



CASE HISTORY



DELTA TOOLING USES ACTIFY SPINFIRE PROFESSIONAL TO CREATE A PAPERLESS DESIGN AND MANUFACTURING PROCESS.

Actify's CAD Visualization product helps Delta Tooling Fend Off Foreign Competition and Increase Profits

Delta Tooling Company, of Auburn Hills, Michigan, is a premier supplier of plastic injection molds, models, fixtures, prototype and fabrication, and tooling for the automotive, aerospace, and heavy truck industries. Privately owned by Rudolf W. Mozer and family, Delta Tooling has been supplying quality tooling to major customers including Ford, GM, Daimler Chrysler, Textron, Boeing, Bell Helicopter, Sino Swearingen, Freightliner, Lear, Visteon, and many more. Established in 1953, Delta Tooling Company today employs nearly 275 skilled professionals.

Increased Competition Drives Need For Increased Efficiency

Faced with increasing competition from China and Korea, Delta Tooling needed to find ways to reduce pricing for the products they sold. They needed to become more efficient and streamline their processes. They found they needed to compete on the technology side of the business since they were unable to compete with the low labor rates found throughout the world. "It used to be that we could beat our foreign competition because we had the skilled laborers," said Tibor Toreki, vice

president of Advanced Technology for Delta Tooling. "Computers have leveled the playing field tremendously. I don't believe that we're going to beat our competition on labor rates any time soon, but we can beat them by improving our own efficiency, by doing things faster with fewer mistakes."

Four years ago, Delta Tooling began migrating from a 2D drawing based engineering and manufacturing process to a 3D paperless engineering and manufacturing process. According to Toreki, drawings were inherently complex and highly detailed which made them difficult to generate in a timely manner with 100% accuracy. This was especially critical for their business, which makes build-to-order components where nearly every component is custom made and the cost to create and fix a drawing can't be amortized across multiple pieces. The drawing has to be done right the first time otherwise they end up paying for it with mistakes in purchasing and manufacturing. In addition to drawings, some complex components can only be made with additional supporting 3D CAD. The mix of 3D CAD data with 2D paper drawings made it difficult to coordinate all of the design information with purchasing and manufacturing activities.

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This caused many jobs to have some wrong components ordered, or to have components missing when the job reached assembly. This led to “scrambling” at the end of projects to get jobs done on time. Delta Tooling’s tool crib was also filled to the rim with components that were incorrectly ordered. Their detail department would fill a rack of scrapped parts every month because of problems with their 2D/3D process. Their boring mills were working 12-hour shifts with much of their focus on fixing things rather than building new products.

Delta Tooling also found they had a lack of skilled mold apprentices and it was getting harder and harder to find skilled mold makers. They thought that by using 3D solid modeling and using 3D viewers on the shop floor it would make it both more interesting and much easier for younger talent to enter their trade.

Actify SpinFire Professional - the Right Solution

The solution Delta Tooling found was to introduce Actify SpinFire Professional, from Actify Inc., San Francisco, California, and a new 3D solid modeling design system to their design and manufacturing process. After an extensive review process of over six CAD viewing solution products, Delta Tooling selected Actify in 1999. With Actify, Delta Tooling has been able to develop a Solid Modeling Paperless Mold Design and Manufacturing Process that has solved almost all of their problems.

Toreki said the Actify product was “by far the best” product on the market, and he cited four critical elements that made Actify the clear choice. The first was Actify’s ability to import design information including part names, part numbers, assembly structure and version numbers. The second was the ease of use in which non CAD users could easily work with the Actify solution. The third was

functionality, Actify was the easiest product to cut sections, measure distances between points, circle diameters, and measure length of edges. He also said pricing was an attraction, with Actify offering good value for its cost.

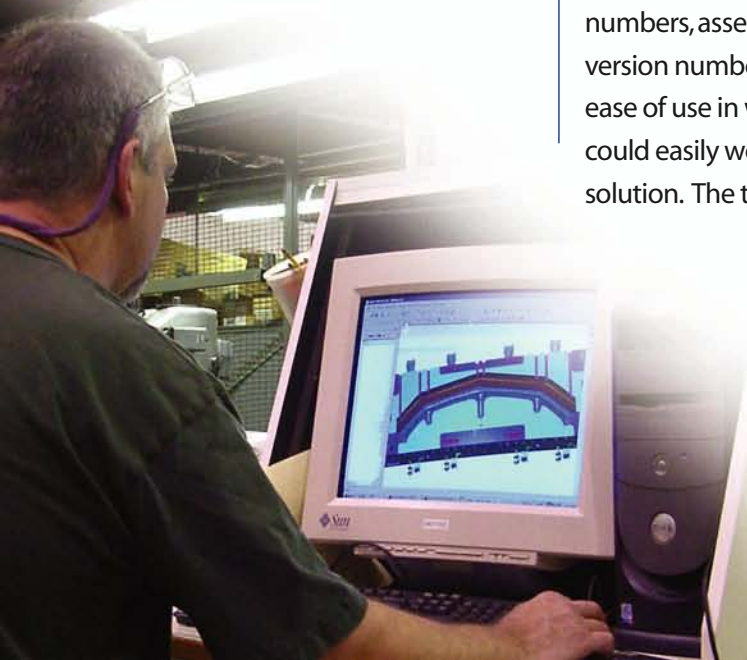
Actify has allowed Delta Tooling to eliminate drawings completely and has opened up accessibility to CAD visualization to more people in the company including the estimating, purchasing, and sales departments, and manufacturing. Throughout the company employees are now able to use SpinFire Professional to bring up parts and assemblies and determine how they fit together without the need of a high end CAD systems, drawings, or blueprints.

Actify is keeping Delta Tooling from making mistakes by allowing for version control of the CAD drawings. This allows all employees to look at the most recent drawings. Quality in the Delta Tooling products has dramatically improved since they began designing everything in 3D. With computer stations running Actify SpinFire Pro located throughout the manufacturing floor, the manufacturing group can now measure true values from the CAD design. Previously they had to print the drawing and do the measurements by hand. They can now recognize design issues before machining the part.

The design review cycle has also been simplified. In the past, before products went to manufacturing, Delta Tooling internal and customer’s reviews would have to be done on site. Now, designs are reviewed using Actify SpinFire Professional on a

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At Delta Tooling drawings were hard to track and distribute. Once they were in manufacturing and a mold builder had marked up a print he usually didn’t want to give it up. This created problems when others were in need of the drawings. They either couldn’t get them or they had to wait until others were finished using them.



computer with a projector and Smartboard in their conference room. Designers simply publish a 3D viewing file and place it on the Delta Tooling intranet. The PC in the conference room can download the viewing file using Internet Explorer. Designs are reviewed by key designers, leaders and customers using SpinFire Professional. The Smartboard allows anyone to use electronic markers to highlight or draw on top of the projected image. Sometimes, remote plants are included in the design review by using Microsoft Net-Meeting. The whole team can now focus on the same problem, allowing them to make more intelligent decisions. This has shortened the time it takes to get products to market and has resulted in tens of thousands of dollars in savings. Although Delta Tooling doesn't currently use Actify's e-mail capability extensively, they expect to be using the feature more in the future to further take advantage of the product's collaboration capabilities.

Benefits of Using Actify SpinFire Professional

By implementing the Actify solution, Delta Tooling has been able to use state-of-the-art technology to regain a

competitive advantage against global competitors and provide its customers with better quality products with a significantly reduced lead-time. Delta Tooling has also been able to save hundreds of thousands of dollars by eliminating mistakes in manufacturing.

Toreki recited a litany of benefits Delta Tooling has experienced from using Actify SpinFire Professional. He said Actify SpinFire Professional has been able to open doors throughout the organization that previously couldn't be open. Actify was originally bought for the manufacturing department but has spread throughout the company. With Actify the purchasing department can now look at a part before ordering it and see it in great detail. Program managers, who used to rely on getting information from designers, can now use Actify to get the information themselves.

They can now answer customer queries in minutes instead of hours. With the CAD data right on their

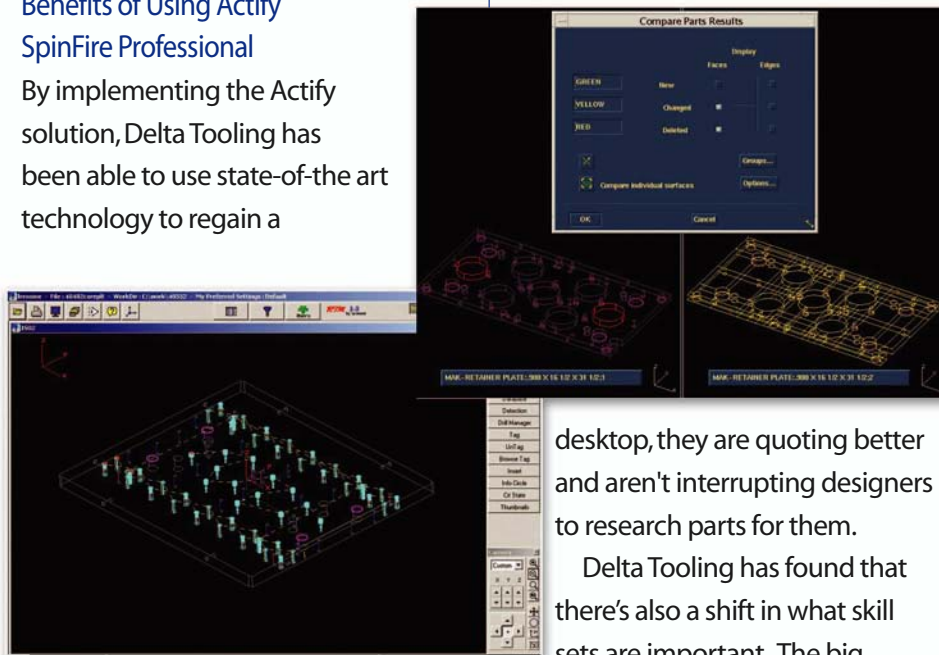
desktop, they are quoting better and aren't interrupting designers to research parts for them.

Delta Tooling has found that there's also a shift in what skill sets are important. The big



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benefit with using Actify is that now everyone is doing everything electronically. With Actify the skill set requirements have shifted from traditional complex print reading skills, which required a steep learning curve, to using a computer in a simplistic 3D interactive environment that requires minimal training to become proficient. The new skill sets gained by Delta Tooling employees to run Actify also means that these employees are becoming more comfortable with computer based technology and can begin utilizing related computer technologies more effectively as well. It also helps in attracting and retaining younger employees to the mold manufacturing trade.



Actify quickly brings new employees up to speed and raises the skill level of manufacturing employees who had no previous exposure to computer skills. Delta Tooling found that the employees, who were most resistant, or quite possibly "unteachable", have become proficient enough to equal their previous levels of efficiency. For most other employees, they have seen a dramatic increase in efficiency and a significant reduction in manufacturing errors. A typical design cycle for their products can require as many as nine releases to purchasing and manufacturing.

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Before the introduction of Actify, Delta Tooling would release a new set of drawings to manufacturing. Each set of drawings contained, on average, nine drawing sheets, which resulted in as many as eighty-one drawings floating around the shop for just one job. It was hard to tell what the latest drawing was, let alone find it.

Delta Tooling's CNC machines are now using Actify along with a CAM programming system which has

eliminated the need for engineering to create dimensioned drawings. For instance, a boring mill operator will now use a CAM system to machine a job 2-4 times faster versus traditional manual machining or driving a CNC machine using MDI input by referencing a drawing. However, since the CAM system is generally only able to view a single component, the operator will have difficulty understanding fit, finish and tolerancing issues relative to mating components. To solve this problem, each machine operator also uses an Actify viewing system to determine what type of component interfaces with the component being machined. They can then determine the proper fit and finish conditions. With the combination of using a CAM programming system and Actify SpinFire Pro, machine operators are now manufacturing components right the first time, faster and without drawings. Even manual machines are now using SpinFire Pro (without CAM systems) to completely manufacture components without drawings.

But ultimately, like any business, it's all about the customer. Delta Tooling is seeing a higher level of expectations and demands by its customers. Their customers are designing in solids and Delta Tooling needed to be able deliver

designs in solids. By improving its quality and response times to its customer's needs, Delta Tooling has been able to fend off foreign competition and remain competitive in the world's marketplace.



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