



TREK, INC. Implements Autodesk® Inventor™



Trek is now using Inventor to improve time-to-market for new designs of its products, including the company's high-voltage power amplifiers (Trek Model 20/20D shown)

→ THE CLIENT

TREK, INC. (Medina, NY) designs and manufactures high performance electrostatic measurement instruments, sensors & monitors, and high voltage amplifiers, power supplies & generators. Trek's products and technical expertise are used by OEMs (Original Equipment Manufacturers) involved in semiconductor manufacturing and electrophotography; in applications for protecting electronic devices from electrostatic discharge (ESD) events; and by companies and universities involved in various fields of research. For more info: www.trekinc.com

→ THE CHALLENGE

Trek was a long time user of AutoCAD and was leveraging the software's ACAD 3D Solids capabilities in order to address the company's increasing need to work with 3D depictions. They were looking to transition to a more robust 3D design capability, and thereby improve productivity and time-to-market for their products.

→ DESIRED OUTCOME

A significant portion of Trek's business is attributed to custom-designed products for individual (OEM) customers. Using the parametric technology inherent to Inventor would allow them to create new designs and derivatives more efficiently. "A key goal was to be more productive and spend less time on production drawing. Using Inventor would allow us to do just that," stated Kevin Brown, Mechanical Engineer.

→ THE SOLUTION

Autodesk Inventor was a natural consideration for Trek because they had several thousand AutoCAD legacy documents that needed to be maintained or reused. They realized that getting a design finished and into production was more than a matter of speed but also accuracy. Kevin noted, "When complex designs incorporate thousands of parts and assemblies, accuracy can have a huge impact on the time and cost of bringing a new product to market. We knew that the parametric technology within Inventor could help us achieve that level of accuracy."

To get started, Kevin enrolled in the Inventor Fundamentals Course with IMAGINiT's Application Engineer, Jason Flores. "I was definitely satisfied with my training experience. Jason was extremely helpful, knowledgeable, professional, and solved my problems and answered my questions," stated Kevin. Another important factor contributing to Trek's successful transition from AutoCAD to Inventor was the fact they already had the 3D mindset in terms of developing product models, because of their heavy use of 3D modeling technology in AutoCAD.

→ THE RESULT

Kevin described, "I remember sitting down with our lead electrical engineer on our last AutoCAD project to analyze hold-off distances and high-voltage areas. Manipulating the different viewing angles in AutoCAD was time consuming and cumbersome and left opportunity for interpretation," noted Kevin. Trek's very first Inventor project was a revision of this particular AutoCAD project. Some of the design elements were different, so they started the project from scratch in Inventor. "When I was analyzing the voltage hold-off distances with the same engineer, now using Inventor, the whole process was more efficient. We weren't looking at a wire frame depiction any more - it was now a shaded model that needed no additional explanation. Now we could quickly see what we wanted to see, and make the necessary adjustments almost instantly. This project proved to me how Inventor could help us reach our goal of increased productivity and faster time-to-market for our products," continued Kevin.

"I would estimate that as a result of implementing Inventor, we decreased production drawing time by almost 50%," noted Kevin. Due to the capabilities of Inventor, Trek decreased the number of design steps by making changes that instantly propagated throughout the design derivatives. "Now we can spend more time exploring new design ideas because we don't have to spend time making new 2D drawings in order to look at design alternatives, or waste time on repetitive tasks, as was required in the past," added Kevin.

"Our design tools have evolved over the years, progressing from the drafting board, to AutoCAD, and now to true 3D. We are still performing many of the same basic tasks, but the technology we're using now allows us to do them more efficiently and more accurately, which will enable us to address the needs of our customers and maintain our leadership role in the global marketplace," concluded Kevin.