Process and Data Integration with SAP.

Jan Sendelbach, Senior Solution Consultant
Gabriel Werner, Senior Solution Consultant
Agenda

- The golden rule: Technology for Integration is driven by Business Requirements
  - Integrating a Planning Module
    - Data Integration
  - Integrating an End-to-End SCM Solution
    - Process & Data Management
  - Integrating Planning & Execution
    - Real-Time Integration & Workflow Management
- Summary of technology & SAP certification
Joint sites

- Over 400 sites with SAP ERP integration
- SAP NetWeaver certified
- Integration tool agnostic
The 3 rules of integration architecture

• Golden Rule: Business drives technology
  – The level of technology used is driven by the business needs

• Silver Rule: Be Future-Proof
  – The integration architecture must survive future evolution
    • back-end systems
    • planning processes
    • technology upgrade

• Bronze Rule: Be Non-Intrusive
  – Adopt IT processes, tools and practices in use
Agenda

- The golden rule: Technology for Integration is driven by Business Requirements
  - Integrating a Planning Module
    - Data Integration
  - Integrating an End-to-End Planning Solution
    - Process & Data Management
  - Integrating Planning & Execution
    - Real-Time Integration & Workflow Management
- Summary of technology & SAP certification
Integrating a Planning Module: The Initial Confusion
Integrating a Planning Module

- **Business Requirements**
  - Planning Module needs Master (Static) and Transactional (Dynamic) data that is held in SAP

- **Challenges**
  - Handling volume of change records that SAP creates
  - Creating accurate mappings
  - Understand SAP data & middleware (iDocs, RFCs, BAPIs,...)

- **Strategy**
  - Use of data oriented middleware (ETL, FTP,...) to handle volumes
    - Business Drive technology / Be non-intrusive
  - Load into a Staging area to data can be cleansed and filtered
    - Be future-proof

- **Why JDA?**
  - Provides Template for mapping SAP data sources to JDA data targets (JDA Intellectual property from 400+ implementation)
Integrating a Planning Module

SAP ECC

- Master Data
- Inventory
- Sales History
- Shipping Notif.
- Price
- ...

JDA APS

- Forecast
- Planned Shipments
- Allocations
- Projected Inventories
- Promo. Plans

- Master Data
- Inventory
- POS Sales History
- Planned Orders/Scheduled Receipts
- Planning KPIs
- Delivery Data
- Price Management
- Orders
- Allocation

STAGING
Example: Financial Planning Focus

**Requirement:**
- Map Product Groups and materials to hierarchy requirements
- Map Calendar to hierarchy requirements
- Map location details to hierarchy requirements
- Load transaction data e.g. sales, orders, stocks

**Challenges:**
- Volume of change records that SAP creates
- Creating an accurate mapping

**Approaches:**
- Use ETL tool (e.g., JDA Integrator) and create a map of SAP data to staging tables
- SAP driven feed to staging tables or flat files

**Potential SAP iDocs**
- Category Data
  - WMERCAT01
- Master Data
  - ARTMAS01
- Pricing Data
  - INFREC01
  - COND_A01
- Purchase Orders
  - ORDERS03
- Shipping Notifications
  - DELVRY01
Example:
Transportation Planning Focus

Standard SAP iDoc

<table>
<thead>
<tr>
<th>IDoc</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPSLOC01</td>
<td>location master IDoc</td>
</tr>
<tr>
<td>TPSDL01</td>
<td>delivery note IDoc</td>
</tr>
<tr>
<td>TPSSHT01</td>
<td>shipment IDoc (inbound to SAP R/3) confirmation IDoc (outbound to Transportation Manager)</td>
</tr>
<tr>
<td>SYSTAT01</td>
<td>status IDoc</td>
</tr>
<tr>
<td>FIDCMT01</td>
<td>financial transactions for R/3 releases prior to 3.1H</td>
</tr>
<tr>
<td>ACLPAY01</td>
<td>accounts payment (carrier invoice) transactions for R/3 releases 3.1H or higher</td>
</tr>
<tr>
<td>ACLREC01</td>
<td>accounts receivable (customer invoice) transactions for R/3 releases 3.1H or higher</td>
</tr>
<tr>
<td>FIDCCP01</td>
<td>A/P and A/R accruals (general ledger) transactions for R/3 releases 3.11 or higher</td>
</tr>
</tbody>
</table>
Agenda

- The golden rule: Technology for Integration is driven by Business Requirements
  - Integrating a Planning Module
    - Data Integration
  - Integrating an End-to-End Planning Solution
    - Process & Data Management
  - Integrating Planning & Execution
    - Real-Time Integration & Workflow Management
- Summary of technology & SAP certification
Integrating an End-to-End SCM Solution
Integrating an End-to-End SCM Solution

• Business Requirements
  – Integrate multi-level plans with multiple data sources

• Challenges
  – Multiple data sources of various granularity and various batch cycles
  – Orphan data
  – Keep overall planning cycle inside a reasonable planning window

• Strategy
  – Extend Staging Area capability to Advanced Data Management
    • Extend API capabilities & data services (e.g., Excel Upload)
    • Provide Data Management processes for Synchronization, Net-Change, Enrichment,...
  – Centralize Data Management to minimize impact on SAP source systems

• Why JDA?
  – Pre-packaged Data Management Processes for SCM
    (JDA Intellectual Property from 400+ implementations)
Integrating an End-to-End SCM Solution

Corporate
- SAP ECC
  - DW
  - Pricing

Regional
- SAP ECC
- SAP ECC
- SAP ECC
  - PIM
  - BOM

Local
- Shop Floor
- Order Entry
- POS
- BOM

JDA Platform
- Data Management
- SCM Master Data
- Workflow
- Rules
- Data

JDA
- Master Planning
- Order Promiser
- Factory Planning

Copyright 2012 JDA Software Group, Inc. - CONFIDENTIAL
Agenda

- The golden rule: Technology for Integration is driven by Business Requirements
  - Integrating a Planning Module
    - Data Integration
  - Integrating an End-to-End Planning Solution
    - Process & Data Management
  - Integrating Planning & Execution
    - Real-Time Integration & Workflow Management
- Summary of technology & SAP certification
Integrating Planning & Execution

SAP ECC

Order Entry

Inventory

ERP Processes

JDA

Master Plan

Allocations

Planning Processes
Integrating Planning & Execution

• Business Requirements
  – SAP Processes must be intertwined with JDA SCM Processes in Real-Time
    • E.g.: Order managed from SAP SD and quoted for feasibility in JDA
  
• Challenges
  – Understand SAP processes exit & entry points (user exists)
  – Critically of transaction integration (high availability / high volumes)
  – Sophisticated workflow management for compensations, 2-phase commits,..

• Strategy
  – Use of message oriented middleware (JMS, web services,.. )
  – Extend Platform usage to Transaction & Workflow management

• Why JDA?
  – Provide packaged workflows for On-line Integration to SAP capable of handling high-volumes and high-availability
Integrating Planning & Execution

SAP ECC

ERP Processes

Order Entry

Inventory

MOM

JDA

SAP ECC

Process

WSDL

JMS

XML /http

JDA Platform

i/o rule

Workflow

Rules

Data

Master Plan

Allocations

Planning Processes

Copyright 2012 JDA Software Group, Inc. - CONFIDENTIAL
JDA Order Promiser Processes

Example

1. Demand Planning
   - World-wide Sales
     - International Sales
     - GER Sales
       - Western Region
       - Central Region
       - Eastern Region
   - July 100

2. Forecast profiling & netting
   - Profiled Forecast
     - July: 20 30 40 10

3. Master Planning
   - Propagate demand
   - Project Supply
     - July: 20 30 10
     - Total supply = 90

4. Allocation Planning
   - ATP (weeks)

5. Order Promising
   - Order due 7/11 Daimler 20
   - Promise due 7/11 Daimler 20
     (Custom Search Path)

Disaggregation
- World-wide Sales
  - International Sales
    - Western Region: 10
    - Central Region: 0
    - Eastern Region: 28
  - GER Sales: 2
  - AATP (July)
    - Daimler: 15
    - BMW: 25
Order Management Integration Example

Order Capture

Order Translation

Order Promise

Order Translation

Lights Out, Seamless & Real Time

Promise Review

Order Mgmt

Order Promiser

Order Confirmation

Order Cancellation

Order Change
SAP ECC ERP Integration Example

Capturing Order Relevant Information

- Multi dimensional quotes
- Pegging Details
- Saved transaction in OMS
Agenda

- The golden rule: Technology for Integration is driven by Business Requirements
  - Integrating a Planning Module
    - Data Integration
  - Integrating an End-to-End Planning Solution
    - Process & Data Management
  - Integrating Planning & Execution
    - Real-Time Integration & Workflow Management
- Summary of technology & SAP certification
Summary of technology

### Interface Technology & Capability

<table>
<thead>
<tr>
<th>Standard Data Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data is uploaded directly to the inbound staging area through traditional tools such as ETL, SQL Loads, EAI, etc...</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Basic SOA extension:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staging &amp; Master tables can be exposed through JDA ABPP on various middleware including: Web Services (WSDL), JMS or direct XML/HTTP post.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advanced API enablement:</th>
</tr>
</thead>
<tbody>
<tr>
<td>By using the rule and workflow capability of the JDA ABPP, advanced APIs are created, combining several staging or master tables and specific business rules</td>
</tr>
</tbody>
</table>

### SAP Middleware

- BI Staging (BADI, Infospokes)
- ALE/iDocs
- RFC (ETL)

### Integration Middleware

ETL, SQL Loads,...

### JDA Platform

- Web Services (ECC native, XI/PI)
- Web Services (ECC native, XI/PI)

### JDA

Workflow
Rules
Data

Copyright 2012 JDA Software Group, Inc. - CONFIDENTIAL
Integrating to SAP: methods & certifications

Interface Technology & Capability

Direct Data Integration
Data is uploaded directly to the internal interface tables through traditional tools such as ETL, SQL Loads, EAI, etc...

Basic SOA extension (*):
Interface tables can be exposed through JDA Platform on various middleware including: Web Services (WSDL), JMS or direct XML/HTTP post.

Advanced API enablement (*):
By using the rule and workflow capability of the JDA Platform, advanced APIs are created, combining several interface or master tables and specific business rules.

(*) SAP Certified
Joint sites

- Over 400 sites with SAP ERP integration
- SAP NetWeaver certified
- Integration tool agnostic
What do You think?