

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

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LEUPOLD[®]
AMERICA'S OPTICS AUTHORITY[®]

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Axian, Inc.

Axian Creativity. Software. Business Solutions.

Premium Partners:



Microsoft

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

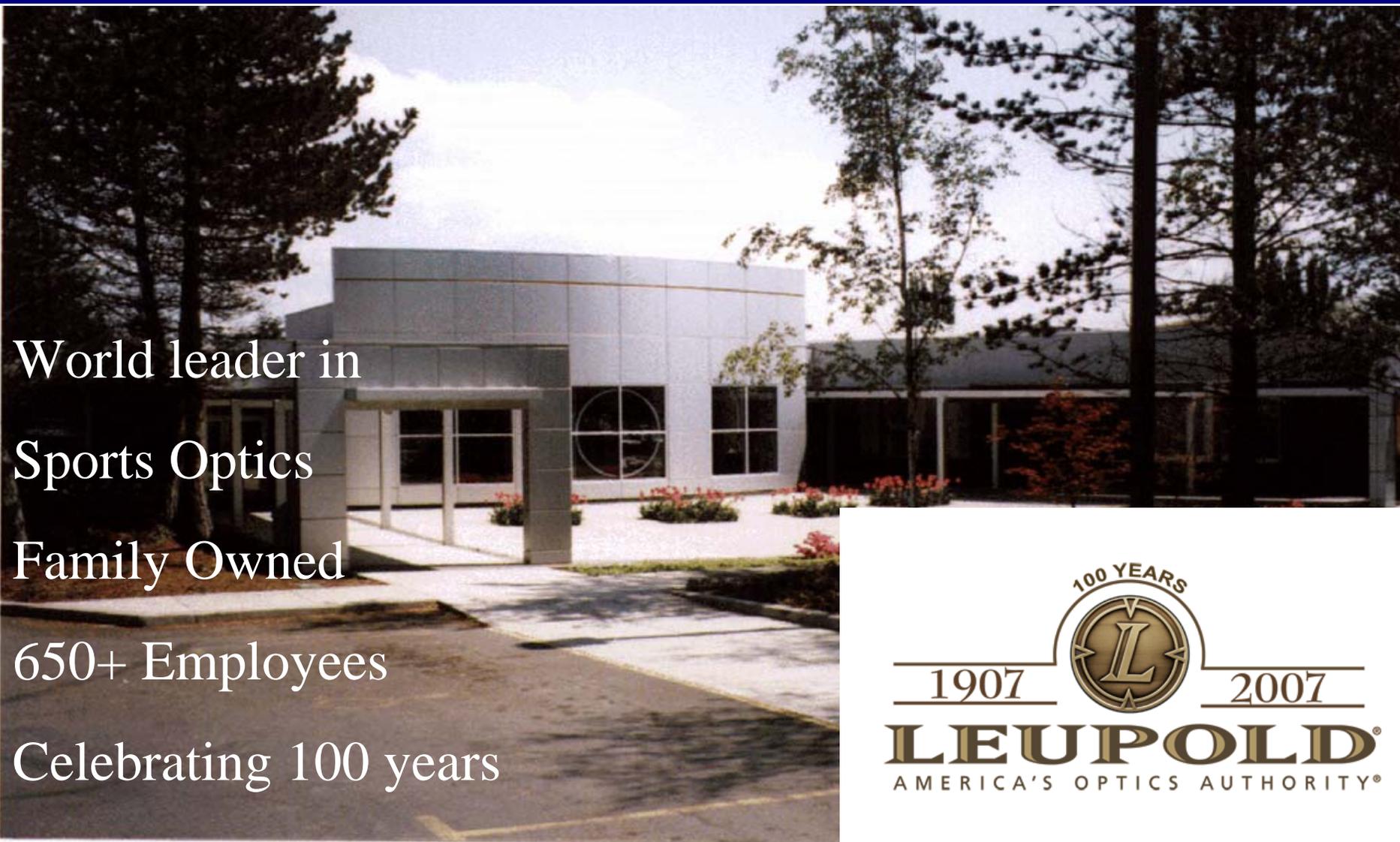
Portland, Oregon

Surveying Equipment
Repair Service

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



Leupold Today



World leader in

Sports Optics

Family Owned

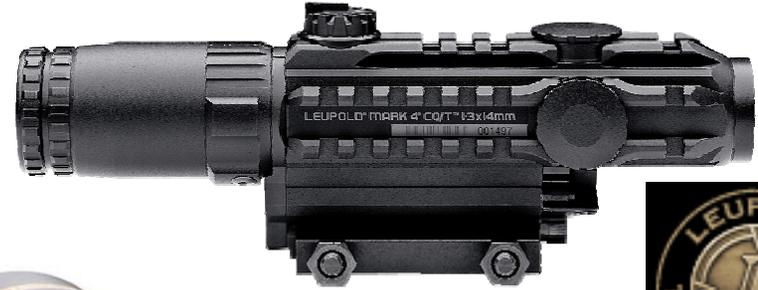
650+ Employees

Celebrating 100 years



Leupold Products

Leupold® Golden Ring® Binoculars



www.leupold.com



Leupold® FX™-III Riflescopes



FX-III 6x42mm
Adj. Obj.
Competition Hunter

FX-III 6x42mm

FX-III 12x40mm
Adj. Obj. Target



- 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.

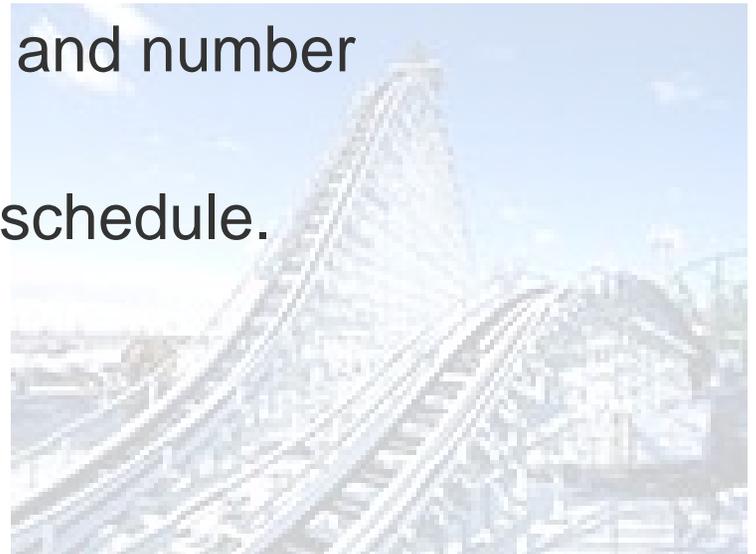
January '04 - Learned more about TC-E & licensing costs.

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.



Implementation Continues

- 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.

UGS credited us for 29 Oracle client licenses.



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

- 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 than 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





- Formed “pilot system” test team
- Set up dual production/pilot I-DEAS start.
- Resumed TDM cleanup
 - Discovered 1000 new duplicate part number errors!

Stacktoy Picture Here

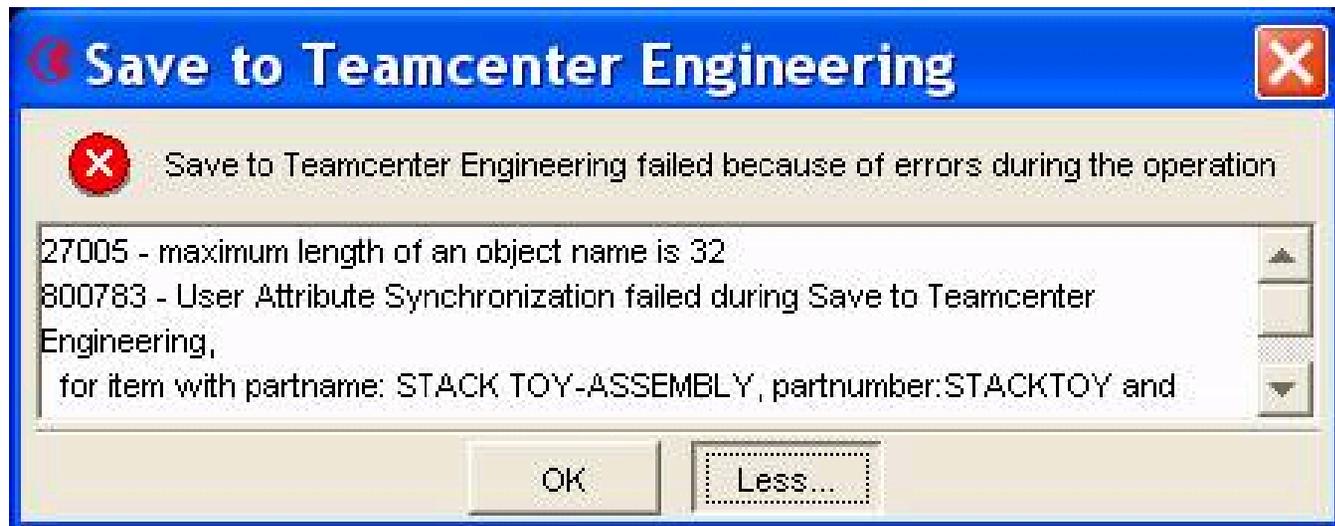
- Migration application errors resolved by NXMI 4.
- Pilot system working well enough to add balance of test users.
- Created “Stacktoy” parts, assembly, & drawing to test all item types in TC-E.
- Errors like ID Patterns, JT Conversion, Check-in and Check-out were quickly uncovered.
- Our first training 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



Feb 2006 Continued



Instruct Pilot testers to click the “more” button on TC-E error messages to get details before forwarding to Admin.



Feb 2006 Continued

- Symbols such as \emptyset cannot be used in part names.
- Changes in TC-E made it practical to recreate projects used in TDM.

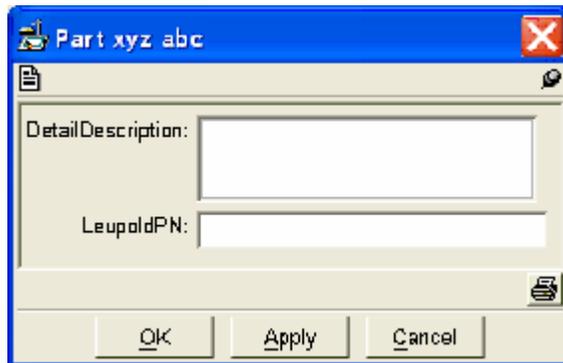


Mar 2006

- 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

First and Foremost

- 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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