Agenda

Positioning of the Shop Floor Dispatching and Monitoring Tool
• Customer Pain Points, Interactions, Benefits, and Architecture

Dispatching and Monitoring Functionality
• Key Capabilities, General Structure

Additional Information
• Prerequisites, Value Proposition

Wrap-Up
Customer Pain Points

Planning processes decoupled from shop floor execution

Real world events not reflected in schedules

Paper or Excel-based allocation of manufacturing tasks to machines

Dispatching and monitoring tools decoupled

Third-party control panels not seamlessly integrated into SAP ERP processes

UI adaption of most control panels very cost-intensive due to old fashion UI techniques
## Use Case and Positioning

### Overview Planning Process

<table>
<thead>
<tr>
<th>Production Planning</th>
<th>Monthly / weekly planning buckets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detailed Scheduling</td>
<td>Weekly, daily planning buckets</td>
</tr>
<tr>
<td>Shop Floor Dispatching</td>
<td>Daily, shift, hourly, breakdown planning</td>
</tr>
<tr>
<td>Manufacturing Execution</td>
<td></td>
</tr>
</tbody>
</table>
Enables production supervisors, shift leads, and foremen to allocate production tasks to specific machines on a short-term basis.

Provides monitoring capabilities for the entire production process.

Supports the end user with easy to adapt, context-sensitive information.

In case of unforeseen events, easy adaption of the production schedule to the current situation.

Reflects the reality on the shop floor.

No heuristics and optimization functionality supported.
How Everything Began …

- **November 2010**: Presentation of the prototype of the Shop Floor at DSAG AK Production
  
  → 8 interested customers, 3 customer commitments

- **June 2011**: Development Start
Customer Interactions

- Common agreement on development scope with 10 DSAG customers (AK Manufacturing)
- Three customer visits on-site with 6-8 team members each
- Review of development progress after each sprint with all 10 customers (every 4 weeks); feedback was considered directly for next sprint planning
- Emailing
- Conference calls on demand (at least 1-2 per sprint)
- Workshops
- Usability tests
- Customer tests and Validation
- Ramp-up (14 customers, 8 from DSAG AK Manufacturing)
Example — Definition and Design of Work Load Area

1. Prototype

2. After first customer visit
3. After first customer review

<table>
<thead>
<tr>
<th>Resource</th>
<th>Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC 1</td>
<td>0001</td>
</tr>
<tr>
<td>WC 2</td>
<td>0002</td>
</tr>
<tr>
<td>WC 3</td>
<td>0003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order</th>
<th>Operation</th>
<th>Material</th>
</tr>
</thead>
</table>
| 54321    | 0010      | MATERIAL-B
| 12345    | 0010      | MATERIAL-A

![Shop Floor Dispatcher & Monitor](image)

**Workcenter: WC 1**
- Start 8:00 - End 17:00
- Break 1:00h - Working hours 8:00
Overview — Benefits

Highly intuitive and easy to adapt to end-user needs

Provides a unique user experience

Supports the end user to make fast, accurate, and pro-active decisions via context-sensitive visualization of production-relevant information

Fast retrieval of all relevant data via state-of-the-art search engine

Seamlessly integrated into SAP ERP 6.0
Architecture

Front-end application
- “Intelligent Client” for information and interaction in real-time with good performance
- Windows application based on .NET

Back-end application
- Persistency layer (database)
- >= SAP ECC 6.0
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Functionality — Overview

Dispatching

Interactive dispatching of operations on individual machines

Support of the following scheduling functions:

- Dispatch/Deallocate
- Insert, Find Slot, and Infinite
- Interrupt already-started operation
- Display of operation splits
- Creation of capacity requirement groups
- Fix/unfix

Visualization of alerts related to:

- Capacity overload
- Violation of operation relationships within one order
- Operations in the past
- Confirmed operations in the future
- Violation of planned date/time
- Propagation
- Changed machine capacity offering

Monitoring

Visualization of critical or unexpected issues, such as:

- Machine breakdown
- Delay of operations
- High-priority order

Confirmation status of operations

Visualization of setup, processing, tear down, and wait time

Display important order and operation dates

Display related capacity requirements

Order view to visualize complete order

Others

Refresh Functionality

Interactive setting of the front-end layout

Search Monitor

Alert and Log Monitor
General Structure

- **Ribbon Area**
- **Dispatching Area**
- **Work Load Area**
- **Control Area**

Shop Floor Dispatching and Monitoring Tool for SAP ERP
Dispatching — Overview

- Customizable visualization of order and operation dates
- Visualization of alternative machines
- Overlapping Production Tasks
- Wait Time
- Detailed Information
- Alert Indicator
Monitoring — Overview

- Refresh
- Confirmation status
- Manipulation of colors
- Visualization of wait time
- Visualization of non-working time
- Visualization of machine events
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Additional Information — Prerequisites

Back end:
- Prerequisite: ERP 6.0 EhP 0-6; production orders
- Back-end part delivered as Add-on via software download center

Front end:
- Prerequisite: Microsoft Windows 7 (XP, Vista)
- SFD&M build available via software download center

The software is available via the software download center: https://websmp105.sap-ag.de/swdc
Languages and Availability

Languages:

• For SP00: English, German, French, and Spanish
• For SP01: Chinese

Ramp-Up Start: November 12, 2012

18 customers and 10 partners in Ramp-up

General availability: April 12, 2013

Free of charge for ERP/Business Suite customers
Value Proposition

Flexible to adapt

Seamless Integration with SAP ERP

Easy to use

Increased Asset Utilization

Visibility of issues across systems

Reduction of Manufacturing Cost
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Where to Find More Information

• Manufacturing with SAP
  – Visit our global Website: www.sap.com/lines-of-business/manufacturing
  – SAP Service Marketplace Info Page SHOP FLOOR DISPATCHER 1.0: https://websmp105.sap-ag.de/~sapidb/011000358700001251272012E/Shopfloordisp_10.htm (requires login credentials)

• SAP Improvement Finder: www.sapimprovementfinder.com

• SAP Solution Explorer: www.sap.com/solutionexplorer
7 Key Points to Take Home

1. **Easy and intuitive assignment of manufacturing tasks to machines**
   Visualization of alternative machines, order, and operation dates

2. **Overview of manufacturing tasks per work center**
   Tailored to end-user’s need

3. **Visualization of production program**
   Defines the workload for the operator

4. **Monitoring functions**
   Visualization of confirmation progress, status of predecessor tasks, machine breakdowns, overload situations, visualization of high-priority orders

5. **Context-sensitive information**
   Information window and tooltips, easily adaptable to end-user’s need

6. **State-of-the-art search engine**
   Fast retrieving of orders, materials, and other relevant data

7. **Seamless Integration with SAP ERP**
   No interfaces required, no double maintenance of data
Questions?

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