GREENHECK FAN CORPORATION

USING SAP® SOFTWARE TO INCREASE EFFICIENCY AND SUPPORT LEAN MANUFACTURING

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Donovan Brekke, Vice President of Information Technology, Greenheck Fan Corporation

QUICK FACTS

Company

- Name: Greenheck Fan Corporation
- Location: Schofield, Wisconsin
- Industry: Industrial machinery and components – heating, ventilation, and air conditioning (HVAC) for commercial, institutional, and industrial applications
- Products and services: Air movement and control equipment
- Revenue: US$500 million
- Employees: 2,500
- Web site: www.greenheck.com
- Implementation partner: Sparta Consulting

Challenges and Opportunities

- Increase visibility into component inventory required for builds
- Support multiplant operations
- Accelerate production of variant product configurations
- Ship orders on time, every time
- Boost productivity on the shop floor and transparency across the business

Objectives

- Deploy a highly configurable enterprise resource planning (ERP) system that meets Greenheck's unique manufacturing needs
- Simplify interfaces and information access so managers and shop-floor workers can work more efficiently in a lean manufacturing environment

SAP® Solutions and Services

- SAP® ERP application
- SAP Manufacturing Integration and Intelligence (SAP MII) application

Implementation Highlights

- Used phased deployment of SAP ERP
- Solved master data issues before moving data into SAP ERP
- Deployed SAP MII incrementally to address specific user needs

Why SAP

- Software that best met requirements, as demonstrated in head-to-head comparison with top vendors
- Highly configurable software
- Support for variant product configurations
- Ability to create intuitive, custom user interfaces (UIs) for different workers who need to access information in SAP ERP

Benefits

- Anytime access to accurate inventory data, reducing work in progress and furthering lean manufacturing efforts
- Higher customer satisfaction by consistently manufacturing and shipping products on time
- Lower operational costs by using personalized UIs to reduce time required to find information in SAP ERP and perform daily tasks
- Better business control and more accurate planning due to increased visibility into what's happening upstream and downstream
- Increased efficiency and lower costs, for example, by automating processes and enabling Greenheck to consolidate orders for shipping

GREENHECK®
The Solution Company.

SAP Customer Success Story
Industrial Machinery and Components – Heating, Ventilation, and Air Conditioning for Commercial, Institutional, and Industrial Applications

SAP®

Greenheck Fan Corporation is the global market leader in manufacturing air movement and control equipment. Its flagship ventilation products are found behind walls, in ductwork, or on the roofs of buildings of all types. After scaling to five large manufacturing facilities in the United States and China, the company had clearly outgrown its 20-year-old legacy enterprise resource planning (ERP) system. It deployed the SAP® ERP application and the SAP Manufacturing Integration and Intelligence (SAP MII) application to enable new efficiencies and growth.

Facing the Limitations of Legacy ERP Software

Greenheck, which is a privately held business, has seen double-digit growth for most of the life of the company. Currently, the company has close to US$500 million in net sales, approximately 2,500 employees, eight manufacturing facilities, and six distribution centers located strategically throughout the United States, and in Kunshan, China, and Satillo, Mexico.

Central to Greenheck's growth was a series of strategic acquisitions and two new company introductions over a number of years. These new companies allowed Greenheck to branch out into new but related product and service areas, but they also required the introduction of new, global business processes. For example, one acquisition required that Greenheck manufacture complex, build-to-order architectural products that demand almost infinite variations in customer orders. "Our legacy software simply couldn't support variant configurations," states Donovan Brekke, vice president of information technology at Greenheck. "For some of these products, we're talking over 1.5 million possible permutations, which our ERP software couldn't handle."

And because the ERP system wasn't multiplant, they couldn't use it to identify which manufacturing plant was actually going to manufacture the products for a given order. "We developed a workaround – putting a prefix on every part number to identify which location would manufacture it. This was a challenge, given that we had over 200,000 parts," states Brekke. "Every time we added another plant, we had to add another 200,000 parts to our item master data list."

These issues made it difficult for Greenheck to complete product manufacturing on time – a serious and costly problem for its customers. Brekke explains: "Some of our customers have to shut down a street and order a crane to lift one of our units to the roof of a skyscraper. Significant logistics are involved in something like this, so we really have to deliver on time. The problem was that we often couldn't."

Choosing and Deploying the Right Solutions

Greenheck began searching for a new ERP solution when its legacy ERP system could no longer regenerate overnight. Says Brekke, "We'd come back the next morning and find that no purchase orders had updated through the system, or that none of the production orders had been scheduled." So the company invested nearly 1.5 years in investigating different ERP solutions – ultimately turning to a third-party consulting arm to help it make the best selection for the business.

Ultimately, Greenheck deployed SAP ERP, followed by SAP Manufacturing Integration and Intelligence. "In a detailed, head-to-head comparison of functionality, SAP ERP clearly beat the competition," states Brekke. Equally important, SAP ERP supports multiplant operations and variant configurations, and the company could configure it to meet its needs.

SAP ERP was deployed using a phased implementation plan that included time to fix some significant master data issues; the initial deployment focused on finance and master data management. SAP MII was deployed later as a way to support Greenheck's lean

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manufacturing initiative. It complemented SAP ERP by allowing Greenheck to take customization to a whole new level – for example, by enabling rapid creation of simplified user interfaces (UIs) for shop-floor workers who need information that's stored in SAP ERP, such as order customization details.

Realizing Benefits Today – and in the Future

Today, Greenheck has a rock-solid ERP system that supports on-time manufacturing of customized orders across its plants. "With SAP ERP, our on-time shipping is tremendously better than it used to be. And it's for a variety of reasons," explains Brekke. For example, SAP ERP enforces new disciplines that are essential to delivering complete orders on time; in the past, incomplete orders sometimes slipped through the cracks and shipped to customers. "But SAP ERP doesn't allow you to ship an order to the customer that's incomplete," states Brekke. Data quality is enforced with automated checks, keeping processes supported by SAP ERP running optimally. And the company never runs out of inventory anymore; reorders are triggered when on-hand warehouse levels at each plant reach predetermined levels. As a result, Greenheck now offers a higher quality of customer service.

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The company is also using the warehouse management functionality provided by SAP ERP to consolidate loads and create outbound deliveries based on the availability of the end product. "We try to consolidate shipments to various locations in the country," explains Brekke. "It might cost us $6,000 to run a truck or two from here to Los Angeles. And if I can put two orders on the truck, I've just cut the freight cost in half for each of those customers. The visibility provided by SAP ERP has been important to us. We can see what's happening upstream so we can plan accordingly."

Boosting Productivity on the Shop Floor

Greenheck is just beginning to leverage SAP MII – and management sees this software as essential to maximizing return on its investment in SAP ERP. "We are using SAP MII to make SAP ERP work for us in unique, highly customized ways," says Brekke. "We understand that the next wave of improvements will be around driving the information that's in SAP ERP directly to machines – so that we don't have to rekey information in – or to the people interacting with those machines. It will be about the presentation of the information to the right people and machines so we can accelerate transactions. And for us, SAP MII is the best tool to do this."

For example, one of Greenheck's divisions has over 600 different extrusion part numbers and an inventory storage system that houses many thousands of dollars of these extrusions. In the past, workers guessed at what the extrusion inventory was: if they used 10 feet, they guessed they had removed eight pounds and made those adjustments in the inventory tracking system. "But we never really knew how much we had in inventory, so we developed an automated storage and retrieval system. To tie this system into SAP ERP, we use SAP MII," says Brekke. Now, SAP MII records the actual weight of that material when a worker hands it to the saw operator. The material is reweighed when it comes back. Inventory is updated live in SAP ERP – giving workers a real-time inventory management system. "It has allowed us to dramatically reduce the inventory that we carry, because we no longer need to pad inventory to prevent out-of-stocks that would halt production and delay shipments," he explains.

SAP MII is being used to accelerate and improve product testing. For example, the company is using it to create personalized management dashboards, worker UIs, and universal shop-floor dashboards that push information in SAP ERP to wherever it's needed. "In our Minneapolis facility, we manufacture a roof-top unit for heating and air conditioning for commercial buildings," states Brekke. "The guys over there asked us to develop an application to help them with their testing activity. We did – and SAP MII now delivers the logic, or the test parameters, to the test stand itself. So testing is done as we fire up that unit and test the coil and the ambient temperature. And as the test is completed, the information is pulled back into SAP MII automatically." So for a given production order, SAP MII collects all of the test results, associates them back to that production order, and stores it in SAP ERP.

Looking Ahead

Over the next few years, Greenheck plans to step up its use of SAP MII across the business. "We're looking forward to using it to accelerate the collection of information needed by SAP ERP and to boost productivity and transparency in our lean manufacturing environment," concludes Brekke. "After all, shop workers are there to build – not navigate SAP ERP. We'll be using SAP MII to make it easy for them to find and share information – often with little or no training required."

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