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David Russell
Design Engineer
QED

3D lights the way.

Digital Prototyping helps cut the design process by 40 percent.



Image courtesy of QED

Project Summary

In the early 1970s, Kentucky-based QED designed and marketed its first product: a fiber optic headlight and halogen light source, designed to give doctors more control over lighting when performing medical and surgical procedures. Today it designs and manufactures a full range of head-mounted lighting gear with intricate lens and linkage systems for the medical, dental, technical, and hobby industries.

Prior to 1995, all design work at QED was done by hand. Now the Autodesk® solution for Digital Prototyping is changing the way the company's design team does business, and the Autodesk® Inventor® software and Autodesk® Vault Workgroup software products are seamlessly integrated to help it:

- Cut the design process by 40 percent
- Reduce the need for costly physical prototypes
- Validate compliance with global regulations
- Manage and reuse data through a product's lifecycle

The Challenge

Being a small shop, QED was challenged with keeping up with the demands of regulatory agencies and competing with larger manufacturers. Designing in 2D, in which four to five prototypes were not unusual, was slowing down the process and bringing up costs.

The Solution

Autodesk Inventor software has taken QED beyond 3D to Digital Prototyping, in which its designers can create a single digital model that enables them to design, visualize and simulate their products before they are ever built. "With the ability to assemble components in a virtual space, we are able to resolve form and fit issues without the need for physical prototypes," says David Russell, the lead CAD designer at QED. "We can also address some of the aesthetic issues, like colors, graphics, proportions, and weight with Inventor's capabilities to render realistically, add materials, and analyze parts and assemblies."

With the Autodesk Vault family of data management products, Russell and his team can manage the Digital Prototyping process by reducing the time needed to organize files, avoiding costly mistakes, and more efficiently releasing and revising designs.

"Regulatory compliance issues increasingly influence our day-to-day operations," says Russell. "Being able to effectively capture and manage the information required to validate compliance to a specific country's regulations is an absolute necessity for a small business to retain a presence in these markets."

The Result

"Overall, I estimate that implementing Inventor software has cut our design process by 40 percent," says Russell. "This helps us compete in a market with larger manufacturers that have greater resources."

Plus he adds that Vault Workgroup—with its ability to centralize, consolidate, and manage distribution of documentation—could help his company soon realize a 20 to 30 percent improvement in efficiency. "We figure it's right around the corner," he says.

For more information on completing projects faster with Autodesk Inventor and Digital Prototyping, visit **www.autodesk.com/inventor.**

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