

BERCHTOLD CORPORATION

Supporting rapid growth in operating room equipment development with SolidWorks Premium



Berchtold has implemented a SolidWorks software-based automated configuration and quoting system, that improves quoting accuracy by 75 percent, reduces design errors, and increases profit margins.

Berchtold Corporation is the top North American manufacturer of equipment for operating room environments, including surgical lights, equipment management systems, and surgical tables. Until 1998, the corporation's two design groups in the United States and Germany used AutoCAD® 2D design tools to develop products for their respective markets. Plans for expansion into additional markets—including new subsidiaries in the United Kingdom, Spain, Australia, and Japan—prompted interest in 3D solid modeling as a means to generate increased efficiencies in anticipation of expected growth.

Management charged the two design teams with evaluating and recommending available solid modeling packages for a new 3D CAD system, according to Ted Atchley, CAD project designer. "We recognized that the business was starting to grow and that we would need to make the leap from 2D to 3D in order to sustain it," Atchley explains. "Management wanted both teams to make their recommendations independently, without influencing each other's decision."

After evaluating leading 3D CAD systems, including Pro/ENGINEER®, Mechanical Desktop®, and SolidWorks® software, both teams recommended the SolidWorks 3D CAD software system. Berchtold chose SolidWorks software because it was the easiest 3D parametric CAD system to learn and use, and also provided the most robust assembly design capabilities. "The two groups have a friendly, good-natured rivalry between them," Atchley says. "It was extremely gratifying for each team to confirm the other's findings. We both understood the powerful things that we could do with the parametric assembly design capabilities in SolidWorks software."

Improved efficiencies sustain growth

Since implementing SolidWorks software, Berchtold has realized improved efficiencies in several areas that have enabled the company to sustain an explosive rate of growth: from annual revenues of approximately \$12 million in 1997 to roughly \$75 million in 2005. The company projects annual revenues eclipsing \$100 million by 2008.

Results:

- Supported annual revenue growth of 20 to 30 percent
- Improved quoting efficiency for custom designs by 75 percent
- Increased profit margins dramatically
- Reduced prototype costs on the Teletom line by 50 percent

The transition to SolidWorks software has eased the company's growing pains, because it has allowed for the development of automated processes and improved efficiencies that have replaced many of the tedious, repetitious tasks associated with developing products in 2D. For example, using SolidWorks software assembly configuration capabilities, open Application Programming Interface, and the Visual Basic® scripting language, Atchley has created an automated quoting application that not only has improved quoting efficiency by 75 percent while reducing design errors, but also has substantially increased profit margins.

All of the surgical suites that the company develops are custom configurations based on a hospital's operating room dimensions, equipment needs, integration level, and the types of surgery it performs. Prior to the SolidWorks software implementation, information needed for quoting purposes was often faxed to the company's engineers, who used it to create 2D designs for quoting. Now, sales representatives input the required information, and the quoting application—working with SolidWorks software—generates the specific configuration in about 45 minutes. "Configurations enable us to create about 70 percent of the assembly automatically," notes Atchley. "We've increased profit margins and reduced order errors, because we now have a consistent way of getting data in and generating accurate designs using design tables and configurations."

Revision control, design validation

By upgrading to SolidWorks Premium, Berchtold now has access to SolidWorks product data management (PDM) software for revision control and for meeting regulatory documentation requirements more efficiently, as well as SolidWorks Simulation for validating product designs.

"We are now using the PDM software both for revision and electronic data control, which enables us to have the electronic backups needed for meeting FDA (Food and Drug Administration) requirements," says Patrick Brown, R&D engineer. "We also take information from assemblies in SolidWorks software to interface with several regulatory bodies."

Using SolidWorks Simulation, Berchtold has identified maximum impact loads that occur during shipping, ensuring that equipment is not damaged during transit. The company has also studied deflections to validate the performance of its surgical equipment.

Design data across the enterprise

With SolidWorks software, Berchtold can utilize design data across the enterprise in innovative, cost-saving ways. In addition to using design data for quoting, product development, PDM, and analysis, the company uses SolidWorks eDrawings® files associated with part numbers in the company's manufacturing system to interact with vendors and technical support/service personnel in the field. Using PhotoWorks™ software, the company generates photorealistic renderings for marketing purposes. The ability to use SolidWorks software sheet-metal capabilities to export flat patterns resulted in a 50 percent reduction in prototyping costs on the Teletom line.

"SolidWorks software has enabled us to apply engineering data across the entire business," Brown says.

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Ted Atchley
CAD Project Designer



Integrated SolidWorks assembly analysis, eDrawings communication, and SolidWorks PDM software help Berchtold to validate design performance quickly and utilize design data efficiently across engineering and business functions.



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