

## **Caterpillar Uses New Tool to Reduce Steel Costs: Workshop-based analysis yields 5-7 percent in cost savings**

By Doug Smock

Soaring costs for metals and plastics are putting a new emphasis on cost reduction at major OEMs, such as Caterpillar in Peoria, IL. Two managers, Nelson Jones and Syamala Srinivasan, developed a computer-based system to run CAD-based feature analysis on thousands of mechanical components, replacing a manual spreadsheet system that was too consuming for engineers. They're looking for a fast way to identify designs that offer potential for savings.

While their program was developed a few years ago, Caterpillar is just now deploying it across the company, scouring thousands of CAD files looking for redesign and other cost-saving opportunities through a spin-off company called Akoya.

"They're clearly achieving savings of 5 to 7 percent on a broad category of mechanical components such as forgings, castings, tubing and steel plate, which is significant considering the increases in steel prices," says Brett Holland, president of Akoya, which has three other active customers for its cost management software.

The key aspect of the Akoya approach is a feature it calls competitive banding analysis, which provides a price range in which companies can acquire a component in its market from an effective producer. So in other words, it does more than analysis just for the design features; it also looks at prices paid for similar products across the company and compares them to "should-costs" for the same product based on data in the computer program.

The Akoya program builds on top of cost-management programs that engineers use at many companies to determine the most cost-effective approach as they design. These include tools such as Design for Manufacturing and Assembly (DFMA) from Boothroyd & Dewhurst and Costimator from MTI Systems.

"Typically, we conduct workshops of 20 or so people when we get all of the key decision makers together and examine all of the parameters that affect cost as shown through the competitive banding process," says Holland. Specific targets are identified in those meetings, such as redesign, renegotiation and new supplier development. Specific individuals are given responsibility and dates are stipulated for review.

Holland says competitive banding workshops have consistently generated over \$1 million in savings per workshop. Specific benefits he cites include:

- \* 5- to 15-percent savings on parts families by identifying the most-effective suppliers
- \* Reducing the time to identify profit improvement opportunities by 80 percent
- \* Reducing design time by 25 percent

For one customer, Akoya identified a price band for a flywheel housing of \$9.71 to \$10.35. The OEM was paying \$14.74 for the part, 30 percent above the competitive

band. The company bought 133,000 of the part per year, representing significant lost profit. Some of the features such as sports and drill holes represent redesign opportunities. As a result of changing various factors, the cost was moved into the competitive band.