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Research Question / Motivation

- Is there a relationship between the industry sector/position in the supply chain of a company and the choice of the technical integration of the information systems?
Uniform Case Structure

1 The Portrayed Company
  1.1 Background, Industry, Products, and Target Group
  1.2 Company Vision
  1.3 Meaning of IT and E-Business

2 Reason for the Project
  2.1 Starting Position and Reason for the Project
  2.2 Introduction of Business Partners

3 Individual Title for the Solution
  3.1 Business View/Objectives
  3.2 Process View
  3.3 Application View
  3.4 Technical View

4 Implementation and Operation
  4.1 Investment Decision
  4.2 Project Management/Change Management
  4.3 Programming and Roll-out of the Software
  4.4 Regular Maintenance

5 Experiences
  5.1 User Acceptance
  5.2 Fulfillment of Objectives and Changes
  5.3 Investment, Profitability and Financial Ratios

6 Success Factors
  6.1 Specialties of the Solution
  6.2 Reflection of "Yearly Focus Topic"
  6.3 Lessons Learned
Criterion 1: Direction of Integration

- **Vertical Integration**
  - The partners are in the same industry sector but at different positions in the supply chain

- **Horizontal Integration**
  - The partners are in the same industry sector and at the same position in the supply chain

- **Diagonal Integration**
  - The partners are in different industry sectors and at different positions in the supply chain
Criterion 2: Integration Scenarios

1. Parallel use of different information systems, manual external system access
2. Parallel use of different information systems, EDI with direct partner integration
3. Parallel use of different information systems, EDI provided by an intermediary
4. Joint use of a self-operated, central ERP system
5. Joint use of a central system operated by an intermediary
Scenario 1: Parallel use of different information systems, manual external system access
Scenario 2: Parallel use of different information systems, EDI with direct partner integration
Scenario 3: Parallel use of different information systems, EDI provided by intermediaries

Initiating partner

Collaborative business process

ERP client

ERP system

Order management

Accounting

Further ERP functions

ERP DB

Material master data

Customer data

Order entry data

Intermediary

Integration gateway

Integration functions

In some cases:

Further intermediaries

VAN

Data transfer

Format transformation

Order entry data

VAN

Data transfer

Format transformation

Digital signature

Archiving

Invoice data

Connected partner

Complementary process

ERP client

ERP system

Order management

Accounting

Further ERP functions

ERP DB

Material master data

Customer data

Order entry data
Scenario 4:
Joint use of a self-operated, central ERP system

![Diagram of Scenario 4]

- **Initiating partner**: Collaborative business process, ERP-Client, ERP system, Order management, Accounting, Further ERP functions, ERP-DB, Material master data, Customer data, Order entry data.

- **Locations**: Business process, Terminal server/Citrix Presentation Server, Web server.

- **Sales force**: Business process, Citrix client/Browser, Customers, Business process, Browser.

- **Service partner**: Business process, Citrix client/Browser.
Scenario 5: Joint use of a central system operated by an intermediary

**Supplier**
- Order processing
  - Browser/ERP client
  - ERP system
  - ERP DB

**Intermediary**
- Platform operation
  - Browser
  - Central platform
  - Order management
  - Accounting
  - Further ERP functions
  - DB
    - Material master data
    - Customer data
    - Order entry data

**Customer**
- Order entry
  - Browser/ERP client
  - ERP system
  - ERP DB
Case Profiles

- Industry
  - 44 “Wholesale and Retail Trade”
  - 30 “Manufacturing”

- Direction of integration
  - 82 vertical integration
  - 14 horizontal integration
  - 16 diagonal integration

<table>
<thead>
<tr>
<th>Case</th>
<th>Industry Sector*</th>
<th>Relationship</th>
<th>Main Role*</th>
<th>Partner</th>
<th>Partner Role*</th>
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</thead>
<tbody>
<tr>
<td>Cegelc</td>
<td>C MANUFACTURING</td>
<td>B2B</td>
<td>Manufacturer</td>
<td>Carlson Wagonlit Travel</td>
<td>Service Provider</td>
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<td>WyserAG</td>
<td>G WHOLESALE AND RETAIL</td>
<td>B2B</td>
<td>Wholesaler</td>
<td>Retail, Customer</td>
<td>Retail, Customer</td>
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<td>G WHOLESALE AND RETAIL</td>
<td>B2C</td>
<td>Wholesaler</td>
<td>Customer</td>
<td>Customer</td>
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</tbody>
</table>

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Integration Scenarios

Organizational Integration - Integration Scenario
Number of Integration Scenarios $K = 112$

- Scenario 1: 28
- Scenario 2: 47
- Scenario 3: 16
- Scenario 4: 15
- Scenario 5: 6
# Direction of Integration

<table>
<thead>
<tr>
<th>Integration scenario</th>
<th>Total (Percent)</th>
<th>Vertical</th>
<th>Vertical (Percent)</th>
<th>Difference</th>
<th>Horizontal</th>
<th>Horizontal (Percent)</th>
<th>Difference</th>
<th>Diagonal</th>
<th>Diagonal (Percent)</th>
<th>Difference</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>28 (25%)</td>
<td>24</td>
<td>29%</td>
<td>4%</td>
<td>0%</td>
<td>-25%</td>
<td>4</td>
<td>22%</td>
<td>4</td>
<td>-3%</td>
</tr>
<tr>
<td>2.</td>
<td>47 (42%)</td>
<td>31</td>
<td>38%</td>
<td>-4%</td>
<td>6</td>
<td>43%</td>
<td>1%</td>
<td>10</td>
<td>62%</td>
<td>20%</td>
</tr>
<tr>
<td>3.</td>
<td>16 (14%)</td>
<td>15</td>
<td>19%</td>
<td>5%</td>
<td>1</td>
<td>7%</td>
<td>-7%</td>
<td>0</td>
<td>0%</td>
<td>-14%</td>
</tr>
<tr>
<td>4.</td>
<td>15 (14%)</td>
<td>10</td>
<td>12%</td>
<td>-2%</td>
<td>4</td>
<td>28%</td>
<td>14%</td>
<td>1</td>
<td>8%</td>
<td>-6%</td>
</tr>
<tr>
<td>5.</td>
<td>6 (5%)</td>
<td>2</td>
<td>2%</td>
<td>-3%</td>
<td>3</td>
<td>22%</td>
<td>17%</td>
<td>1</td>
<td>8%</td>
<td>3%</td>
</tr>
<tr>
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<td>16</td>
<td>100%</td>
<td>16</td>
<td>100%</td>
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</tr>
</tbody>
</table>

*Table 2: Patterns emerging from different directions of integration*
## Industry Analysis

<table>
<thead>
<tr>
<th>Industry Sector and Integration Scenario</th>
<th>Manufacturing</th>
<th>Wholesale and retail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1</td>
<td>8 (27%)</td>
<td>12 (27%)</td>
</tr>
<tr>
<td>Scenario 2</td>
<td>12 (40%)</td>
<td>22 (50%)</td>
</tr>
<tr>
<td>Scenario 3</td>
<td>4 (13%)</td>
<td>5 (11%)</td>
</tr>
<tr>
<td>Scenario 4</td>
<td>6 (20%)</td>
<td>5 (11%)</td>
</tr>
<tr>
<td>Scenario 5</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

**Table 3: Scenarios found in manufacturing and wholesale/retail**
Conclusions 1/2

Integration Scenario and Direction of Integration

- For all directions of integration scenario 2 is the most commonly adopted.
- For vertical integration projects scenario 1 and 2 are the most common.
- For horizontal integration projects scenario 2 is the most common. In addition horizontal integration projects also appear more likely to implement scenarios 4 and 5 more often than vertical or diagonal integration project.
- Diagonal integration projects prefer scenario 2.
Conclusions 2/2

Integration Scenario and Industry Sector

- Wholesale/retail companies use integration scenario 2 slightly more than manufacturing companies.
- Manufacturing on the other hand shows a slight preference for scenario 4 in comparison to wholesale/retail.
- There is no evidence from the current study that wholesale/retail nor manufacturing companies use scenario 5. It will be interesting to look for the reasons for this in future research.
Thank you for your attention.

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