Steelmaker Criticized For IT Upgrade Plans

BY MIKE KOLLER

Bethlehem Steel Corp. is aggressively working to upgrade its supply chain and data warehouse systems under the specter of an acquisition, a recent bankruptcy filing and unrest in the steel industry.

Early this year, the company will upgrade its i2 Technologies Factory Planner application. It also plans to build a data warehouse in the second quarter for a unit that makes a product known as light, flat-rolled steel. Bethlehem officials said the upgrades are needed to help cut the cost of managing inventory and to access information needed to make timely business decisions.

Bethlehem officials said their reliance on open-architecture middleware platforms should help ease integration with a new parent. But experts questioned Bethlehem's decision to go forward with such large IT projects when it faces a potentially messy IT integration effort with a suitor.

"Open architecture will help integration with another company in processing information at the functional level, but business rules will conflict," said AMR Research analyst John Fontanella.

Other factors besides technology could impede integration, said Irma Becerra-Fernandez, a professor of information systems at Florida International University who has also studied the steel industry.

"A technology project requires not just good technology, but management skills and..."
support and a commitment to make it work," she said, noting that new owners may not back a previous regime's IT decisions.

Once a titan of U.S. industry that made steel for landmarks including the Golden Gate Bridge, Bethlehem suffered a net loss of $152 million in the third quarter of 2001, compared with a $35 million net loss a year earlier. Revenue fell 17 percent.

In October, the company filed for Chapter 11 bankruptcy protection, following the path of more than two dozen steelmakers in recent years. The steel industry overall is stumbling. Declining demand, exacerbated by the Sept. 11 attacks, has reduced the national appetite for automobiles and appliances. Excess domestic and international capacity has depressed prices.

USX's Steel Group reportedly plans to acquire a group of struggling steelmakers—including Bethlehem, National Steel Corp. and Wheeling-Pittsburgh Steel Corp.—and consolidate them into a massive entity.

Although Bethlehem is confident the proposed consolidation will occur, possibly by midyear, it's pushing ahead with upgrades to the supply chain and data management systems it first began to implement in 1995.

At its Sparrows Point facility in Baltimore, Bethlehem will upgrade its existing i2 implementation to improve visibility into its manufacturing processes. Sparrows Point by March will upgrade to i2's Trade Matrix Factory Planner version 5.1 or 5.2, which for the first time will offer real-time visibility across all operating areas of the plant to improve inventory management while boosting on-time delivery to customers.

Since Bethlehem hasn't yet decided between versions 5.1 and 5.2, it can't estimate the exact cost. Upgrading to 5.2, a fully Web-enabled version that also ties all i2 apps together, would cost hundreds of thousands of dollars, analysts said. But Elise Fletcher, manager for information technical and process system, outlines the general schedule for producing steel.

Managing The Factory
A complicated sequence of events—managed by i2 software—occurs between receiving an order at Sparrows Point and loading it onto trucks or railroad cars for shipment.

Orders come in by telephone and fax and are entered into a homegrown, mainframe order-entry system. I2's Trade Matrix Master Planner, through an interface with the order-entry

“if we have specialized reports that we want to publish more widely, this newer version will eliminate the hassle of exporting that data from other i2 systems and importing it to a Web-enabled environment for distribution,” Fletcher said.

By managing the factory's schedule from a Web version of Factory Planner, Sparrows Point employees will be able to easily access data that will let them reduce the amount of inventory kept on hand to build products, cutting the cost to build the final product.

Conary predicted few hurdles in melding Bethlehem's systems with those of USX-U.S. Steel, a view shared by Fletcher.

“We have followed basic open-architecture standards, so if we wanted to fold our network into another, it would be no issue,” Fletcher said. “Even for things like the way we run databases or we run applications, some of them can run in stand-alone mode, but if we want to share data, our middleware will facilitate that.”

Bethlehem's chosen middleware platforms will help in any integration effort, AMR's Fontanella agreed, but still won't go far enough. "WebMethods and MQ will help in integrating other systems—they'll drive some level of standardization, but it will be more of a loose coupling rather than a hard integration," Fontanella said.

Factory's Warehouse
The Sparrows Point facility, which maintains a data warehouse for its traditional steelmaking operations, recently began building another for light, flat-rolled products such as tin and hot-rolled, cold-rolled and coated steel, with plans to complete the project by June.

The data warehouse is designed to give the facility real-time data for individual transactions, such as data about alloy consumption in manufacturing. The data has always been accessible but was harder to get without access to the middleware.

Thomas Conary, Bethlehem's senior vice president of procurement, IT and logistics who launched the supply chain automation effort at Bethlehem and will retire alongside with most Bethlehem senior management at the end of this month, said the Internet is key to enabling the company to compete.

"By using Internet technologies, we will get the most value we can from the employee-supplier-triangle," Conary said.

But what about cross-company integration if consolidation occurs?

I2 incorporated WebMethods middleware into its Trade Matrix suite of products, letting the i2 applications communicate among one another via XML, without needing to access the middleware.

"Historical analysis we’re good with, but on the tactical stuff, like what happened 20 minutes ago, we’re weak," said David Kohlway, technical manager at Sparrows Point for EDS, which has 66 IT staff working at Sparrows Point and manages much of the IT infrastructure. Bethlehem employs 30 IT staff at the facility.

Like Bethlehem's existing data warehouse, the new one will be based on an Oracle database running on AIX-based RS/6000 servers. MQ Series middleware will be used to let it interface with the company's mainframe apps.

Bethlehem officials declined to specify the total cost of the data warehouse project but did say server hardware alone could cost $250,000.

"This will give our people data availability when they need it on both a tactical and strategic basis," Fletcher said.

Formerly, collecting data for business decisions was cumbersome. Information was scattered across different mainframe systems, including IMS and DB2, with few tools to consolidating the data. Today, users still have to get a printed report from the mainframe and enter it into an Excel spreadsheet for analysis.

An immediate benefit of the new data warehouse will be a reduction in processing charges by eliminating the need to run reports off the mainframe.

Despite the impending changes in Bethlehem's business, Fletcher dismissed the notion that Bethlehem should wait to build a new data warehouse and install the Factory Planner upgrade.

"Upgrading the data warehouse is a win for us because we’re removing reporting from our mainframe environment and put it into our local environment," Fletcher said. "That saves costs and gets us the data faster."

Outsiders, however, asserted that Sparrows Point should wait and see how corporate consolidation shakes out. The goal should be to minimize both the cost of consolidating and the time it takes to run as one successful company, so to add complexity is a mistake, said Meta Group analyst Howard Rubin.

"They’re in a real risky stage, and it’s time to step back and analyze that investment," Rubin said.

Unfortunately, i2 and other complex, multimodule applications like it don’t easily integrate with other applications, even when robust middleware is used, said Florida International University's Becerra-Fernandez.

Regardless of whether the IT strategy is sound one, Bethlehem's very survival depends on merging, said J.P. Morgan analyst Michael Gambardella, who added that the ranks of steel industry players must be whittled to four or five from the current eight or nine large companies for the industry to remain viable.

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