Change Management Process
Standardization & Implementation

ACE 2012
About Lear...

- Major automotive parts supplier
- 2011 revenues of $14.2B
- 98,000 employees at 207 locations in 35 countries
- Headquartered in Southfield, Michigan, USA
- www.lear.com
- Two large product segments:
  - Seating Systems
  - Electrical Power Management Systems
    - Electrical Distribution
    - Electronics
Current State of the Aras Innovator Implementation

- Launched in November 2009 to be the master for our part information
- Current Statistics:
  - 110,000+ parts
  - 35,000+ documents
  - 2,000+ users
- Requirements Gathering for Change Management in 2010 through early 2011
- Core change management implementation ongoing
Current Infrastructure

• One global database in Southfield, MI (USA)
• Accessed from:
  – USA, Mexico
  – Spain
  – China, Philippines
  – Germany
  – Brazil
  – South Africa
  – Other Countries
• 35 sites in 15 countries total
• Regional Vaults during Phase 2 for CAD data
Presentation Objectives

• Present an approach to standardizing the Change Request process and how we have dealt with its complexity

• Present specific functionality that has been implemented to deal with the Change Request process

• Give you an idea of some of the possibilities for customization of the Aras Innovator platform to meet our specific ease-of-use and automation requirements
Three Main Objectives of PLM:

- Make the product data available to every function for their own use
- Use best-in-class processes to manage the product data
- Create the necessary linkages to enable automation
Change Request Process

• Information Collected:
  • “Proposed change” definition
  • Parts affected
  • Drawing markups, other attachments
  • Verbal description of changes
  • Manufacturing feasibility
  • Recurring and non-recurring costs
  • Pricing info (if a customer-driven change)
  • Approvals (CRB)
Change Request Process

- Workflow Challenges
  - Many participants
    - Who’s next?
      - Function
      - Membership to program
      - Location
  - Several loop-backs
- Parallel data inputs
  - Two (or more) working on the same item at the same time
Who’s next?

- Program contains team members
- Some members (certain functions) are tied to locations
- Parts are tied to both programs and locations
Workflow Assignment Configuration

Membership and role are used to determine workflow activity responsibility.

If the affected Parts in the CR are tied to your location, you will be flagged for the activity.

The system automatically determines the affected program based on affected Parts on the CR.
Workflow Assignment Configuration

If the affected parts in the CR are tied to this location, team members on the program related to the same location will be flagged for workflow activity assignments.
Workflow Assignment Configuration

Affected Parts are defined through a custom implementation of the ECO Impact Matrix.

Multiple technical reviews are spawned and reconciled before CRB if more than one program is affected.
Workflow Challenge: Two (or more) People in Parallel

- The “default” arrangement of items that have relationships are tabs along the bottom of the screen.
- In order to avoid conflicts in locking the main item to enter data for the related items, the relationships are pushed one level below. This provides the ability to lock the individual relationships and input grids without having to lock the main item.
- Users click on the buttons on the screen to start entering data on ensuing forms and grids.
Custom Impact Matrix

• “Out-of-the-Box” Impact Matrix behavior within ECO process (Lear does not use ECO)
  • Changes BOM structure automatically at the end of ECO process
  • Some options such as “replace” are not included
  • UI is basic & straightforward
  • Does not incorporate additional data items such as
    • Custom Part number cross referencing
    • Additional audits for needed automations
Custom Impact Matrix

Error Tracker

Custom Actions
Custom Impact Matrix

Shows just the contents of the BOM of the selected part

Selecting parts from the actual BOM of the released part to propose changes
Custom Impact Matrix

BOM markup to replace a part
Custom Impact Matrix

BOM markup to add a part
Custom Impact Matrix

Adding more parts to Impact Matrix
**Smart** copying of changes to other parts on the Impact Matrix

- Impact Matrix includes logic so Target parts on are only those where the change would “make sense” (can’t delete a Part from an Assembly that doesn’t have that Part)
Custom Impact Matrix

• Benefits
  • Smart behaviors and mistake-proofing checks prevent errors
  • “Copy Row” functions expedite engineering data entry
  • Intuitive UI
  • Other audits and automations not discussed here ensure the integrity of the change proposal and quoting process
Observations and Conclusions

• Some of the customizations shown here required up to three months to define and develop

  • Hardest part is getting the business logic defined right

• The flexibility of the Aras Innovator platform to customize workflow and grid behaviors allow for an PLM environment that is much more user-friendly than the typical user would expect