A Mid-Sized Company’s Migration from I-DEAS TDM to TeamCenter Engineering I-DEAS

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Agenda

✓ Leupold & Stevens, Inc.
✓ Axian Inc.
✓ Our TDM to TC-E Odyssey
✓ The Services side of the story
✓ What we learned
✓ Q&A
Leupold History

Founded in 1907
Portland, Oregon
Surveying Equipment
Repair Service

- Introduced Plainsman
- Internal adjustments
- Sealed main tube
- Filled with Nitrogen
Leupold Today

World leader in Sports Optics
Family Owned
650+ Employees
Celebrating 100 years
Leupold Products

Leupold Golden Ring® Binoculars

Leupold FX-III Riflecopes

FX-III 6x42mm
Adj. Obj.
Competition Hunter

FX-III 6x42mm
Adj. Obj.
Target

www.leupold.com
Axian Inc.

- Consulting Services company based in Beaverton, Oregon
- Founded 1985
- Privately held
- 4 Practices Areas
  - Product Engineering – Software development
  - Enterprise IT – Web services/ Data Services
  - PLM – Product Lifecycle Management
  - Training – Redhat, C++, .net, etc.
· Not a reseller – we focus on the customer need
· Provide services in System requirements definition, selection process, to deployment and training
· Work with many PLM products
· UGS Certified Center of Expertise for Ideas Migrations
L & S CAD Systems

- 1987 - First CAD application, Cadkey
- 1997 - L&S Standardized on I-DEAS.
  - Design features
  - Excellent support
  - TDM data management system.
Why Team Center Engineering?

- Migrate to and leverage the NX application.
- Retain 9-1/2 years of I-DEAS data.
- Retain I-DEAS TDM file structure.
- NX cannot use the TDM system
- Leverage additional TC-E functionally.
- Eventually to build a PLM system.
- Resolve TDM system performance degradation.
Roller Coaster Ride

From I-DEAS TDM to TeamCenter Engineering:
One company’s odyssey.
Video - Project Team at Work
I-DEAS TDM to TC-E Odyssey

- 2002- Attended first PLM World Conference in Florida
- EDS to merge applications into “SUPER” application.
- Attended subsequent PLM Conferences.
- 2003 PLM World learned about TC-E and NX
- NX Manager available only as an Oracle database application
In the Beginning

After PLM 2003 - Began planning in earnest.
   Discussed project with Management
   Submitted preliminary 2004 budget.
January ’04 - Learned more about TC-E & licensing costs.
March ‘04 - Formal presentations to L&S Mgmt.
   • Laila presented migration analysis as an independent consultant
   • Received Implementation “go-ahead” & funding.
March – June 2003

- Ran 1st miadmin “scan” to determine extent of TDM clean-up task.
- Began TDM clean-up.
- Published I-DEAS user check-in instructions.
- Identified licensing needs for TC-E I-DEAS.
- Discovered 32 character name and number limitations.
- Completed migration plan and schedule.
June 2004 purchased TC-E licensing including 29 Oracle client licenses.

Sept 2004
- Introduced intranet based sequential part number generator.
- Requested IT Department to install Server.

Oct 2004
- Need I-DEAS 11m1 client for TC-E 9, Oracle 9i, and NX Manager 3
- Submitted 2005 TC-E implementation budget
Nov. 2004

- IT Department still busy, TC-E server not installed.
- UGS Visits, runs NX Readiness Audit, recommends NX4.
- Unexpected, UGS announced TC-E for SQL Server
- Learned about plans for SQL server 2004PLM World.
- No one knew when it would be offered.
- Our IT department preferred SQL Server because:
  - Currently in use
  - Site licensing
  - Staff trained for SQL Server
Dec 2004

Negotiated SQL TC-E replacement, return of Oracle with Vendor & UGS.

At “11th hour” in our implementation, decided to switch to SQL TC-E.

UGS credited us for 29 Oracle client licenses.
Jan – Feb 2005

- Continued to clean TDM.
  - Lost ground due to continued users non-compliance
  - Asked Mgmt to reinforce check-in rules
- Received SQL version of TC-E
  - Found SQL TC-E test install easier then Oracle version.
- Found miadmin failed to clean bad drawing relationship, but reported task successful.
  - Bad migration drawing relationship difficult to fix. – resolved in Ideas 11m3 miadmin
TDM clean-up progressing
IT Department finally began to install server.

Show stopper! NX Mgr would not support:
- Not clear that TCE data mapping would result in correct autopopulation of BOM table in drafting.
- True work in process versioning
- Update in library utility
- Purge utility
- Advised to wait for next release of NXMI
May 2005 “Show Stopper”

- Must wait for version 3.2 due out in August 2005.
- Project put on “back burner”
- Stopped TDM “scans”
  – **Big mistake!**
- Re-issued user check-in requirements.
- Revised budget plan to accommodate Aug restart.
August – December 2005

- Received NX Manager version 3.2.
- Server working after a rebuild and several install attempts.
- Client installation challenges.
- No fundamental differences for TCE with MS SQL vs Oracle SQL.
Dec 2005

- Formed “pilot system” test team
- Set up dual production/pilot I-DEAS start.
- Resumed TDM cleanup
  - Discovered 1000 new duplicate part number errors!
Created “Stacktoy” parts, assembly, & drawing to test all item types in TC-E.

Errors like ID Patterns, JT Conversion, Check-in and Check-out were quickly uncovered.

Our first training session - February 8.

Pilot system separated from Production system.

Safe to experiment in Pilot System.

Began using VPN access to keep project moving while managing labor costs.
Instruct Pilot testers to click the “more” button on TC-E error messages to get details before forwarding to Admin.
Symbols such as Ø cannot be used in part names.

Changes in TC-E made it practical to recreate projects used in TDM.
Mar 2006

- Be sure to maintain production environment parameters during pilot test.
  - Unprune not working in production I-DEAS TDM. Found to be related to TDM & TC-E on same machine.
  - Default folder not correct location.
- Trouble with attributes form – data mapping changes in 4.0
- Pilot users struggle with TC-E, especially the search utility. Request more instruction and customization.
  - Custom search forms
  - Show only latest version
  - Eliminate some visual clutter of non-relevant datasets
- Continued S/W problems drive support escalation request.
Down to 23 duplicate part numbers. Final clean-up items could only be fixed manually thru TDM, example Drafting Setup to Binary Drawing update.

Migration process working well. Requires periodic production I-DEAS interruption (recommend during off hours)

Special Leupold Master Form created – instruction to include concealing default Item Master

- Used Item ID for TeamCenter and Leupold Part Number for BOM tables
- Driven by part numbering practices used by Leupold and CWA practices.
Apr 2006 to present

- New duplicate part numbers discovered. Worked with specific users to correct.
Next Steps - May

- Next week – all users being trained
- Cutover to production use of NXMI
- Desk side support for 2 weeks
- NX integration to TCE
- CMM tool for Ideas to NX conversions for selected users.
The evolution of Axian involvement

- Initial business case consultant only – VAR was providing services
- VAR reorganization after delivery of quote – requested Axian to deliver
- Recognition that the scope of services as quoted was not adequate for success
- Held up by “known” risks with early versions of NXMI
Configuration – it is not out of the box ready

- One Path practices assure that your data will operate with future modifications of TCE and Ideas
- TCE Administration class is not enough to let you do it alone
- Need to map legacy information to data stores in TCE for transition
- Use at least 1 pilot database, possibly 2 – pilot, development and production
- Test migrations many times before production migration – keep production system clean
• CLEAN TDM and keep it clean – we keep saying this for a reason
  • “Scan” TDM weekly for new part ID errors to prevent new corruption.
  • Immediately request offending users to clean new errors and reinforce TC-E rules - make them fix their bad practices.
Installation challenges – it’s not pretty

- Password required for install does NOT meet most corporate password security requirements
- Roughly 4-5 applications involved in the installation process – even for the client machines
- Too many manual file edits to connect NXMI/Ideas/etc.
- Server 2003 and Ideas 11, resource locking?
- Copied TDM must be disassociated
- Installed NXMI from client
- Every bug encountered – told to install “next” update – several updates released in a very short timeframe
  - Every update drives all applications to be updated along with the manually modified files.
  - Each release is easier
Basic configuration work

- Create users
- Create projects
- If configured projects are used – Create States
  - Create permission structure
  - Define procedures since workflow licenses are not included
- Part numbering rules and alternatives
- Create searches based upon TDM legacy information
User Pilot Team – an absolute must

- Caught critical bugs before we got too far down the path
- Helped identify challenges of perception – what to focus on in training
- Clarified business process decisions before final configuration
End user training and support for cutover

- Help the users see the end goal
- Help them understand that “yes it is different”
- Focus first on TDM functions – checkin and checkout – how to do their work
- Follow up session on TCE functions
- Hand hold for 2-3 weeks after cutover – roving support to keep frustrations down.
- Later – consider introducing use of PSE
Changing participants dragged things out

- During this entire time span, IT Management and Project Management changed hands requiring renewed support requests and explanation.
- Our NX Manager Service arrangements changed three times. Started with Pat Kennedy from Acuity (VAR) & then Laila was the consultant, first indirect thru Acuity and then direct thru Axian.
Summary – lessons learned

- Complete implementation quickly.
- Acquire full Mgmt support and funding.
- Mgmt must understand all part numbers are unique.
- Mgmt must understand reasons for TC-E.
- Resources to be applied when needed.
- Research TC-E features and determine match to TDM configuration and needed changes or alternate procedures.
Summary – lessons learned

- Instruct users about TC-E part, assembly, and drawing name and part number rules during check-in.
  - Remember all part numbers are unique.
- L&S was too EARLY to adopt NXMI - only now is NXMI truly ready.
- Don’t skimp on labor/ funding because it will cost you more in the long run.
- Caution, don’t try to do this by yourself.
Summary – lessons learned

- Use UGS One-Path methodology (only UGS and COE partners are trained in it) – this was backfilled into L&S project due to service changes
  - Initial audit – identifies TDM clean up scope and shows how far the migration will work to NX
  - Detailed Planning Audit – addresses plans for part numbering decisions, release process, and project expectations
  - Pilot migration and Pilot Team
  - Configuration and implementation to assure business process and TDM functions stay aligned
  - Best practices for data migration and data mapping
Questions?

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