SIM209

Workflow for Workflow's Sake
Or, how I stopped fearing organizational change
and learned to love the HR events

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Wednesday, October 14, 2009

ɑSUG

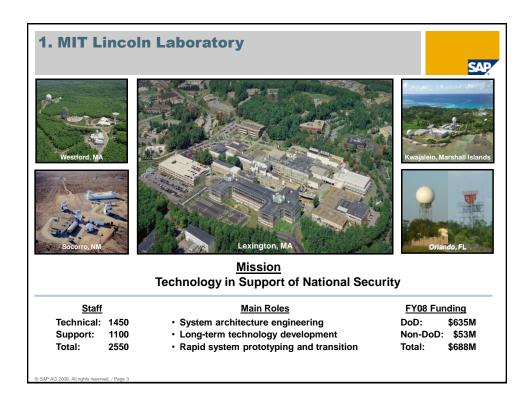**SAP TECHED 09**

Agenda

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1. **Introduction to MIT Lincoln Laboratory**
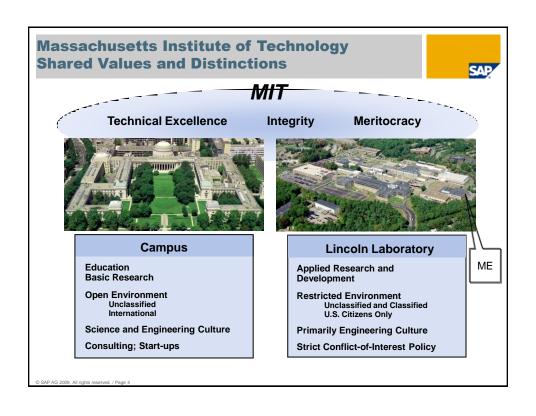   - Who we are, what we do
   - MIT LL SAP Systems Landscape
   - HR data, Basis Authorizations, Substitutes
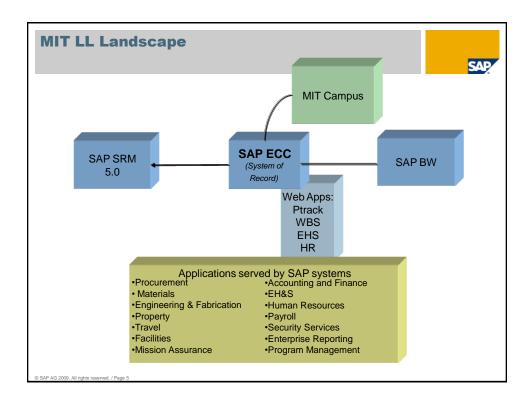   - Risks
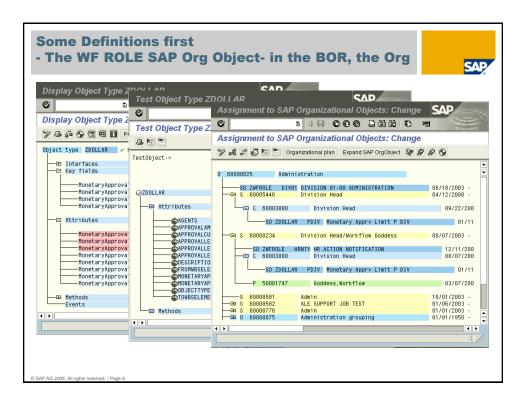   - Why Workflow?

2. **Technical info**
   - Workflow Estimation Tool
   - Triggering point, back-out option
   - Workflow Estimation Tool
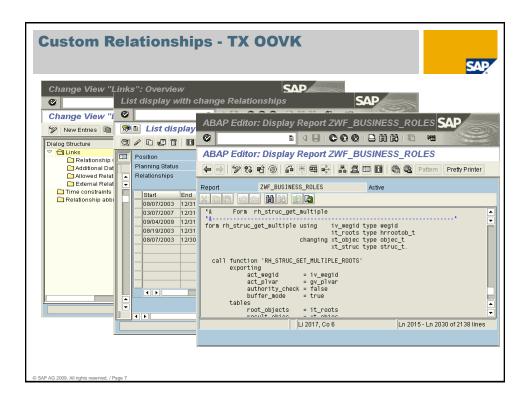   - Simple methods for simple minds
   - Code Snippets for you to use too!

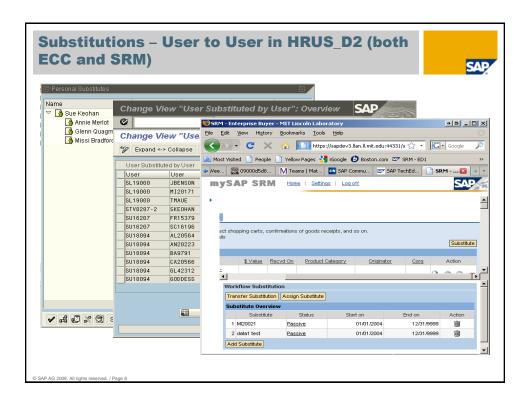3. **In real life (lessons learned)**

1. MIT Lincoln Laboratory

Westford, MA

Socorro, NM

Lexington, MA

Kwajalein, Marshall Islands

Orlando, FL

Mission
Technology in Support of National Security

Staff		Main Roles	FY08 Funding	
Technical:	1450	• System architecture engineering	DoD:	$635M
Support:	1100	• Long-term technology development	Non-DoD:	$53M
Total:	2550	• Rapid system prototyping and transition	Total:	$688M

Massachusetts Institute of Technology
Shared Values and Distinctions

MIT

Technical Excellence   **Integrity**   **Meritocracy**

ME

Campus

Education
Basic Research

Open Environment
   Unclassified
   International

Science and Engineering Culture

Consulting; Start-ups

Lincoln Laboratory

Applied Research and Development

Restricted Environment
   Unclassified and Classified
   U.S. Citizens Only

Primarily Engineering Culture

Strict Conflict-of-Interest Policy

MIT LL Landscape

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MIT Campus

SAP SRM 5.0

SAP ECC
(System of Record)

SAP BW

Web Apps:
Ptrack
WBS
EHS
HR

Applications served by SAP systems
- Procurement
- Materials
- Engineering & Fabrication
- Property
- Travel
- Facilities
- Mission Assurance
- Accounting and Finance
- EH&S
- Human Resources
- Payroll
- Security Services
- Enterprise Reporting
- Program Management

Some Definitions first
- The WF ROLE SAP Org Object- in the BOR, the Org

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3

Custom Relationships - TX OOVK

Substitutions – User to User in HRUS_D2 (both ECC and SRM)

Substitute Management – Some tools

Repository Info System: Function Modules Find (9 Hits)

Function group	Function group short text
Function Module Name	Short text for function module

SWRS
SAP_WAPI_SUBSTITUTES_GET
SAP_WAPI_SUBSTITUTE_ACTIVATE
SAP_WAPI_SUBSTITUTE_DEACTIVATE
SAP_WAPI_SUBSTITUTE_DELETE
SAP_WAPI_SUBSTITUTE_MAINTAIN
SAP_WAPI_SUBSTITUTE_PROF_GET
SAP_WAPI_SUBSTITUTIONS_GET
SAP_WAPI_SUBSTITUTION_ADOPT
SAP_WAPI_SUBSTITUTION_END

Enhancement Spot   Edit   Goto   Utilities   Enhancement Implementation

BAdI Builder: Initial Screen for Definitions

- ◉ Enhancement Spot   WF_SUBSTITUTE
- ○ BAdI Name

Display   Change   Create

New Selecti

Our Data

Person

is linked to

Holds → Position

Reports to

Workflow 'Roles'

Group 1

Department 1

HR Relationships

Approves: Shopping Carts, POs, PO-CV, Invoices, Via Workflow

NB: Although I hate to mention Notifications in the
same context of workflow – holders of workflow roles and custom relationships
Are also the recipients of workflow-generated notifications

5

Our Data...

Person   is linked to

Holds → JOB → Workflow 'Roles' → Approves: Shopping Carts, POs, PO-CV, Invoices, Via Workflow

---

Our Data...

User   is linked to

Holds → USERID → Substitutes for, or is substituted by → Another USERID

Approves: Shopping Carts, POs, Invoices, Via Workflow

BW

SRM

Basis Authorizations in ECC → Approves: Time Via Basis Auths

6

Our Data (well, not really)

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Sample:

- Ryan works at the head office, and he designates Kelly as his *substitute*

- Michael – works for Scranton Office. He approves Shopping Carts (via role assignment to his *Job*) and designates Jim as his substitute

- Jim can approve anything sent to Michael via Workflow because of *substitution*

- Dwight also can approve whatever Michael can approve – via assignment of a Workflow 'role' to his *Position*

- Pam approves Time for Scranton via her *Basis authorizations*

So, what happens in a Real "Office"?

Our Data, and what happens with it

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- Michael – leaves the office, but doesn't un-delegate his substitutes

- Jim – transfers to NY, but still holds Michael's substitute authority

- Pam – transfers to Sales, but can still approve Time via Basis Authorizations

- Ryan – gets fired for drug abuse – but Kelly gets very sad when she sees him on her list of substitutes.

- Dwight – gets just plain upset because he sees who has invalid approvals and authorizations

Risks (simplified)

Jim can approve any purchases made for the Scranton Office, if Dwight doesn't approve it first. He can also finish any of Michael's 'leftover' workitems

Pam can approve the Time for anyone in the office, even though it is Kelly's new job

Kelly gets upset every time she tries to substitute for someone and sees Ryan's name

Dwight is furious because, well, he's Dwight

Why Workflow?

We could have implemented a manual process – involving several teams .

HR Department	Basis Team	Workflow Team	Auditors?

Well then, whyever not???

Potential for dropping the ball

Tedious

Time/Resource consuming

Some sensitive data is better off with fewer hands

Why Workflow?

Could have implemented a background job to just sweep through delimited personnel numbers

But we also need to be able to audit the process – and provide a 'back door in the case where authorizations *needed* to be retained.

No Black Holes!

Why Workflow?

Triggers automatically

No Hand-offs

Changes logged and easy to find

Opt-out controlled by HR

Using workflow (from a workflow developer's point of view) was a natural fit!

Assemble your Tribe...

- **Identify Stakeholders**

  HR was a natural fit – the triggering point involves their process(es)

  Basis/Security Group too – they 'own' some of the data

  The LL Business Owners needed representation - as this project would impact them the most

Assemble your Tribe

Team Members

- Workflow Developer
- One ABAP Developer
- Basis Team
- Business Users
- HR/IS for testing and validation

Document the proposed change!
Show the old .vs. the new

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Current Process

Employee
- Person 1
- Lives in a Group or Division
- Holds Basis/Security Roles
- Holds Workflow Roles
- Has Workflow Relationship (Certified User)
- Has Substitutes
- Subsitutes For

Date of Transfer, arrives in new group

Person transfer to new Group is effective

Person 1

Approves Time or Procurement for OLD Group due to inappropriate data

No longer lives in **THIS** Group or Division
Holds Basis/Security Roles
Holds Workflow Roles
Has Workflow Relationship (Certified User)
Has Substitutes
Subsitutes For

Lives in a **NEW** Group or Division
Holds Basis/Security Roles
Holds Workflow Roles
Has Workflow Relationship (Certified User)
Has Substitutes
Subsitutes For

Group/Division
- Transfer Initiatedby: A. Person, B. Group/Div, C. HR (Re-org)
- Throws a good bye party?

HR/WSC
- Delimits Person's (Position's) Relationship to Old Group, Creates New One
- Performs Personnel Actions to complete Personnel Transfer
- Wait for Delimit/Transfer Date

'New' Group

SAPHelp/Basis/WF
- Sends SAP Authorization Form, with Time Entry/Approval Roles, WF Roles, Requests for Substitutions
- Grants the requested attributes
- Requests for Clarification

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MCBR – Proposed Process

Employee
- Person 1
- Lives in a Group or Division
- Holds Basis/Security Roles
- Holds Workflow Roles
- Has Workflow Relationship (Certified User)
- Has Substitutes
- Subsitutes For
- Initiates Transfer to another Group

Date of Transfer, arrives in new group

Person transfer to new Group is effective

Person 1

Lives in a **NEW** Group or Division
Holds Basis/Security Roles
Holds Workflow Roles
Has Workflow Relationship (Certified User)
Has Substitutes
Subsitutes For

Group/Division
- Throws a good bye party?

HR/WSC
- Delimits Person's (Position's) Relationship to Old Group, Creates New One
- Performs Personnel Actions to complete Personnel Transfer
- Wait for Delimit/Transfer Date

Workflow Process to Delimit Old Authorizations, WF Roles and Relationships, Substitutions

'New' Group
- Report on desired authorizations
- Sends SAP Authorization Form, with Time Entry/Approval Roles, WF Roles, Requests for Substitutions

SAPHelp/Basis/WF
- Workflow Process to Delimit Old Authorizations, WF Roles and Relationships, Substitutions
- Grants the requested attributes

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Gain consensus

Agree on what is in – and out – of scope

Agree on an acceptable recurring meeting time-line. Spontaneous 'fluid' meetings don't seem to be attended well

Agree on responsibilities for the duration of the project. Our Business sponsors knew their roles.

Document your project

- 'Project Charter'

- Documentation of resource utilization

- The risks clearly delineated

- Documented meeting minutes

2. Technical Info – the overview

- **Delimiting Basis roles was easy – we already had the hook**

- **A small workflow to delimit authorizations and substitution data was quickly developed and implemented**

- **The HR data (data related to a position) was more tricky…**

Data, data – who owns the data?
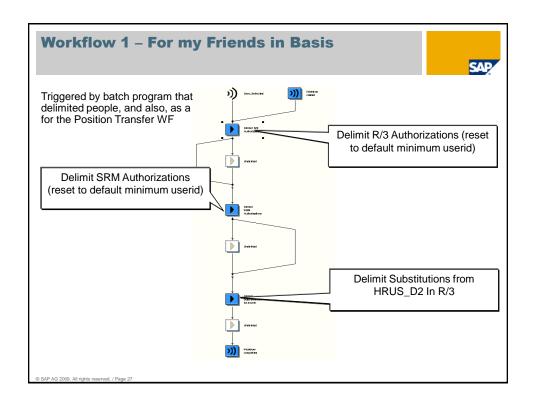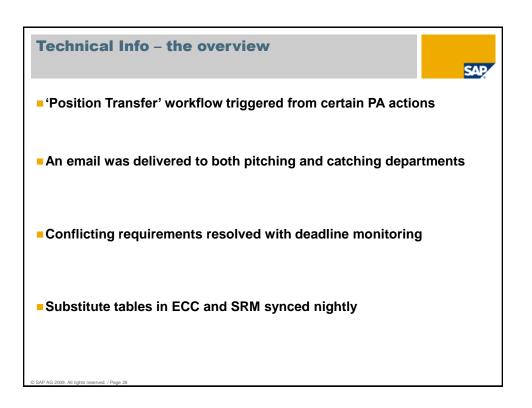
Business Object ZUSER
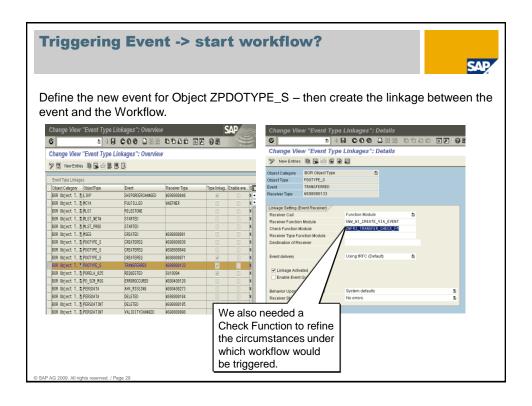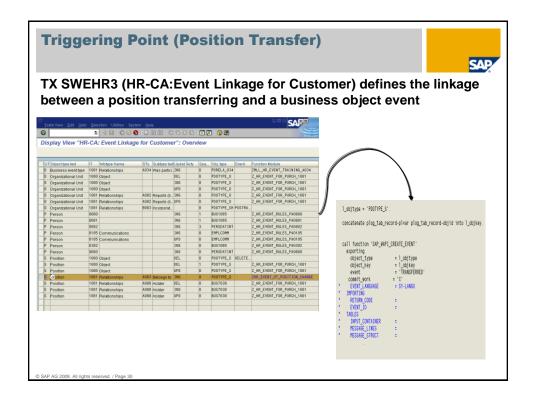
- Enhanced with a few new attribute
- Delegated from SAP object USER
- Instantiated from object ZPDOTYPE_S
- Code snippets here:

Workflow 1 – For my Friends in Basis

Triggered by batch program that
delimited people, and also, as a
for the Position Transfer WF

Delimit R/3 Authorizations (reset
to default minimum userid)

Delimit SRM Authorizations
(reset to default minimum userid)

Delimit Substitutions from
HRUS_D2 In R/3

Technical Info – the overview

- **'Position Transfer' workflow triggered from certain PA actions**

- **An email was delivered to both pitching and catching departments**

- **Conflicting requirements resolved with deadline monitoring**

- **Substitute tables in ECC and SRM synced nightly**

Triggering Event -> start workflow?

Define the new event for Object ZPDOTYPE_S – then create the linkage between the event and the Workflow.

We also needed a Check Function to refine the circumstances under which workflow would be triggered.

Triggering Point (Position Transfer)

TX SWEHR3 (HR-CA:Event Linkage for Customer) defines the linkage between a position transferring and a business object event

Check Function, please?

- **Were events triggered by automated processes?**

- **Was this an 'empty' position that was being moved?**

- **Was this a new position – that had no prior organizatonal relationship?**

- **Were the actions performed retroactively?**

Workflow 2 – Clean Slate

A little more complex because we wanted to *allow* HR to decide if they wanted the workflow to proceed – but we did not want to *make* them act on each one.

A requested end date, based on the date that the person leaves a department

HR Opt-Out option

Wait, Allow User Decision Task to proceed

Delimit Position &1 for Person &2

Decision Step in Workflow

Delimit Position 90019211 for Person Pernr2,DirXML2

Choose one of the following alternatives
Yes, proceed with workflow processing
No, cancel the process to delimit roles
Cancel and keep work item in inbox

Delimit R/3 Relationships

Set User_Decision to 'X' (Cancel)

More Clean Slate...

Delimit R/3 Relationships

Delimit custom relationships – RH_CUT_INFTY_1001_EXT_GENERIC

Delimit Workflow Roles

Delimit SAP Org Objects (WF Roles) assigned as Infotype 1208 using RH_PNNN_MAINTAIN

Bypass Authorizations Delimit if UserObject

If there is a user ID linked to the person, then call the Sub-Workflow to clear their auths

0e have a Userid, delimit authorizations

UserDelimit: Roles and Auths clear

In Real Life (Lessons Learned)

- **Additional reporting to business users**

- **Ensured data integrity by syncing up the substitute tables**

- **Communication was key – should have had more!**

- **Should have allocated more time for user testing**

FILE
LESSONS LEARNED
REPORTS HERE
SO WE CAN CONTINUE
TO REPEAT FAILURE

Level Of Effort, in hours

Bar chart with y-axis from 0 to 140 (in increments of 20). Categories: WF, ABAP, Basis, HRIS, Business.

Real Life benefits (a year later)

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- **Substitutions are clean and up-to-date** ✔

- **Users cannot carry their 'old' roles** ✔

- **Auditors? Happy** ✔

- **Users? A better understanding** ✔

But wait, don't stop there

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- **Evaluation of this process helped us to identify other areas in which we could improve both customer satisfaction and data integrity**

- **Other initiatives are underway to address these issues**

- **Without the positive experience of this project under our belts, we could have encountered more resistance to change**

Measuring Progress

1. Set an attainable goal.
2. Evaluate process at regular intervals.
3. Monitor intermediate and long-term outcomes.
4. Refine and modify process based on lessons learned.
5. Expand incrementally.

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http://www.sdn.sap.com/irj/scn/virtualteched-allsessions

Further Information

➜ **SAP Public Web:**

SAP Developer Network (SDN): www.sdn.sap.com

Business Process Expert (BPX) Community: www.bpx.sap.com

SAP BusinessObjects Community (BOC): www.boc.sap.com

➜ **Related Workshops/Lectures at SAP TechEd 2009**

BI204 - Best Practices on Workflow Tools Usage for MDM Scenarios

BI211 - Implementing MDMusing Web Dynpro as UI and Guided Procedures for Workflow

CD202 - Use Web Dynpro for ABAP,Workflow and the UWL to Revolutionize Decision Processing
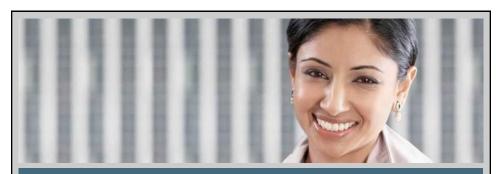
CD206 - Flexible Workflow-Base Solution for Journal Entry Approvals

SIM260 - Approval Workflows with SAP NetWeaver Identity Management 7.1

UP217 - Deploying Mobile SAP Systems and Business Workflow

UP266 - Customizing Allow: Exposing SAP Workflows to Lotus Notes

Feedback

Please complete your session evaluation.

Be courteous — deposit your trash, recycle your recyclables, and do not take the handouts for the following session.

THANK YOU !