

Show Me the Money

Akoya's cost analysis technology digs deep to help manufacturers find potential savings.

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Brett Holland, chief operating officer of Akoya, is convinced he has the technology to help buyers and sourcing departments wade through swamps of financial data to find buried nuggets of savings. That's why his company's flagship product is named after one of the most sought-after types of pearls.

The Treasure Trove

According to Akoya, a manufacturer's purchasing world can be divided into three distinct categories.

Indirect materials: Paper, pens and other ready-made items that are not designed by the company and won't go into their products.

Catalogable direct materials: Screws, snaps and other items that will be incorporated into end products.

Highly engineered direct materials: Items designed specifically for the company's purposes and that will become part of the company's end products.

The majority of what a manufacturer buys, Akoya observes, are the highly engineered direct materials. Akoya Cost Management Analytics takes you deep into this last category to find the hidden potential savings. This is where a product's cost is largely driven by its unique design characteristics: materials, density, number of curves, number of void surfaces and so on. So if you can find correlations between the cost and these attributes, you might be able to find ways to lower the cost by redesigning the part or reshuffling the supply chain.

"Let's take, for example, the aluminum couplings used in trucks," observes Mickey North Rizza, an analyst from AMR Research. "You might say, 'Aluminum prices are going up. Can I make this part out of something else? If I can't, can I shave off some of its wall thickness? Where can I do that? How can I do that? Where is it going to impact me the least, in terms of durability, functionality and stress resistance?' Then you ask, 'What other products can I apply the same process to?' Now you have an entirely new repeatable way of looking at components and reducing costs."

How it Works

In Holland's words, Akoya "takes the [client's] CAD files, strips the relevant information and marries that to the financial data." Once the information from CAD files, purchasing and accounting are in place, you can assemble a dataset, comprising a collection of parts. You can summon up parts by finding similar parts to one target part (based on characteristics such as the number of holes, the degree of tolerance required and so on) or by specific categories (forging, casting, hydraulics and so on). And you can reorder the grouping by supplier, materials, weight,

part number or some other attribute, much in the same way you might rearrange columns in a Microsoft Access or ACT! database. Then you hit a button to run analysis.

The mathematical models Akoya uses to calculate savings might be impossible to convey in plain English. For what it's worth, here's Holland's summation: "Our analytics map the relationships between the [parts'] features and their costs. From those relationships, we can predict the cost of the part based on the feature set involved. So we compare what it should cost based on its features to what it does cost in the market -- what you have to pay for it. Then we find the delta [the incremental variables] within it, multiply it by whatever volume you are buying and then come up with potential savings."

The Analysis Results dashboard shows a tabulated inventory of the part characteristics that influence the costs, along with the greatest opportunities for cost savings. For deeper analysis, you can dissect the parts individually. For example, by examining the part's history and design features, you might discover that the pressure test required to produce the part is one of the greatest cost drivers.

The other part of Akoya's strength is its supply source analysis. It can stack up one supplier against the others in a comparative view, giving you clues as to which supplier is the best fit for a part or group of parts. Based on the part's manufacturing requirements, you might then single out suppliers with proven competency in machining holes or handling multiple risers. In some cases, you might find that you can realize some savings simply by increasing or decreasing the length of your contracts with certain suppliers.

Implementation

When asked to discuss implementation timeframe, Holland says, "It's not like an enterprise software implementation." In other words, it's not a drawn out process that might take years. "We usually set the time around three to four months. It gives us time to understand the organization, their data structure, what's unique about the data structure, and then configure a system for them," he estimates.

AMR's Rizza remarks, "The product is currently centered around discrete industries. I see an immediate impact in aerospace and defense, automotive and industrial equipment. The design and source process accounts for approximately 5% of the cost in these industries. But the process defines more than 70% of the program costs, so targeting the costs during the initial design and sourcing phases is imperative."

"Our clients come from mainly four industries," Holland says. "Industrial equipment, aerospace and defense, automotive and high tech." Akoya is currently not thinking of veering far beyond traditional discrete manufacturing markets, but, Holland points out, "A lot of the same characteristics exist in other industries, like retail and apparel. A shirt, for instance, has thread count, button count, cufflinks, fabric and other differentiators, but retailers have no mechanism for calculating, say, how much does the addition of a certain sheen affect the cost of the shirt?"

Reading Between the Numbers

Accounting systems and enterprise systems can spit out reports with raw numbers, but certain manufacturing variables influencing a product's cost won't be apparent at first glance. "What is the effect of a certain material on a product?" Holland asks us to ponder. "That's not the same as asking how much the material costs. If you choose one material over another, you know it adds

\$2 per pound, but how much additional will it cost in primary machining, secondary machining -- how does it affect the overall cost of the product? How about requirement testing? You can tell how much it costs to run a durability test, pressure test, tolerance test, but what is the effect of dropping [the tolerance level] to 5 microns? It's pretty difficult to determine that unless you have those factors mapped to the cost structure."

AMR's Rizza says, "What I like about [Akoya] is, it helps you think about what's important, what's not important, how you want to integrate the items and what you want to do going forward. ... [The company] has a great product -- there's no doubt about that. But getting it out there, getting it used -- that's difficult. Like any new company putting out a new product, it's going to take time."