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Siemens builds combinatorial capabilities

Procurement is a major component of future growth and profitability for Siemens, the German-based giant, which had been affected by the downturn in electronics and telecommunications coupled with rising costs from pensions and an expensive German workforce.

In a speech to shareholders earlier this year, Dr. Heinrich v. Pierer, president and CEO, unveiled the three-pronged Siemens Management System: innovation, customer focus and global competitiveness, which spotlights purchasing.

“The fact is that we have to more rigorously orient our procurement activities toward the global market, in part as a result of the changing currency parities,” he commented. “And we must also take advantage of the differences in worldwide costs for production, software development, engineering and administrative functions.”

Speaking in part to a large German press corps, which had been critical of workforce reductions, Dr. Pierer added: “We need innovative ideas to secure as many jobs as possible --and also to create new jobs again. Growth in Germany will only resume when we stop rejecting --a priori-- the new and letting other regions march ahead.”

One of the interesting examples of the program combines innovation and purchasing.

Siemens in North America is pioneering use of combinatorial optimization bidding, a relatively new technology application in the procurement arena. The concept goes beyond on-line biddings and auctions to provide suppliers the opportunity to reconfigure lotting, bundling and other cost-sensitive parameters, such as T&Cs, to provide better value based on their capabilities. The concept also allows suppliers to express conditions that would create even more favorable pricing, such as if you also give me at least 40% of lot B, I will give you a further X% price rebate.

In an interview with globalcpo.com, Sebastian Kahlmeyer, vice president of procurement and logistics for Siemens in North America, said his group has conducted a number of combinatorial bidding events, the last ones of which allowed expressive bidding by suppliers.

A very recent event--an annual global logistics offer--added yet another unique twist. Buyers and suppliers could exchange ideas online during the event. “If you imagine the rich set of line items in areas such as air freight, it would be very labor intensive to get feedback manually through e-mails, spread sheets and things like that,” commented Kahlmeyer. As a result, the event finished in a few days. Otherwise it would have required twice the amount of time.

The on-line exchange was facilitated by engineers at Pittsburgh-based CombineNet, which developed the optimization software used by Siemens. For competitive reasons, Siemens could not disclose the size of the events they have held nor the savings. Officials at CombineNet say that in general

companies are achieving savings of 10-40% above basic Internet reverse auctions.

Siemens is now also using the combinatorial optimization technology for buying in Germany where CombineNet is also establishing a presence. Kahlmeyer estimates that a one-digit percentage of Siemens' North American spend of approximately \$10 billion uses the new technology. That could rise, however. "It is possible that optimization could become another feature in the corporate e-procurement toolbox so it could become accessible by all Siemens' buyers," said Kahlmeyer.

Siemens launched its electronic procurement program in 2000. Called Buy-Side-Market place, the system allowed suppliers to communicate electronically with Siemens 3,000 professional buyers. Electronic procurement at the German manufacturing giant has progressed significantly since then. It covers the full spectrum of programs from electronic information to electronic ordering. In the case of optimization, Siemens is clearly one of the leaders.

The gains at Siemens are particularly impressive considering the company's decentralized structure. Its business units adopt new programs, such as optimization, through consensus. Benefits must be clearly defined and then business leaders can opt in. They are not forced in. It makes sense to use optimization for bidding when there are a lot of line items coupled with a plethora of cost-sensitive parameters. Other requirements include a large and heterogeneous supply base coupled with internal customer requirements and restrictions that are heterogeneous. "If they are all there, it is a clear opportunity," commented Kahlmeyer, who reports directly to Siemens' chief financial officer in North America and has a dotted line relationship to Siemens global procurement and logistics leader in Munich.

The combinatorial technology also works in less complex situations. "Much of the work we are doing in direct materials like packaging and raw materials have relatively few items," says Michael A. Concordia, vice president of marketing at CombineNet. "The complexity exists in the cost make-up of the item. Our tool gives you the capability to dissect the cost model. It does not require many suppliers. We can help people churn out great savings with few suppliers."

--Doug Smock