

SAP Customer Success Story Industrial Machinery and Components – Air Movement and Control Products



“We can now go into another wave of improvement opportunities. It all sits in front of us with SAP software in place.”

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

AT A GLANCE

Company

- Name: Greenheck Fan Corporation
- Location: Schofield, Wisconsin
- Industry: Industrial machinery and components
- Products and services: Air movement and control products
- Revenue: US\$500 million
- Employees: 2,700
- Web site: www.greenheck.com
- Implementation partner: itelligence Inc.

Challenges and Opportunities

- New software to support company growth strategies
- Ability to coordinate and manage work across multiple manufacturing sites
- Ability to manage complex product variant configurations
- “Go lean” and automated processes without adding new people

Objectives

- Grow business in face of downward trend in nonresidential construction
- Gain market share by being more responsive to customer demands
- Increase profitability by adding premium customer services
- Support the Greenheck production solution

SAP® Solutions and Services

- SAP for Industrial Machinery & Components solutions
- SAP® ERP application
- SAP NetWeaver® technology platform
- SAP NetWeaver Business Intelligence and SAP NetWeaver Exchange Infrastructure components

Implementation Highlights

- Organizational change management and training a primary focus
- Minimal disruption to the business

Why SAP

- Support by industry-focused solution for range of required integrated tools
- Robust software for configuring multidimensional product variants
- Scalability to support company's expanding business processes
- Industry leadership and support for lean manufacturing
- Support for complex manufacturing and multiplant capabilities

Benefits

- Increase in market share while growing business in a down market
- Increase in purchasing productivity
- Significant increase in throughput without adding to shop headcount
- Reduction in lead times from between 3 and 6 weeks to between 1 and 5 days
- Improved visibility into business with better and faster access to information
- Streamlined production processes
- Improved coordination across multiple plants
- Enabling of faster growth through acquisitions
- Reduced need for manufacturing space

Existing Environment

20-year-old nonintegrated core legacy software

Third-Party Integration

Hardware: HP DL380s

GREENHECK

Greenheck Fan Turns on the Switch to Lean Manufacturing with Solutions from SAP for IM&C

“The purpose of going through lean,” says the production planning team leader for Greenheck Fan Corporation, Corey Sivertson, “is not to lay people off. That has been very important to Greenheck, and we’ve prided ourselves in not having any layoffs. The purpose of going lean is to reduce waste.”

The evolution of Sivertson’s statement began in 2002 when Greenheck, the worldwide leader in the manufacturing of quality air movement and control equipment, faced a downturn in the ventilation equipment market. “With that downward trend in motion and forecast to remain so for three years, we needed to figure out a way to continue to grow our company,” says Sivertson, “and that’s when our lean journey began.”

At that time, the 60-year-old company, headquartered in Schofield, Wisconsin, had grown significantly through aggregate product offerings, acquisitions, and international expansion. To support its commercial, institutional, and industrial buildings customers, the company maintained 1.4 million square feet of manufacturing space in 14 manufacturing facilities across the United States, as well as one in Kunshan, China, and a dozen distribution centers in the United States, Dubai, Shanghai, and Mexico.

As a result of this global growth, coupled with increasing customer demand for shorter lead times, Greenheck's costly, 20-year-old core systems were strained, and the company's IT group was struggling to keep up. The company needed a solution that could support its international expansion and growth strategies. Furthermore, the nonintegrated legacy systems made it difficult to coordinate work across multiple plants; nor could they handle the lean manufacturing of dimensional products and the multitude of associated characteristics that go with them. Greenheck required a superb product configuration utility.

Finally, steel prices were rising. "All of our products are made out of aluminum or steel," says Sivertson. "With the price of steel going up, we had to find a way not to pass that cost onto our customer, and we knew we could do that by becoming lean in our manufacturing processes."

The next question was which solution to choose to support Greenheck's lean journey.

"The purpose of going through lean is not to lay people off. That's been very important to Greenheck, and we've prided ourselves in not having any layoffs. The purpose of going lean is to reduce waste."

Corey Sivertson, Production Planning Team Leader,
Greenheck Fan Corporation

Greenheck Becomes a Fan of SAP® Software

Going lean is an exciting step for any company, but getting there means transforming business processes. Greenheck wanted to be certain it chose the right solution and provider to get it there. "The selection process was very rigorous," says Don Brekke, vice president of information technology at Greenheck. "We used a formal approach of weighting and scoring the requirements for each of the potential solutions, added things up, and SAP was the leader."

SAP was the only software supplier that could meet all of Greenheck's requirements. The company selected solutions from the SAP for Industrial Machinery and Components (SAP for IM&C) solution portfolio and chose the SAP NetWeaver® technology platform on which to build its lean manufacturing system. These leading software products provided the industry-focused solution, comprehensive applications, and integrated tools Greenheck required to transform itself into a newer, leaner, more adaptable and responsive company.

During the selection process, SAP's industry leadership in supporting lean manufacturing and its understanding of complex, multiplant manufacturing processes impressed Greenheck. The company also felt that SAP® software had the bandwidth to be scaled up and adapted for Greenheck's expanding business processes. For example, with 12 product groups, hundreds of product families, and thousands of product configurations to contend with, Greenheck recognized the extraordinary utility of the variant configurator contained in the SAP ERP application. The robust software for configuring dimensional product variants had the solid functionality to manage the information used in producing Greenheck's complex engineered-to-order, multidimensional products. This functionality was a key point in selecting a solution that would support the independent businesses that make up the company's sales force.

Greenheck Goes Live with Lean

The first go-live of a four-phased implementation occurred in January 2005. It included the implementation of the SAP ERP application and the variant configurator, as well as the SAP NetWeaver technology platform and the SAP NetWeaver Business Intelligence (SAP NetWeaver BI) and SAP NetWeaver Exchange Infrastructure (SAP NetWeaver XI) components. "We're following a phased approach," says Sivertson, "primarily because of the size and variability of our plants, and because of the acquisitions we had in the middle of the implementation that made a big bang difficult." For its efforts, the Wisconsin Manufacturing Alliance gave Greenheck the 2005 Wisconsin "Manufacturer of the Year Award."

Focused on organizational change management and training since 2005, Greenheck has implemented these solutions at several sites with only minimal disruption to the business. During the implementations, instead of coding its existing key reports directly into its enterprise resource planning (ERP) software, Greenheck used the SAP NetWeaver BI component to deliver business-critical information and reports to company management and employees – saving time and effort. The company also drew on the SAP NetWeaver XI component to integrate its proprietary product configuration tool used by its sales force with the SAP variant configurator software and the manufacturing process. “We use the variant configurator heavily in both our bills of material and our routings,” says Sivertson. “It’s been a very powerful tool for us.” Greenheck is now in the final phase of implementation, which will include the SAP xApp™ Manufacturing Integration and Intelligence (SAP xMII) composite application.

Greenheck Creates Its Own Lean Production System

Prepared with SAP solutions, Greenheck could now take lean manufacturing seriously. With full support for state-of-the-art processes, the company set out to develop a world-class factory driven by lean manufacturing principles, practices, and techniques. It created its own version of the Toyota production system – the system that started the lean revolution in manufacturing – and called it the Greenheck production system (GPS).

GPS employs the principles of Kaizen, the Japanese term for continuous improvement to eliminate waste involving everyone. Kaizen is the powerful lean manufacturing technique created by Toyota Corporation to enable continuous improvement leading to across-the-board benefits for a company. “When we started GPS, we also started training lean champions,” says Sivertson. “Right now, we have about 100 lean champions within the company who are driving lean process changes for us. They lead our ‘pit stops’ – what we call our Kaizen events. So every week, we have multiple pit stop events going on where we involve people from throughout the company – from CEO and management down to the shop floor – in finding ways for continuing improvement.”

GPS also employs demand flow technology to manage its kanban card system. Kanban, in Japanese, means card or sign or signpost, but in general industry it means a lean manufacturing finished goods and management methodology that uses standard units or lot sizes with a single card attached to “pull” rather than “push” supply through assembly. Using this system, the ordering of stock occurs only when previous stock is withdrawn. “So we’re not just pushing those materials down to assembly; we’re waiting until there’s an empty card to pull it,” explains Sivertson. Greenheck utilizes over 800 kanban materials and over 2,400 kanban cards.

“With that downward trend in motion and forecast to remain so for three years, we needed to figure out a way to continue to grow our company, and that’s when our lean journey began.”

Corey Sivertson, Production Planning Team Leader,
Greenheck Fan Corporation

Greenheck Grows with Innovative Premium Customer Services

Within GPS, SAP software provides comprehensive support for Greenheck’s lean manufacturing, procurement, and distribution processes. This includes electronic kanbans between work centers, with vendors, and from stock room to assembly lines. Kanbans trigger the creation of purchase orders that print at the vendor’s site. The software also includes the sophisticated configuration functionality Greenheck needs to design its vast offering of multidimensional products.

With GPS driven by SAP solutions, Greenheck is now empowered to put its growth strategies into action. In the face of a downward market trend, shorter customer lead times, and rising steel prices, Greenheck seeks a path to growth by getting to the heart of its customers’ needs. With no increase in manufacturing costs, it has developed an innovative quick-ship, quick-build product

offering comprised of convenient one-day, three-day, and five-day quick-build product packages, depending on the customer's need. Greenheck can sell these packages at premium service rates. The efficiencies afforded by lean manufacturing help to make not only the production but also the profitable pricing of these products possible.

Introduced in 2006, Greenheck's quick-build concept for growth quickly became a success. "It gives us really a great advantage to serve our customers what they want when they want it," says Sivertson. Confirming the success of Greenheck's premium service, its competitors have quickly stepped in with their own quick-build product versions. That has not surprised Sivertson: "There is always competition. But we got there first." And it is just the first of many benefits to come.

Greenheck Reaps the Benefits of Going Lean

"Our biggest achievement from implementing lean manufacturing at Greenheck," says vice president Brekke, "is that it enables us to grow our business in a down market." Moreover, SAP solutions provide comprehensive support for significant business growth through the quick and easy integration of newly acquired companies.

In addition, Greenheck is achieving a stream of other financial and strategic benefits. Included among these are improved visibility into the business with better and faster access to information, streamlined production processes, and improved coordination among and between the company's multiple plants. Greenheck also increased its flexibility in dealing with change orders from customers. Furthermore, due to the increase in efficiency enabled by the new solutions, the company can grow without additional headcount. Finally, in the face of growth, Greenheck has reduced, not increased, its manufacturing space.

In terms of operational improvements throughout the enterprise, key performance indicators show a steady improvement since the first phase of the implementation. A snapshot of these operational improvements shows some of the KPIs and their impact on efficiency and eliminating waste at Greenheck. For example, lead times improved from between three and six weeks to between just one and five days, and factory schedule attainment and on-time shipping increased. Distribution productivity went up in the shop and in the office. Productivity in accounts receivable and payable improved. Finally, purchasing productivity saw a large increase, fulfillment productivity increased, and the output of air-handling equipment shot up significantly without increasing the number of shop employees.

Greenheck Fan Is Ready for Tomorrow

As far as lessons learned, Sivertson's advice is to identify lean champions early in the lean journey. "They are the people who are going to drive your lean changes and define the new processes you want to put in place," he says.

Moving forward, following the implementation of the integration and intelligence functionality of SAP xMII, Greenheck plans to implement the SAP Product Lifecycle Management application, beginning with document management. That will further solidify Greenheck's lean manufacturing muscle . . . and blow the competition away.