SAP MII – Project Overview
SAPPHIRE
May 17, 2011
Bill Edmonds – B&G – President and CEO

Description: Employed at B&G Manufacturing Company since 1976 in various capacities. Participated in the first MRP implementation at the company (MAI Basic 4) in 1988. Involved with ERP System selection and implementation of SAP (R/3-3.1h) in 1998 as well as upgrade to ECC 6.0 in 2008.
Phone: 215.996.3331
E-mail: bedmonds@bgmfg.com

Jay Monahan – Dell - SAP Perfect Plant Lead

Description: Over 15 years systems design experience across multiple ERP package platforms (SAP & Custom), with experience in multiple industries including Automotive, Metals, Chemicals, Food, Internet Applications & Logistics Services. As SAP Perfect Plant Lead, responsible for planning, designing, managing & executing shop floor projects leveraging SAP MII.
Phone: 412.606.8001
E-mail: jay_monahan@dell.com
Company Overview:

- Headquarters - Hatfield, PA
  - 130,000 sq. ft. facility
  - 162 employees

- Distribution Center – Houston, TX
  - 40,000 sq. ft. facility
  - 8 employees

- Business Activities:
  - Fastener Manufacturing & Distribution
    - Catalog Products
    - Engineered Products
  - Medical Device Manufacturing
  - Machine Tool Manufacturing

- Privately held business since 1946
  - Third generation of family ownership
• Serving a wide variety of Industries Worldwide

• Two Product Distribution Channels
  – Independent Fastener Distributors (Indirect)
  – OEM Manufacturing Companies and End Users (Direct)

• Two Sales Channels
  – Call Center – Hatfield, PA
  – Internet Sales
B&G Product Applications:
1997 – ERP Selection Process

1998 – Go Live – SAP R/3 Version 3.1h - Initial Implementation:
  • Accounting (FI/CO)
  • Sales & Distribution (SD)
  • Material Management (MM)
  • Production (PP)
  • Quality Management (QM)

2008 – Upgrade to SAP ECC 6.0:
  • Document Management
  • Production Scheduling
  • Tooling & Gages (PRT)

2009 – Purchased SAP MII to address the following topics on the Employee Portal:
  • Labor Confirmations in Real Time
  • Schedule Visibility
  • Operator Performance Feedback
  • Kitting – Tooling & Gages
  • Paperless Factory Floor
  • CNC Program Downloading
  • Inspection Results Recording
  • Real-time Machine Monitoring
Selection of Development/ Implementation Partner:
• Initial choice resulted in failure – lost 1 year
• Evaluated three candidates – Selected DELL Services

Strategy and Diagnostic Session (4-6 weeks):
• Developed vision for multi-phase project
• Approved Scope for Phase I & Deployment Strategy – September 2010
  • Operator Dashboard
    • Production Activity (Labor & Quantity Confirmations)
    • Schedule Visibility (Work Sequencing)
    • Production Order & Document Visibility
    • Productivity & Quality Feedback
  • Supervisor Dashboard
    • Production Employee Overview with Drill-down to detailed activity
    • Maintenance Functions
  • HR Module
    • Maintenance Functions
  • Note: Items moved to Phase 2
    • Time and Attendance – Payroll Interface
    • Work Center Capacity Overview
Deployment Strategy:
• Initial - Medical Manufacturing (20% of plant activity)

Timeframe:
• Phase 1 started in October 2010 - go-live in January 2011

Resources:
• Dell — 2-3 staff
• B&G – 1 full-time and 3 partial

Phase 1 Scope:
• MII Software Upgrade to latest version
• Hardware & Network Evaluation (servers and wireless network)
• Write Detailed Functional/Technical Specifications (200+ pages)
• Coding
• Testing
• Training

Weekly Status Update Meetings – DELL Sharepoint
B&G - Shop Floor Strategy

Project Prep
- Assemble Team
- Establish schedule

Review Business Objectives

Review Current Business Processes

Conduct Workshops
- 2 Day Session
- 6 to 8 participants from Norwich
- SAP MII Requirements Planning
- SAP CO Review
- Define /Prioritize Requirements
- Identify Phases, Staffing Requirements & Timeline

Workshop Preparation

Create SAP MII Roadmap
- Project Phases
- Staffing Requirements, Timeline & Cost Estimates.
- Example Operator Dashboard
- Highlight Project Benefits

Summarize Workshop Results
- Requirements Matrix
- Assumptions

Management Review
- Review findings with Norwich Management for Project Approval

Update Project Charter

Timeline (July 2010 to August 2010)

10
MII Supervisor Portal
Real time status of production employees
- Active Operations
- Productivity Metric
- Quality Metric

MII Operator Portal
- Active Operations
- Dispatch List
- Operation Details
**MII Operator Portal**

**Gateway to the Paperless Factory**

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### MII Production Order View

- **BOM (Material Level)**
- **Production Operations**
- **BOM (Production Step Level)**
- **Operation Text**

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#### Table: Production Order Details

<table>
<thead>
<tr>
<th>Order</th>
<th>WC</th>
<th>Operator</th>
<th>Material Description</th>
<th>Operation Description</th>
<th>Status</th>
<th>OpQty</th>
<th>CompQty</th>
<th>Altered</th>
<th>Prod</th>
<th>Quality</th>
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#### Table: BOM (Material Level)

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<tr>
<th>Order</th>
<th>Material</th>
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<th>Hdr Qty</th>
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<td>2001</td>
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<td>0030</td>
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<td>0040</td>
<td>SAMPLE CHECK HARDNESS</td>
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<td></td>
<td></td>
<td>0050</td>
<td>P &amp; G TO GLASS BEAD</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2001</td>
<td>ROUND BAR 630 ANN .625 X R/L</td>
</tr>
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</table>

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#### Bar Code Scanner Output:

- **D/L # ZGLMEDGM005102.01696.NC**

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### Notes

- **ALL SET-UP NOTES ARE IN THE PROGRAM**: D/L # ZGLMEDGM005102.01696.NC
- **ALSO NEED (1) 1" INCH LONG TEST PC. IN ORDER TO PERFORM HARDNESS TEST AFTER HEAT TREAT**

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![Dell Manufacturing Company Logo](Dell.png)
Select Active Operation to Stop

Select from Dispatch List to Start an Operation

MII Conformations (Rules Based)

Quantity Good & Scrap

SAP Reasons for Scrap

MII Operator Portal

Forced Confirmations

Assures accuracy of Operator Data Input
MII Production Order
View
Connection to SAP
Document Management
### MII Reporting

- Work Center Capacity Planning
- Custom Grouping and Alerts
- Work Center Loading Analysis
- Active Operations
- Work Center Dispatch List

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**Work Center Loading Analysis**

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<tr>
<th>WC</th>
<th>Description</th>
<th>Status</th>
<th>Backlog</th>
<th>04/26</th>
<th>04/27</th>
<th>04/28</th>
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<th>05/02</th>
<th>05/03</th>
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<th>05/06</th>
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<td>34001</td>
<td>LASER MARKER (MEDICAL)</td>
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<td>102 1 / 19</td>
<td>8 / 19</td>
<td>15 / 19</td>
<td>34 / 19</td>
<td>21 / 19</td>
<td>15 / 19</td>
<td>19 / 19</td>
<td>25 / 19</td>
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<tr>
<td>36001</td>
<td>SMALL HOLE FDM DRILL AREA 5</td>
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<td>0 / 5</td>
<td>0 / 5</td>
<td>0 / 5</td>
<td>0 / 5</td>
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<tr>
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<td>MILL CNC (PALLET CHANGER) AREA 5</td>
<td>RUN</td>
<td>81 4 / 52</td>
<td>37 / 52</td>
<td>74 / 52</td>
<td>28 / 52</td>
<td>14 / 52</td>
<td>31 / 52</td>
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<td>30 / 52</td>
<td>8 / 52</td>
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</table>

**Order** | **Op#** | **Material** | **Description** | **Operation Description** | **ID** | **Name** | **Status** | **OpQty** | **CompQty** | **Elapsed** | **Prod** | **Quality** |
<table>
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<td>260795</td>
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<td>1635</td>
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</tr>
</tbody>
</table>

**Work Center Capacity %**

![Graph of Work Center Capacity %]

**Group Aggregate Capacity %**

![Graph of Group Aggregate Capacity %]
Real-Time Shop Floor Visibility in the Palm of Your Hands!

Employee View

Work Center View

Employee Group Performance Metrics

Dell Streak – 7”
Or Other JQuery compatible Devices

Individual Employee Performance Metrics

Line Grouping Performance Metrics

Individual Line Performance Metrics
MII – Integration Plan

- CNC Programs
- Tooling
- Kitting
- Inspection Gages
- Tool presets
- Inspection Results Recording
- Machine Monitoring

Order Info

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<td>SHAFT 630 H9000</td>
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Tooling Kitting

Machine Monitoring

Tool presets

Inspection Results Recording

Dell Manufacturing Company
Go-Live Issues (From the week of January 31st)
• The most common complaint is not in the application, but the discipline on the plant floor.
• Internet Explorer – Browser Issues (aka Blocked Pop-ups and Java issues).

Feedback from the Shop Floor: (February 2, 2011)
• Simple user interface.
• Easy access to Production Scheduling and Detail information.
• Document Management – Positive feedback from operators, positions B&G for paperless shop floor.

Interesting Fact: How do you know if a go-live is going well?
- Only 1 SAP MII coding issue was found in the first 6 hours of go-live and you feel comfortable enough to let your Dell SAP MII Technical Architect leave the plant.
Reason’s For Success:

• On the Day of Go-Live:
  • Dispatch system performance (from 30-90 seconds to 2-3 seconds)

• B&G modeled SAP MII after Shoptrac transactions

• Training: Early and often (2-3 weeks prior to go-live)

• Project Resources:
  • Experienced resources from both B&G and Dell were dedicated to the success of this project.
  • Dell Project approach (Example – Detailed Functional Design)
Bill Edmonds - B&G – President and CEO  
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Jay Monahan – Dell – Director/SAP Perfect Plant Lead  
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