Integration Scenarios for Business Collaboration

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Topic Area

- **Business Collaboration**
  - The electronic support of processes *between different locations* of a company (e.g. manufacturing plants) as well as *cross-company processes* (e.g. order processing)
  
- **Focus:** ERP systems, business processes, and the transfer of business documents between the software systems

- **Business Collaboration in the literature:**
  - Inter-organizational systems [Klein 1996; Alt 1997]
  - Electronic data exchange (EDI)
  - B2B integration [Linthicum 2001]
  - Business networking [Österle, Fleisch, and Alt 2001]
  - Electronically-supported business activity between two or more partners
  - Predominantly associated with the technical connection of computer systems
Research Question / Motivation

- How do companies approach Business Collaboration?
- What is the role / importance of standards?
- What are the current problems and challenges?
Types of Case Studies

**IS Case Study**
- description of a company dealing with a certain IS problem

**IS Teaching Case**
- a description of a certain IS problem in a company and questions for classroom discussion

**IS Research Case**
- a description of a real world company and its experiences with a specific IS problem

**Cross-case Analysis**
- analytical comparison between multiple companies dealing with a similar IS problem

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Farhoomand 2004

Yin 1981
Bonoma 1985

Klein/Myers 1999
Eisenhardt 1989
The eXperience Method of Writing Research Cases
eXperience: yearly steps

Eisenhardt 1989 steps:
(1) Getting Started
(2) Selecting Cases
(3) Crafting Instruments and Protocols
(4) Entering the Field
(5) Analyzing Data
(6) Shaping Hypotheses
(7) Enfolding Literature
(8) Reaching Closure
eXperience: Channels

Call for Topics & Cases

Case Study Writing

Ralf Wölffe / Petra Schubert (Hrsg.)

Business Collaboration: Standortübergreifende Prozesse mit Business Software

eXperience Event
www.experience-event.ch

eXperience Database
www.experience-online.ch

eXperience Book

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Uniform Case Study 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
Application View: Example System Integration in a Trading Company

Legend

- **Customer**: online purchase
- **Role**: field of application/main processes
- **Presentation Layer/User Screen**: e-shop
- **Application Layer/Business Logic**: ERP system
- **Main Functions**: ERP database
- **Data Layer/Data Storage**: database
- **Most Important Information Objects (Data)**: order data, product data, customer data

Diagram:

- **Supplier**: sales processes, ERP client, ERP system, ERP database, inventory management, product data, inventory data
- **Trading Company**: all trading processes, ERP client, ERP system, inventory data, product data, order data, customer data, purchase order entry, additional product data, e-shop
- **Customer**: online purchase, browser
Application View: Forms of Integration

System 1

client

application

data

System 2

client

application

data

client access (also browser)

application integration (also EDI)

data replication
Cross-Case Analysis: Collaboration Scenarios

Learning from Business Practice in the Use of Business Software
## Case Studies 1-6

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Industry/Products</th>
<th>Supply Chain</th>
<th>Customers</th>
<th>Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLYCOM</td>
<td>Public administration</td>
<td>Service provider</td>
<td>A2A/ A2B</td>
<td>Information provider, notification of claim</td>
</tr>
<tr>
<td>Chocolat Frey</td>
<td>Food</td>
<td>Producer</td>
<td>B2B</td>
<td>Order disposition (VMI)</td>
</tr>
<tr>
<td>Candulor</td>
<td>Medical technology</td>
<td>Manufacturer</td>
<td>B2B</td>
<td>Processing of orders, materials management</td>
</tr>
<tr>
<td>INTERSPORT</td>
<td>Consumer goods</td>
<td>Retailer</td>
<td>B2B</td>
<td>Processing of orders (POS integration)</td>
</tr>
<tr>
<td>Switzerland</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laumann</td>
<td>Food</td>
<td>Manufacturer</td>
<td>B2B</td>
<td>Processing of orders, invoicing</td>
</tr>
<tr>
<td>tts</td>
<td>Food</td>
<td>Logistics provider</td>
<td>B2B</td>
<td>Warehouse management and transport</td>
</tr>
</tbody>
</table>
# Case Studies 7-14

<table>
<thead>
<tr>
<th>Company</th>
<th>Industry</th>
<th>Role</th>
<th>Transaction Type</th>
<th>Business Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEKA</td>
<td>Food</td>
<td>Retailer</td>
<td>B2B</td>
<td>Processing of orders</td>
</tr>
<tr>
<td>Sonax</td>
<td>Car wash products</td>
<td>Manufacturer</td>
<td>B2B</td>
<td>Logistics</td>
</tr>
<tr>
<td>RUTRONIK</td>
<td>Electronic devices</td>
<td>Distributor</td>
<td>B2B</td>
<td>Logistics and warehouse management</td>
</tr>
<tr>
<td>Pavatex</td>
<td>Construction and timber material</td>
<td>Manufacturer</td>
<td>B2B</td>
<td>Disposition, processing of orders</td>
</tr>
<tr>
<td>Vinothek Brancaia</td>
<td>Wine wholesale</td>
<td>Wholesaler</td>
<td>B2B/B2C</td>
<td>Processing of orders</td>
</tr>
<tr>
<td>Verein IFIS</td>
<td>Timber industry</td>
<td>Intermediary</td>
<td>B2B</td>
<td>Processing of orders</td>
</tr>
<tr>
<td>IMMO</td>
<td>Real estate management</td>
<td>Service provider</td>
<td>B2B</td>
<td>Processing of orders, invoicing</td>
</tr>
</tbody>
</table>
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

**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
  - Communication component
    - Access to ERP data
    - Portal
      - Portal DB
        - Documents

**Connected partner**
- Complementary process
  - ERP client
    - ERP system
      - Order management
      - Accounting
      - Further ERP functions
    - ERP DB
      - Material master data
      - Customer data
      - Order entry data
  - Browser
    - Portal
      - Portal DB
  - Documents
Scenario 2: Parallel use of different information systems, EDI with direct partner integration

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

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 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

Connected partner
- Complementary process
- ERP client
- ERP system
- Order management
- Accounting
- Further ERP functions
- ERP DB
  - Material master data
  - Customer data
  - Order entry data

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Scenario 4: Joint use of a self-operated, central ERP system
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
Reflections on Business Collaboration

- Five dominant effects through Business Collaboration:

1. an improvement of the *information flow* between different parties
2. an optimization of *processes* (time, costs, transparency),
3. the close *integration* with partners (especially logistics service providers),
4. the generating of *network effects* and
5. “*soft*“ factors
Summary Business Collaboration

- No „standard“ for Business Collaboration on the market
- Existing standards (such as provided by GS1) and infrastructures run by intermediaries are rarely used
- Solutions are technologically not „cutting edge“ but rather pragmatic and adapted to the needs of companies
- Future problem: heterogeneity of integration approaches will make global integration difficult to manage
- Potential: network effects through the use of intermediaries
- Vision: Business Software with integrated standard interfaces for the import/export of business documents based on international content and transfer standards using global address directories

Sending an electronic business document should be as easy as sending a letter using the postal service.
Thank you for your attention.

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