

Autodesk Inventor 11 gains maturity

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Autodesk's Manufacturing Solutions Division (MSD) invited a few key editors and analysts to review the upcoming release of Inventor 11, due for FCS and official announcement on 23 Mar 2006. Your intrepid traveling editor listened to their executives briefly describe the new release and some of their ambitions, was able to attend 7 lightning fast demos of key technology in the new release, and attended a hands-on session for 3 hours to sample their UI and work through a few design exercises.

Observations:

- Inventor 11 is a much more mature product, adding significant functionality
- Autodesk is now moving beyond catch-up, adding substantial unique technology
- Their PLM strategy is maturing and becoming (more) widely accepted with 16,000 installations through YE05.
- Inventor 11 offers quite a complete package
- With, as yet, a huge remaining 2D install base, MSD's philosophy is to make Inventor "the best choice for AutoCAD users for design to manufacturing solutions."

Summary:

- The stats for FY06 are impressive:
 - Manufacturing Solutions Division finished the FY06 (ending Jan06) with revenue of \$475 million, up 25% from the previous year
 - Estimated install base of 3 million mechanical seats (2D + 3D)
 - R&D spending level is \$85 million, with about 1,000 developers in 9 centers worldwide
- Recent acquisitions include Compass Data Systems (data management extensibility), Solid Dynamics (dynamic and kinematic modeling), Engineering Intent (ETO customization technology), and Alias (the StudioTools products for industrial design - renamed Autodesk AliasStudio). With the exception of Engineering Intent, all of these have made their way into Inventor 11, substantially increasing their breadth.
- Key functionality enhancements for Inventor 11 include:
 - Vault: easier management of company data and related standards, flexible search through vaulted data, and complete BOM with both electrical and mechanical components.
 - AutoCAD Electrical: adds 3D point to point wiring, adds new symbol libraries allowing documenting of hydraulic and P&ID systems, offers round trip integration with Inventor (2D and 3D changes show up in each system - impressive)

- Inventor 11 modeling: improves very large assembly management without using simplified assemblies, adds assembly configurations by building tables from design variations within an assembly, incorporates dynamic simulation and analysis using kinematics joints, forces, and mass, enhances surface and 3D sketch tools (focus on lofting, curves, and tangency conditions), adds plastic part design tools, adds sculpt tools for quickly defining shapes, and with STEP import tools that claim to be best in class.
- Inventor 11 also improves their use of functional design by expanding and tightly integrating their Mechsoft acquisition as well as adding extensive capability to their "design accelerator" technology. Specific examples we witnessed included automatic resizing and placing of components when adding them from the library and custom designing company standard stackups (for example, a bolt with washers and nuts).

Conclusion

I was most impressed with this release. Stretching MSD's release cycle to 1 year between releases was a wise move. Autodesk Inventor now seems to be a very serious competitor in the market. The new functionality seems well integrated, offers substantial new capability, and even operates with a seemingly improved user interface.

The hands-on workshop proved that even new users could operate even the advanced functionality, albeit, in my case with frequent assistance from Autodesk personnel. But, hey, how much can you expect to learn in 3 hours?

We expect that with Inventor 11, AutoCAD users will be much more reluctant to switch to other vendors.
