

Sustainable Supply Chain Function Deployment

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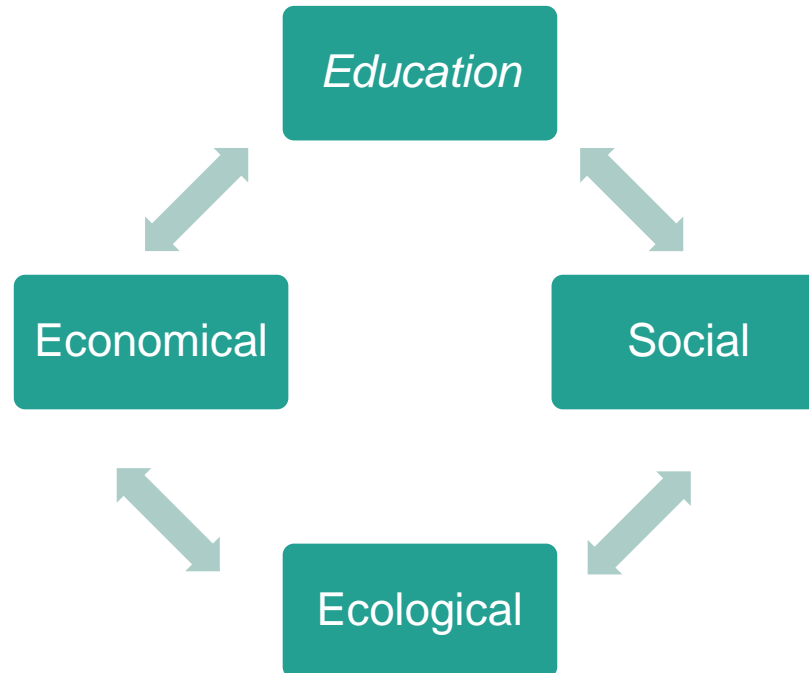
1. Introduction
2. Sustainable Supply Chain Management
3. Quality Function Deployment
4. Sustainable Supply Chain Function Deployment
5. Conclusion

- Increasing interest for sustainable supply chain management in the last years
- More and more companies illustrate the three-dimensions-approach via internet
- Supply chain management is a holistic approach
- Main objective is to realize customer satisfaction
- A method in quality management to increase customer satisfaction is the quality function deployment

Research-question: Is it possible to apply the quality function deployment for a sustainable supply chain management approach?

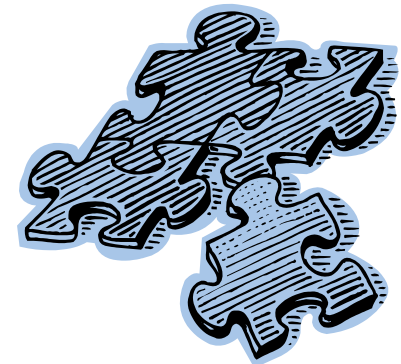
2. Sustainable Supply Chain Management

- Different definitions in literature are given
- Usually many definitions consider the ecological, economical and social perspectives
- In our understanding one factor is important too: Education!



2. Sustainable Supply Chain Management

- Drivers for sustainable supply chain management are
 - Internal
 - Warranty
 - Service and repairs
 - Product return and recovery
 - Claims and recalls
 - Remanufacturing
 - External
 - Customers
 - Environment
 - Financial
 - Legislation

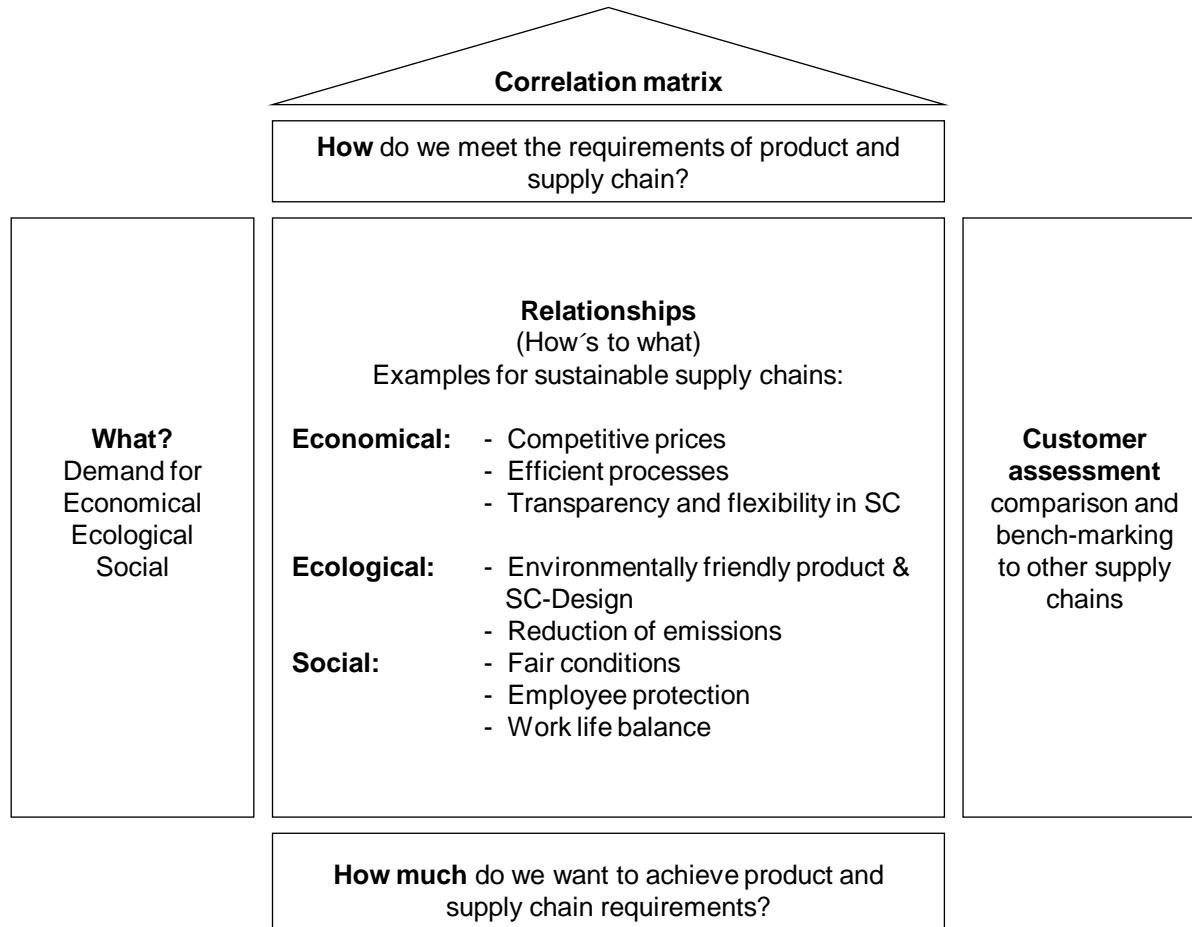


3. Quality Function Deployment

- QFD is a tool to identification costumers requirements
- 1966 developed by Akao and implemented by Bridgestone
- In Europe applied by Ford and Kodak in the late 1980s
- To meet the costumer requirements manufacturers and scientists use different approaches
- Possible to consider factors like social and ecological
- In 1990s first sustainable approach in literature can be found

- QFD-Phases in supply chain management:
 1. **Product Planning:** Exactly description of customer requirements and requirements of product and supply chain performances
 2. **Product & SC Design:** Product and SC design with environmentally friendly and social performance requirements
 3. **Intra- & Inter-Organizational Process Planning:** Description the requirements on equipment and supply chain processes
 4. **Production & SC Operation:** Control phase for operative implementation of define equipment & processes parameters

- QFD-Design for sustainable supply chain function deployment



4. Sustainable Supply Chain Function Deployment

Direction of Improvement		Supply Chain Management Processes																
		Procurement	Costs of Goods	Quality of Goods	Regional Sourcing	Bundling orders	Central Warehouses	Compliance Procurement	Production	Sustainable Minings	No Child Labor	Avoidance of wastful	Recycling	Distribution	Electromobility	Transport collaboration	Modal Split	Laws Driving Hours
Customer Requirements (What)	Design Requirements (How)																	
	Logistics	Flexibility		1	1	9	9	3	1		1	1	1	1		3	9	9
Quality			9	9	9	1	1	1		9	1	1	1		1	1	1	1
Safety			1	3	3	1	9	1		1	1	1	1		1	3	3	1
Transparency			1	1	3	1	3	1		1	1	1	1		1	1	1	1
Reduce	Costs		9	9	9	9	9	3		9	3	9	3		3	3	3	1
	Emissions		1	1	9	9	9	1		9	1	9	9		9	9	9	1
	Pollutions		1	1	9	9	9	1		9	1	9	9		9	9	9	1
Social	Fair Conditions		3	1	9	1	1	3		1	9	1	1		1	1	1	9
	Compliance		3	3	9	1	1	9		1	3	1	1		1	1	1	3
Rating																		

1 = Weak correlation
9 = Strong correlation

4. Sustainable Supply Chain Function Deployment

- Sustainable supply chain function deployment illustrates that
 - Supply chain processes have to be consider by product planning
 - Existing processes have to be changed for a sustainable approach

Before / today	After / in future
JIT/JIS-concepts	Bundling orders Central warehouses
Global sourcing	Local sourcing
Production in cheap wage countries	No child labor
Non-compliance legal driving hours	compliance legal driving hours
Direct delivery concepts	Bundling delivery concepts
Each company distribute themselves	Collaborative distribution

- Application of QFD is possible in SCM
- Helpful tool to meet customer and supply chain requirements
- Benchmarking with other supply chains is feasible
- Sustainable supply chain function development illustrates trade-offs before designing products and supply chain processes
- Method illustrates the complexity of supply chains in practice too
- Coordinated and cooperative approaches are essential to realize a sustainable supply chain management
- **Customer have to want a sustainable approach! (Basics of each supply chain is the costumer)**

Sustainable Supply Chain

Function Deployment

Thanks for your attention!

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