The ERP InnovationLab
Create the Future of Enterprise-Resource-Planning
Planning and control tasks as well as the data exchange in and between companies need to be supported by IT-systems.

Initial situation:

1. **Heterogeneous IT landscapes**

2. Missing **Systemintegration** (e.g. order processing by Fax)

3. too many **different data standards** (EDIFACT, Odette, etc.)

4. inflexible and **static planning algorithms** in actual IT-Systems (MRP II)

5. **no real time data capture of the order progress**

6. **no consequent use of auto-ID technologies** to enhance control mechanisms

<table>
<thead>
<tr>
<th>V: Sales</th>
<th>K: Construction</th>
<th>E: Procurement</th>
<th>F: Production</th>
<th>M: Assembly</th>
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The Bullwhip Effect – Causes and countermeasures

- Transmit information (PoS, actions, etc.)
- Supplier and customer integration
- Reduction of complexity with frame contracts
- Reduction of reaction time
- Everyday low prices: no promotions etc.
- Vendor Managed Inventory: Supplier takes care for stock
- Increase network transparency and flexibility
  - Stock visibility
  - Increase supplying frequency, reduce procurement/production
- Supply Chain fitting to functional/innovative products

- Local information processing
- Local planning at every location
- Economies of scale/ Lot-production
- Full-Truck-Load, Full Container
- Undefined performance indicators
- Lack of updating sales forecasts
- Orders pooling
- Price fluctuations
- Quota limitation and bottleneck “poker”
Supply Chain Management in the machine and plant manufacture industry - Integrated order management with myOpenFactory

**Status Quo**

- Relevant data structures of cooperation are standardized
- Provides inter-company negotiation functions
- The integrated order management is hindered by the use of a multitude of different ERP systems.
- The Implementation of 1:1 connections is expensive.
- The most used communication media are still letters and fax

**myOpenFactory**

- Relevant data structures of cooperation are standardized
- Provides inter-company negotiation functions
- Provides inter-company production planning functions
The ERP InnovationLab at RWTH Aachen Campus

Research within the ERP InnovationLab

„Create the Future of Enterprise-Resource-Planning“

- **Interoperability and Standardization**
  - How to achieve the technical and logical integration of various IT systems?
  - What is the value added of existing standards for the electronic data interchange (EDI)?

- **Information transparency in logistic networks**
  - What kind of technologies and IT systems are needed to realize an efficient exchange of information?
  - How can real-time information improve planning and control processes in logistics?
  - What is the value added by IT?
The ERP InnovationLab: Today

**Intention:**
- First illustration of a four stage supply chain in real ERP-Systems
- Demonstration of the „Bull-Whip-Effekt“ in ERP-Systems
- The handling with dynamic and interdependencies in supply chains can be analysed by using real ERP-Systems
- Visualise the performance of complex systems on a realistic „board“
Horizontal and Vertical Integration: The Gerry Weber Case
Connectivity of RFID- and ERP-Systems by standardized interfaces

Real-Time
...by horizontal and vertical integration
Integration

Supplier

GERRY WEBER

Retailer
Cluster Definition:

- Long Term Topic, >5 years
- Strong acceptance from industrial partners
- Intensive exchange between research results and industrial approval
- Minimum 3 research chairs (Professors) and min 10 industrial partners
- Each starting with min 10000 qm, 300 employees
Core Idea: Integration of kollaborative Innovation, Visualization, Communication and Transfer

- **Service Innovation Lab**
  - Product- & Performance Management
  - Process- & Organization Management
  - Network- & Partner Management

- **ERP Innovation Lab**
  - Interoperability
  - Standardization
  - Horizontal / Vertical Integration

- **Smart Objects Innovation Lab**
  - Technology – Scouting and Testing
  - Information Logistics
  - Standardization

- **Production Facility**
  - implementation and test-area of a real Supply Chain
Vielen Dank für Ihre Aufmerksamkeit