Sustainable Supply Chain Management in Theory and Practice

Espoo, 25.05.2007

Nadine Dembski, Christian Ewering, Georg Müller-Christ
nadem@uni-bremen.de
Overview

• Introduction and Motivation

• Theoretical Framework
  • Sustainable Management
  • Supply Chain Management

• Practical Framework
  • Schüco
  • Examples

• Conclusion
Introduction

**Theory**
- Departement of Sustainable Management – Prof. Dr. Georg Müller-Christ, Nadine Dembski
- Researching about sustainability (causal relations)
- Approach for a sustainable management (When does a company decides sustainbale?)

**Practice**
- Schüco KG – Logistics
  - Dr. Christian Ewering
  - Thinking about „How to survive in the market?”
  - Finding possibilities to keep the turnover
Motivation

Problem:

- general considerations in logistics are based on the understanding of success which is primary oriented towards a short-term efficiency

Aim:

- show demands of strategic and organisational considerations and embedding into a rational long-term approach

Proceeding:

- sketch sustainable practical processes in supply chain management
Overview

- Introduction and Motivation

- Theoretical Framework
  - Sustainable Management
  - Supply Chain Management

- Practical Framework
  - Schüco
  - Examples

- Conclusion
In the comprehension of the Brundtland Report, sustainability is about harmonizing economic, social and ecological aspects of global development, with the objective “to meet the need of the present without compromising the ability of future generations to meet their own needs.” (World Commission on Environment and Development 1987)
Different Perspectives of Sustainability

Sustainability

Normative Perspective
- Fair allocation of world's resources
- Reduce business profit-orientation for ethical reasons

Innovation Perspective
- Technological and process innovations to minimize the input of resources
- Triple-win situation

Rational Perspective
- Protect and invest into resource basis for the ability of reproducing
- Rationality of Sustainability
Rational Perspective

- From a resource-orientated point of view every economic organization depends on resources, which are usually required to fulfill the purposes and goals.

- All open systems are resource dependent systems: They exchange resources with each other. Systems consequently take resources out of their basis and give those back to other system resources.

- Therefore every system depends upon other systems and as well is the (re-)source for other systems.
Wirtschaftende Einheiten

Resource efficiency

resource origins

secondary effects

resources

autonomous laws

Secondary effects

Sustainability

resource depending systems

autonomous laws

secondary effects

resources
Advantages of the Rational Approach

- integrative consideration of economic, social and ecological resources,
- innovative solutions allowing a rebuilding of the economic substance
- understanding of the complex and circular interactions between companies and their resource networks, e.g. global supply chains
Overview

• Introduction and Motivation

• Theoretical Framework
  • Sustainable Management

• Practical Framework
  • Schüco
  • Examples

• Conclusion
Who is Schüco?

Schüco develops and delivers systems for the complete hull of buildings:

- Windows, Doors, Facades
- Solar Systems
- Sun Protection
- Fire Protection
- Security and Automation
- Environment protection

Facts:
- Countries: > 80
- Staff: > 4,500
- Sales: > 1,600 T€
The Final Products

- Aluminium-Systeme
- Stahl-Systeme
- Kunststoff-Systeme
- Bauelemente
- Solar-Systeme
- Schüco Design
The Business Process: Logistic

1. Extrusion Moulding
2. Wholesaling (Schueco)
3. Surface Coating
4. Final Construction
Sustainability and commercial organisations

Objectives: Make a Profit

Strategic Sourcing
- Saving money
- Improving supplier performance
- Minimizing risks

New supplier risks
- time
- support
- one-time costs
Strategies of Collaboration: Basic Condition

A complex product/service or an innovative product/service demands collaboration.

The type of collaboration depends on the

- market strength
- market situation
## Strategies of Collaboration: Sourcing

<table>
<thead>
<tr>
<th>Order Volume</th>
<th>Q u a l i f i e d S u p p l i e r s</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW</td>
<td>Few suppliers</td>
</tr>
<tr>
<td></td>
<td>- high setup/one-time costs</td>
</tr>
<tr>
<td></td>
<td>- guarantee the supply</td>
</tr>
<tr>
<td>HIGH</td>
<td>Lowest price</td>
</tr>
<tr>
<td></td>
<td>- low volume products</td>
</tr>
</tbody>
</table>

- **Collaborate**
  - few suppliers
  - high setup/one-time costs
  - guarantee the supply

- **Play the market game**
  - global sourcing

- **Lowest price**
  - low volume products

### Additional Notes
- Collaborate is important for the business and involves development partnership.
- Play the market game involves global sourcing.

---

Dembski/ Ewering/ Müller-Christ: Sustainable Supply Chain Management in Theory and Practice
### Apply the Model: Subcontracting (Coater)

<table>
<thead>
<tr>
<th><strong>Order Volume</strong></th>
<th><strong>Qualified Suppliers</strong></th>
<th><strong>Lowest price</strong></th>
<th><strong>Play the market game</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGH</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LOW</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Subcontracting (Coater)**
  - complex service
  - time critical
  - high quality needed
  - one-off cost

- **Collaborate**
Apply the Model: Body Leasing

<table>
<thead>
<tr>
<th>Qualified Suppliers</th>
<th>Order Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW</td>
<td>LOW</td>
</tr>
<tr>
<td>HIGH</td>
<td>HIGH</td>
</tr>
</tbody>
</table>

Lowest price

Body-Leasing

- short response time
- correct worker quality
- get the same person more often

Collaborate

Play the market game

Collaborate

Body-Leasing
### Apply the Model: Transport

<table>
<thead>
<tr>
<th>Order Volume</th>
<th>Qualified Suppliers</th>
<th>Transport</th>
<th>Collaborate</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>Lowest price</td>
<td>Play the market game</td>
<td>Collaborate</td>
</tr>
<tr>
<td>LOW</td>
<td>Play the market game</td>
<td>Transport</td>
<td>Collaborate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• special product</td>
<td>• non standard equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• high quality needed</td>
<td></td>
</tr>
</tbody>
</table>
Overview

• Introduction and Motivation

• Theoretical Framework
  • Sustainable Management
  • Supply Chain Management

• Practical Framework
  • Schüco
  • Examples

• Conclusion
Conclusion

Contributions:

- integration of a sustainable Management in global logistics (i.e. resource community)
- consideration on a dual understanding of success (i.e. efficiency and substance orientation)
- Long term partnerships
  - are already in process (were needed).
  - are not integrated in today's reward systems.
  - are not considered in today's cost accounting process.

Potential for further research:

- operationalisation for a sustainable supply chain management (i.e. identification and classification of indicators for sustainable cooperations)