B2C-Logistics in German Mail-order - Flow system modelling and empirical case studies

eCommerce Workshop

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ABSTRACT

B2C-Logistics has developed to be a decisive competitive factor in the German mail-order industry. Through the impact of Electronic Shopping the influence of B2C-Logistics is growing. Our application of research in logistics is based on a qualitative model to describe and explain B2C-Logistics systems in Germany. It includes the trade-offs in the system between its effectiveness and efficiency, the structure dimensions and the environment conditions. In our flow system model we distinguish four structure dimensions: Goods network, data network, relationship network, and institutional network, that need to be managed in different ways following individual goals. The model was adapted to six case studies in the German mail-order and parcel network industry.

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Jörn Herrmann is a researcher at the department of Business Administration and Logistics of Marburg University, Germany. Before and during his research he worked as a consultant with McKinsey & Company mainly in the logistics and mail-order sector. He studied Operational Research in Southampton, U.K. and Economics/Finance in Hagen, Germany.
AGENDA

- Industry background: B2C-Logistics most decisive competitive factor in German mail-order
- Flow systems model to describe and explain B2C-Logistics systems: Parallel network management necessary
- Empirical case studies in mail-order and parcel network industry validate qualitative model
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DEVELOPMENT OF MAIL-ORDER IN GERMANY
in bn. EUR p.a.

3 phases of development:
• 70s: Introduction of new logistics-services
• 90s: Boom through German reunification
• since 2000: Innovations through Electronic Shopping

Source: HOFFMANN (2002), pg.17.
 USAGE OF SALES CANNELS IN GERMAN MAIL-ORDER
in percent of total population in 2004 (in brackets 2002)*

- Classic mail-order **
  Total 48.1 (48.6)

  - 1-Channel-Customers
  - 2-Channel-Customers
  - 3-Channel-Customers

  29.3 (34.4)

- Online Shopping
  Total 26.3 (15.4)

  - 1-Channel-Customers
  - 2-Channel-Customers
  - 3-Channel-Customers

  14.0 (8.5)

- TV Shopping
  Total 6.3 (7.0)

  - 1-Channel-Customers
  - 2-Channel-Customers
  - 3-Channel-Customers

  1.1 (1.0)

* N=1000 (1004) representative German inhabitants > 14 years with telephone access
** Catalogue, booklets


- Classic mail-order continues to be the dominating sales channel with decreasing influence which is mainly driven by a strong decrease in 1-Channel-Customers (-5.1-pp.)
- Strong growth in Online Shopping (Total +10.9-pp.)
## SUITABILITY OF PRODUCT GROUPS FOR ELECTRONIC SHOPPING

Which product groups are suitable for distribution via Electronic Shopping (0= not suitable ; 4= very suitable)?

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Books/CDs/DVDs</td>
<td>4,0</td>
<td>3,9</td>
<td>3,5</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>3,5</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Computer (HW/SW)</td>
<td>3,4</td>
<td>3,5</td>
<td>3,0</td>
</tr>
<tr>
<td>Photo</td>
<td>3,4</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>HIFI</td>
<td>3,3</td>
<td>3,5</td>
<td>3,0</td>
</tr>
<tr>
<td>Small Electronics</td>
<td>3,2</td>
<td>3,3</td>
<td>3,0</td>
</tr>
<tr>
<td>DIY</td>
<td>3,0</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Apparel</td>
<td>2,9</td>
<td>2,5</td>
<td>2,4</td>
</tr>
<tr>
<td>Cosmetics</td>
<td>2,8</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>2,6</td>
<td>2,3</td>
<td>2,5</td>
</tr>
<tr>
<td>White goods</td>
<td>2,6</td>
<td>2,6</td>
<td>2,0</td>
</tr>
<tr>
<td>Jewellery</td>
<td>2,3</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Furniture</td>
<td>1,9</td>
<td>1,6</td>
<td>1,7</td>
</tr>
<tr>
<td>Food</td>
<td>1,4</td>
<td>2,1</td>
<td>1,4</td>
</tr>
</tbody>
</table>

Source: Company-Survey Marburg University.
### EVALUATION OF ATTRACTIVENESS OF PRODUCT GROUPS

#### Key drivers

- Market price transparency
- Observable quality differences
- Involvement in buying process
- Time pressure for delivery
- Risk of theft and pilferage
- Volume/weight/handling of products

#### Evaluation matrix

<table>
<thead>
<tr>
<th>Comparability of product groups</th>
<th>Evaluation matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparability from customer’s viewpoint</td>
<td>Expertise in logistics</td>
</tr>
<tr>
<td>Challenges in distribution logistics</td>
<td>Competition area</td>
</tr>
<tr>
<td>high</td>
<td>Risky area</td>
</tr>
<tr>
<td>low</td>
<td>Expertise in assortment</td>
</tr>
</tbody>
</table>

Source: Marburg University.
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FLOW SYSTEM MODEL TO DESCRIBE AND EXPLAIN B2C-LOGISTICS

- **Environmental conditions**: Definition of environmental factors and external frame of B2C-Logistics
- **Structure dimensions**: Inter-organisational description and explanation of organisations, systems, and processes
- **Effectiveness and Efficiency**: Analysis of process execution and systems regarding to input/output relations

Source: GÖPFERT (2001b), pg. 60.
ENVIRONMENTAL CONDITIONS OF B2C-LOGISTICS - OVERVIEW

<table>
<thead>
<tr>
<th>Impact on model parameters</th>
<th>Examples for influencing factors</th>
</tr>
</thead>
</table>
| Basis of business models in mail-order, parcel network logistics and return management | - Customer characteristics  
- Cost of factor input  
- Market volume / growth  
- Development of population |
| Impact of innovations on efficiency/effectiveness, and structural dimensions | - Traffic infrastructure  
- Warehousing-technology  
- IT-systems (e.g. RFID)  
- Delivery technology ("Last Mile") |
| Influence on stability and robustness of business models | - Regulatory-, price-, and investment policy  
- Distance trade law  
- Contract law, corporate law |

1. Socio-economical development
   - Basis of business models in mail-order, parcel network logistics and return management

2. Production technology
   - Impact of innovations on efficiency/effectiveness, and structural dimensions

3. Political / legal factors
   - Influence on stability and robustness of business models

Source: Marburg University
STRUCTURAL DIMENSIONS OF B2C-LOGISTICS - GOALS AND CONNECTIONS

Institutional network
Enabling of (idiosyncratic) investments

Data network
Transparency for cooperative decisions and production

Goods network
Creation of customer value & ROIC

Relationship network
Cooperative decisions for cooperative production

Source: OTTO (2002A), pg. 271.
The flow system model of B2C-Logistics is inhibited by variability, waste, and inflexibility.
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GOOD FLOWS IN MAIL-ORDER

1. Classical retail business
   - Sourcing/Purchasing
   - Procurement/Import
   - Warehousing/Picking and Packing

2. B2C parcel network
   - Distribution-logistics
   - Customer
   - Retro distribution-logistics (Returns)

3. Return management
   - Storage/Further use
   - Conditioning

Source: GÖPFERT (2000B), pg. 118.
CASE EXAMPLE LOGISTICS CENTRE OF MAJOR MAIL-ORDER COOPERATION

1. Classical retail business

   Sourcing/ Purchasing  Procurement/ Import  Warehousing/ Picking and Packing

Case studies:
- two major mail-order corporations
- one TV shopping retailer

Source: Marburg University
CASE EXAMPLE B2C PARCEL NETWORK

Case studies:
- German Post
- Private parcel network

Source: Marburg University
CASE EXAMPLE RETURN MANAGEMENT AT MAJOR MAIL-ORDER COOPERATION

3. Return management

Storage/
Further use

Conditioning

Case study
- major mail-order cooperation

Source: Marburg University
Panta rhei - everything flows.

(Heraclit)

References:


