Improved Master Data Governance Through Workflow

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Learning Points

- Benefits of using SAP Business Workflow to maintain master data
- Impact of different approaches to timing and availability of master data changes
- Restrict authorizations and use workflow routing instead
Session overview

- Introduction
- Design considerations
- Authorization and routing
- Tips and best practices
SAP tools for Master Data Governance

- **NetWeaver Business Process Management**
  - Preferred for multi-system processes (SAP + non-SAP)
  - Easy to model
  - Low integration (designed to be system-independent)

- **SAP Business Workflow**
  - Highly integrated with SAP data, org structures, authorization concept
  - Great choice for pure ABAP system environment without MDM
    - E.g. SAP Business Suite, ECC

- **SAP MDM**
  - Dedicated SAP solution for master data management
  - Has custom workflows built in or can work with NWBPM
Case study: Workflow capability

- Material Master workflow at an international manufacturer

- Create/change could involve over 30 business areas
  - Marketing, Sales, Finance, Manufacturing, Environmental, Legal, Packaging, Logistics, various industry specialists, etc…
  - Some steps were on a for-each-plant/country basis
  - Result: One workflow process could have over 100 participants!

- Previously took many months to co-ordinate over email

- With Workflow, turnaround was 4-6 weeks
  - 2-3 weeks in ‘rush mode’
  - Provided clear audit trail of who did what and when
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Two important design questions

- Before you start, ask:
  
  - Does the change process affect ongoing business processes?
    - What if the master record being changed is active?
      - Example: Customer has open invoices, material is on an open order
      - Usually not a problem for new data or minor/noncritical changes
      - If nothing affected, change can be done online

  - Should data remain available during the change?
Online vs. Offline Approval

- **Online change**
  - Changes are immediately available
  - Suitable for minor changes, or approver carrying out the change
    - Example: Customer credit increase performed by credit control
    - Segregation of duties possible: No permission to initiate the process

- **Offline change**
  - More common, used if updates should not be used until changes are complete and approved
  - Example: Vendor bank details

- **Availability control**
  - Block data if it should not be used during the process
  - Example: Material change
Change strategies – The building blocks

WF Scenario 1: Online change, productive use throughout
- Create / change data
- Approve (if applicable)
- Done

WF Scenario 2: Online, no productive use until complete
- Block data usage
- Change data
- Approve change
- Unblock data
- Done

WF Scenario 3: Offline, productive use of old record during change
- Copy for update
- Change temp copy
- Approve change
- Update master record
- Done

Simplified approval process shown here, does not take into account rejection/ rework etc.

Possible to combine 2 & 3 to block and copy data, e.g. if updates are frequently rejected/discarded, or if data may be needed at short notice.
Blocking master data

- Different strategies for blocking master data:
  - Easiest: Look for built-in mechanisms
    - Example: Vendor payment block
  - Can a customizing value be adapted?
    - Example: Configure a custom plant material status
  - Last resort: Custom field/value
    - Must be checked in enhancements/user exits 😞
- Tip: Look for least intrusive option
Mirroring the master data tables usually not a good idea
- Tables change
- Not as well supported by SAP

Instead, identify APIs to read/write the data
- Fully supported by SAP
- **Keeps auditors happy 😊**
- Changes usually compatible
- Can be extended with own data
- Use transaction BAPI to browse available BAPIs
- Use SE37 to search for BAPI_* function modules
Where should data be stored?

- Can create custom tables to mirror the needed BAPI structures
  - No need to save all of them if only changing some data

- Can be saved in workflow container
  - Define a structure with all BAPI data parameters
  - Not ideal if it’s too big or workflow too complex
  - Not easy if it needs to be accessed from outside workflow
  - Requires XML containers
Changing data

- Full transaction can provide more access than is desirable
- Often also more cumbersome for users
  - Important when users process many per day
- Alternatives:

<table>
<thead>
<tr>
<th>Size of change</th>
<th>Implementation options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 fields</td>
<td>Recommended: Popup box</td>
</tr>
<tr>
<td></td>
<td>Function modules POPUP_GET_VALUES*</td>
</tr>
<tr>
<td></td>
<td>e.g. POPUP_GET_VALUES_DB to do value lookups</td>
</tr>
<tr>
<td>&gt;5 fields up to 50% of data</td>
<td>Custom form in a function module</td>
</tr>
<tr>
<td></td>
<td>Custom transaction</td>
</tr>
<tr>
<td>&gt; 50% of fields</td>
<td>Standard transaction</td>
</tr>
<tr>
<td>Any of the above</td>
<td>Custom web form (WebDynpro) for portal users</td>
</tr>
</tbody>
</table>
Case study: Multiple changes

- Scenario: Individual changes to groups of materials

- Benefits:
  - Users can work faster
  - Simplified log
Participant roles

- Approvals
  - Compliant audit trail
  - "One Click" approvals possible via email and UWL

- Decisions
  - Decision makers should be just that
  - No need to get involved in tasks that can be automated

- "Do-ers"
  - User executes a function or adds data
  - Transaction, custom form, webpage, popup box
Participant roles 2

- Interested parties
  - Don’t need to do anything
  - Can be an email step
    - Email is one-way communication – no audit that it has been received or read
  - Tip: Use notification step instead of email to log read confirmation
    - Either a decision with one outcome, or
    - A dummy task with ‘Confirm end of processing’ set

- System
  - Tasks performed in background
  - Carried out under system authorization (SAP-ALL)
  - E.g. Update data, create account, etc.
Session overview

- Introduction
- Design considerations
- **Authorization and routing**
- Demo
- Tips and best practices
Targeted access control

- **SAP Authorization concept**
  - Usually restrict access to a business area
  - E.g. Plant, Sales Org

- **Workflow**
  - Possible to remove authorization completely from most users
  - Delivers individual records to the person(s) who should work with it
Workflow agent determination

- Possible agents defined during build/design
  - Too often ignored in practice!
- Recipients are:
  - Possible AND responsible
  - But NOT excluded

Possible agents
- Defined at design time
- Authorization roles, org units, positions
  - e.g. All Sales Managers

Responsible Agents
- Dynamic, determined at runtime based on data
- HR structures, WF rules, custom tables/code, BRF+
  - e.g. UK Managers

Excluded Agents
- Static or dynamic
- e.g. Workflow initiator

Work item recipient(s)
CALL TRANSACTION

- ABAP CALL TRANSACTION statement
  - Transaction authorization check must be explicitly coded
  - Standard BOR object code does NOT implement auth check
  - Many developers don’t bother… security risk!

- Enhanced security
  - User does not need access to transaction
  - Workflow can deliver transactional access to a single record

- But BEWARE:
  - Transaction must not allow switching to another document
  - If your workflow routing is wrong, whoever gets the item can action it
Consider forwarding

- Work items can be forwarded
- Task attributes determine forwarding possibilities
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- Authorization and routing
- **Demo**
- Tips and best practices
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**Tips and best practices**
The secret to success

- Work together!
  - Sounds obvious, but doesn’t always happen
  - Not everyone is aware of capabilities or requirements

- Build Prototype

- Demo often
  - Demo workflow steps help visualize, even if functionality doesn’t yet work
  - Use single-decision or popup steps as placeholders for functions under development
Tips and best practices

- Spend time on agent determination and routing
- Build a prototype and work closely with key users
- Task descriptions appear in the log
  - Make them useful for users!
  - Hide tasks that users don’t need to see
- Use deadlines, escalations and reminders sparingly
  - Powerful features, but…
  - Used too often makes people ignore them
Key Learnings

- Workflow is a useful, highly integrated tool suitable for governance processes on ABAP-only systems
- Know the different options of timing and availability of changes
- Understand differences between authorization and routing and how they can be made to complement each other
Further resources

- **Practical Workflow for SAP (2nd Edition, SAP Press)**
  - [http://www.workflowbook.com](http://www.workflowbook.com) or your favourite online retailer
  - All author’s proceeds donated to Medicins Sans Frontiers
    - Buy it and help make the world a better place!

- **Workflow Certification**
  - *SAP Certified Development Associate - SAP Business Workflow with SAP NetWeaver 7.0*
  - Go to [training.sap.com](http://training.sap.com) and search for course code C_BITWF_73

- **SCN Workflow space**

- **SAP Workflow user group (WUG) mailing list**
Thank you for participating.

Please remember to complete and return your evaluation form following this session.

For ongoing education on this area of focus, visit the Year-Round Community page at www.asug.com/yrc