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INNOVATIONS

Caterpillar turning to Internet for deals

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A savvy consumer seeking bargain prices for a TV set, automobile or even a best-selling novel will likely fire up a computer to launch a Web search.

With a shopping list of 600,000 different items, managers at Peoria-based Caterpillar Inc. also are on the lookout for bargains, and they, too, are turning to computers to search for good deals.

Instead of just using market power to demand across-the-board discounts from vendors, as many large industrial players do, Caterpillar is pioneering a computer-aided means of cutting costs it hopes will benefit itself and its suppliers.

"Most members of the supply chain cringe" when a major customer wants to discuss price reductions, said William Morton, chief of Morton Industrial Group Inc., which sells some 4,000 different parts to Caterpillar to the tune of about \$80 million a year.

But Morton said he welcomes Caterpillar's new approach and hopes soon to use it himself when dealing with his own vendors.

Caterpillar uses computer data-mining techniques to look at thousands of parts, not only scrutinizing pricing information, but also weighing details of their design, manufacture and function.

By tapping into computer data that Caterpillar engineers already use to design and make parts, this analysis provides a wealth of information to help determine not only which parts appear overpriced, but also to provide clues as to what's driving excessive cost.

Because the technical information comes straight from design and manufacturing software, Morton said, it can suggest if a part such as a radiator guard his company makes for a Caterpillar backhoe uses too many welds or has unneeded parts, inflating its price.

"We can have a conversation that benefits everyone," Morton said.

Caterpillar's own researchers created the necessary databases and software to improve the company's purchasing processes, but the company decided a couple of years ago that it needed to spin off the software development process to a smaller company that could focus exclusively on commercializing it.

That Peoria-based company, Akoya Inc., counts Caterpillar as its biggest customer and beta tester, and it has begun to market the software to others. Indeed, Ted Greene, Akoya's chief executive, pitches his product as providing the competitive edge U.S. manufacturers need to succeed in winning business that might otherwise go to Asian factories.

"Purchasing is becoming strategic," said Greene. "It used to be tactical, but CEOs are seeing that it is associated with cost drivers. It's like what happened with information technology. The purchasing function is critical to survival."

Companies have always sought to wring costs out of their operations by wiser purchasing, but it's tedious and time consuming to analyze thousands of parts manually. Bringing a computer to the task speeds the process significantly, Greene said.

"What we can do is highlight the core competency of a supplier," he said. "This helps him compete against

China. Price is a concern to a manufacturer, but it's not at the top of the list. They're more concerned with quality and prompt delivery.

"You cannot just beat up on suppliers. We provide a common language, something the buyer and supplier can both look at."

Computerized purchasing analysis was first devised at Caterpillar by two managers, Nelson Jones and Syamala Srinivasan, who were frustrated that commercially available software programs required too much manual input from engineers and were too slow.

They decided to apply data-mining techniques to the mountains of product information already stored in computers to assist the design and manufacture of products.

"It's a little like buying a house," said Jones. "You have two bedrooms, so many square feet, and you look at what similar houses in the same neighborhood are selling for. If you add a bedroom or a three-car garage, you have a formula to show how much that should add to the cost."

Applying their software to 2,500 cast parts such as elbows, housings and pulleys that are used to make Caterpillar engines, Jones said they found 250 parts that appeared overpriced. In fact, the analysis' first run suggested that the overall cost of all 2,500 parts would drop by 17 percent merely by bringing the prices for these 250 parts into line, he said.

Of course when the engineers took a closer look at some parts spotlighted by the computer program, they found reasons for high prices in some cases, Jones said, but they also discovered many ways to lower costs.

"What we found was that we could realize about one-third of the rough potential suggested by the computer analysis," Jones said. "So the net was we could trim 5 to 7 percent from the overall cost of this family of parts."

Caterpillar management decided that spinning off the software to an outside company would mean faster progress on refining and improving it, and it may also make money.

"This isn't a core product for Caterpillar," said Bill Wendle, Caterpillar manager of business services. "It enables a key process for us. But we think that Akoya can apply this tool and enhance it with features useful to many companies."