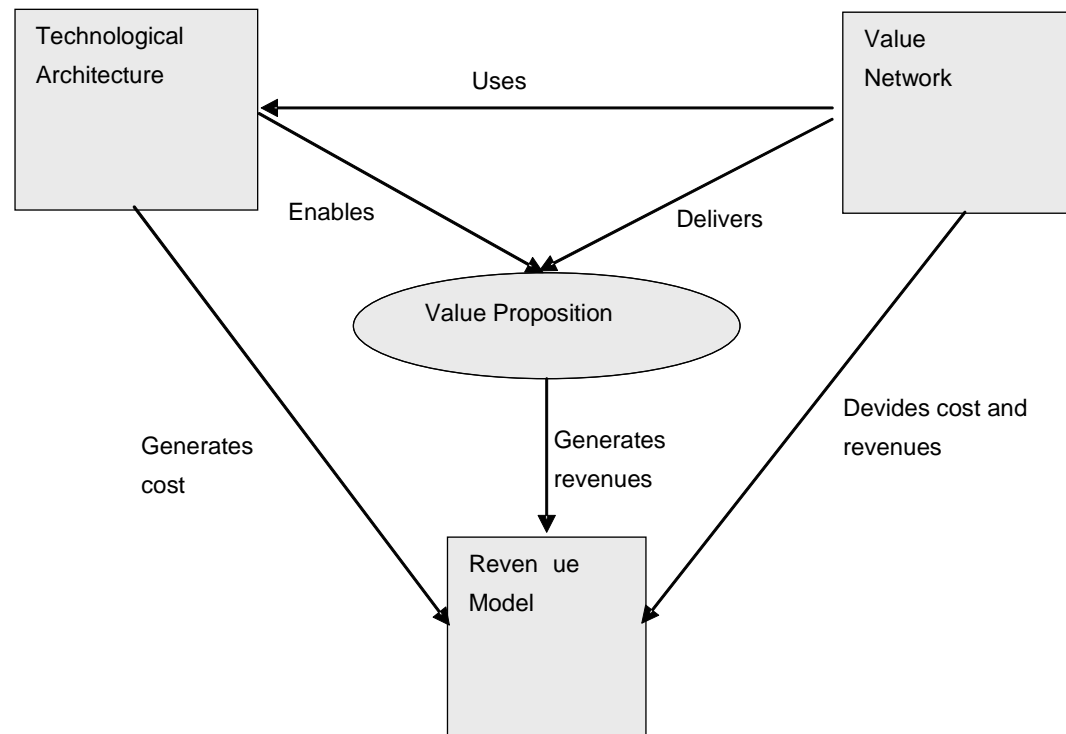
Chemical management services



But...PSS is just a specific **business model**

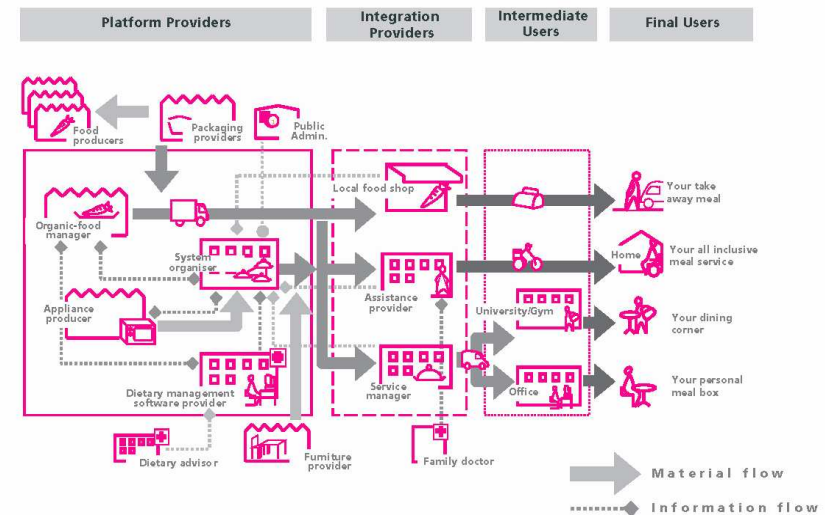
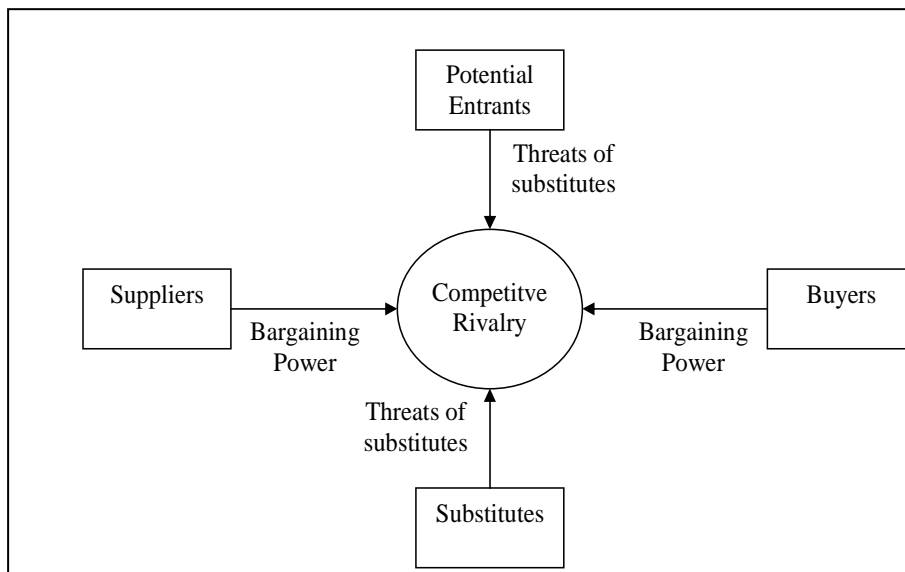
- Definition of a business model:

“a description of how a company or a **set of companies** intend to **create and capture value** with a product or a service. A business model defines the architecture of the product or service, the roles and relations of the company, its customers, partners and suppliers, and the physical, virtual and financial flows between them” (Ballon and Arbanowski)



..and needs to be evaluated on **business sense!**

- Key point: how to sustain the creation and capturing of value
 - Creation is not enough, you have to capture it
 - Capturing at some point is not enough, you have to sustain this
- **Sustainability researchers hardly looked at business literature!**



Business factors we found:

- **Value**: Co-creating user value versus market risk
 - Tangible value
 - Intangible value
- **Costs**: Minimizing system costs versus financial risk
 - Use of resources
 - Transaction costs
 - Capital costs, risk profile, and ambiguity of the offering
- **Power and dynamics**: Other benefits versus investment and capability risk
 - Power in the value chain / potential to capture value
 - Speed of innovation, learning, and option value
 - Investment in new core capabilities, cannibalisation and loss of synergies

Tukker, A (2004): Eight types of Product Services – Eight Ways to Sustainability? Business Strategy and Environment

Some examples that worked....

- Douwe Egberts Coffee Services
 - Avoids fights on dirty kitchens etc.
 - Easy for management
 - Puts DE in power node
- Catering and cleaning services for offices
- Swiss mobility car sharing
 - Lowers access threshold
 - Conveniently located
 - Avoids parking problems



Some examples that saw problems

<p>ABB and ‘power by the hour’</p>	<ul style="list-style-type: none"> • Electricity efficient motors, but expensive -> result oriented service • Sales people sold on volume, not expecting rising energy price • Result: ABB had multi-year contracts with losses
<p>Ahrend and office furniture PSS</p>	<ul style="list-style-type: none"> • Leasing and re-furbishing may be interesting • ‘But hey, look – we have a production plant. We went back from 3 to 2 shifts, and cannot afford ourselves going back to 1”
<p>British Airways outsourcing catering</p>	<ul style="list-style-type: none"> • Caterer squeezed out personnel, that went on strike • BA could not influence this situation • In 2007, BA had to fly for weeks without meals
<p>Performance contracts with the Police</p>	<p>...difficult if performance quality has important intangible aspects... ...in some countries you see police agents fining pedestrians walking through red lights by the end of month, to ‘make their target’</p>



Some attention points by model in the NCM project

Chemical management services	<ul style="list-style-type: none"> • Value: Usually high since client is not specialised; cultural factors may impede ('I cannot outsource this responsibility for toxics') • Costs: Usually lower: management and not volume is profit centre • Power and dynamics: Improved bargaining power
Energy Saving Companies	<ul style="list-style-type: none"> • Value: unclear – easier for management, less user flexibility • Costs: usually lower since more competent. Provider takes on more risk (user behavior, energy price development, etc.); • Power and dynamics: Improved bargaining power
Design, Build, Finance, Operate	<ul style="list-style-type: none"> • Value: unclear – easier for management, less user flexibility • Costs: usually lower since no principal agent problem. Provider takes more risk (user behavior, energy price rises, opportunity costs of capital etc.); In periods of high real estate prices provider is compelled to sell after all. • Power and dynamics: p.m.
Sharing	<ul style="list-style-type: none"> • Value: Low tangible and intangible value, particularly in B2C • Costs: Usually lower costs, though transaction/access costs go up • Power and dynamics: p.m.



Typical business issues per PSS type

- Product oriented service
 - More convenient for consumer
 - You may even ask a significant premium....
 - ...but it only works if you can run this alternative business (e.g. washing machine builders are not the best repair firms)
- Use oriented service
 - In principle more cost effective
 - But much lower intangible and tangible value (compare car sharing with a car)
- Result oriented service
 - Can be much more effective and opens the door for fully new function fulfillment
 - But often needs totally new capabilities, has worse cash flow properties, lies all risks with provider, and the offering may be difficult to specify

Typical environmental issues per PSS

- Product oriented PSS: marginal improvements
- Use oriented PSS: typically a factor 2 improvement
- Result oriented PSS: major improvements possible...but only if it leads to radically new value propositions and technical architecture

- My educated guess for the NCM project cases:
 - Sharing (Use oriented): Factor 2
 - CMS, DBFO, ECSO: Dozens of % to a Factor 2 (since no radical new technology)

..which gives a clear design challenge

PSS type	Advantages	Disadvantages
1: Product oriented services	Easy to implement Close to core business	Incremental environmental benefits (20%)
2: Use oriented services	Medium (Factor 2) Changes consumer behaviour Mainly successful in B2B context.	Low intangible added value => consumer acceptance difficult, because of ownership conflict etc.
3: Result oriented service	Factor x potential	Risks/ Liabilities How to measure result? Customer loses power over means



To conclude: PSS

- Good concept
- Needs to be evaluated like any business model
- Is certainly not a panacea for a 'Factor 4 World'...
- ...and all PSS designers should ask 'Why should a smart entrepreneur not yet have put my idea on the market?'



Types of PSS: classification in more detail

