

SAP Customer Success Story Consumer Products – Home Appliances



AT A GLANCE

Company

- Name: Whirlpool Corporation
- Location: Benton Harbor, Michigan
- Industry: Consumer products
- Products and services: Home appliances
- Revenue: US\$19 billion
- Employees: 80,000+
- Web site: www.whirlpool.com
- Implementation partner: Lighthammer, now a part of SAP® Consulting

Challenges and Opportunities

- Disparate data silos worldwide, resulting from more than 100 enterprise resource planning (ERP) and legacy systems in North America
- Costly IT infrastructure
- Time-consuming, often incomplete reporting
- Lack of ready access to manufacturing data, affecting decision making

Objectives

- Extend ERP business processes to the plant floor
- Monitor, measure, and control quality processes and costs in manufacturing plants
- Enable continuous process improvement and higher asset utilization
- Deliver visibility into manufacturing operations

SAP Solution and Services

SAP xApp™ Manufacturing Integration and Intelligence composite application

Implementation Highlights

- Rapid implementation
- Number of users: more than 1,000 in North America

Why SAP

- Lowers cost of integrating IT
- Displays real-time information
- Allows efficient global rollout

Benefits

- Reduced product defects and rework, resulting in immediate quality improvements and lower costs
- Achieved global visibility across all plants
- Realized higher productivity and production performance
- Attained the ability to perform accurate line-to-line and plant-to-plant comparisons
- Extended the value of the existing SAP business software to the shop floor with minimal training of personnel

Existing Environment

- SAP NetWeaver® platform
- mySAP™ Business Suite solutions
- SAP xApp Analytics composite application
- SAP Manufacturing solution
- SAP Service and Asset Management solution

Third-Party Integration

- Database: Microsoft SQL Server
- Operating system: Microsoft Windows

“SAP xMII is the only solution we've found robust enough to address manufacturing performance applications driving operational excellence across our 60+ plants and technology centers and provide transactional integration with mySAP ERP.”

James Shimp, Vice President, Global Development, Whirlpool Corporation

WHIRLPOOL CORPORATION

Improving Operational Excellence Across Plants with SAP® xApp™ Manufacturing Integration and Intelligence

In order for a company to achieve manufacturing excellence on a global basis, all employees must have timely access to accurate and relevant data. But such access is difficult when the data resides in a myriad of systems dispersed throughout the enterprise. This issue is only exacerbated when manufacturing personnel are unable to monitor assembly line events in real time. This was the situation facing Whirlpool Corporation – based in Benton Harbor, Michigan – five years ago. Fortunately, after looking at these problems, the company was able to identify a solution: the SAP® xApp™ Manufacturing Integration and Intelligence (SAP xMII) composite application. Whirlpool first implemented SAP xMII in one U.S. location – and by the end of 2005, it had deployed SAP xMII to most of its plants in the United States, Europe, China, Brazil, and Mexico.

Whirlpool Corporation is a global manufacturer and marketer of major home appliances, with annual sales of more than US\$19 billion, over 80,000 employees, and more than 60 manufacturing and technology research centers around the globe. The company markets Whirlpool, KitchenAid, Maytag, Jennair, Amana, Brastemp, Bauknecht, Consul, and other major brand names to consumers in more than 170 countries.

The Need to Improve Information Delivery

Prior to its SAP installation, Whirlpool was running more than 100 mostly homegrown legacy applications, due to a variety of independent business units and some acquisitions. Processes and data collection were difficult, which was affecting development work throughout the company. Whirlpool employees at

each plant were pulling data stored in a variety of formats from various systems – some as handwritten notes and other documents – and compiling the data into one common spreadsheet. The spreadsheets from the various plants around the globe would then get summarized in a single spreadsheet back at corporate headquarters – a process that took at least a week to complete.

To create reports, employees had to perform manual evaluations of a vast quantity of information – which affected data integrity and, ultimately, decision making. And, just as important, without access to real-time, accurate information, shop floor personnel and management were hindered in making improvements in product quality and production processes. Whirlpool knew it needed a better way to leverage its data.

Accelerating Success Through Information Technology

Whirlpool launched a mission to accelerate its overall success through enhanced information technology. Part of this mission included linking its vast network of operations around the globe and making better use of its SAP software for enterprise resource planning (ERP) – which Whirlpool had been using since the early 1990s.

According to Rui Fonseca, director of global development for manufacturing at Whirlpool Corporation, “We wanted to extend the functionality of the ERP software to our production employees so they could improve their productivity and performance. We also needed to streamline information delivery to the plant floor. The goal was to reduce our product defects and rework efforts and drive continuous improvement through better decision making.” Whirlpool realized that achieving these goals hinged on integrating multiple manufacturing execution systems, shop floor systems, and various other legacy systems with its ERP software.

The Solution: Integrated SAP Technology

When Whirlpool went looking for a solution, it had specific requirements in mind: It wanted software that would enable it to efficiently collect and aggregate data from various sources as well as visually display data in easy-to-understand formats. The company also wanted a Web-based solution so it could quickly roll out applications to all its global subsidiaries. The SAP xMII composite application – formerly known as Lighthammer CMS – met the company’s needs.

“We had started our strategy for shop floor data collection by building a common database structure across all plants. By adding SAP xMII on top of this, we were able to give our employees visual access to the data and the tools to easily generate reports,”

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Whirlpool Corporation

explains Fonseca. “Essentially, SAP xMII allowed us to connect our plant data to our business data systems without building interfaces for each system.”

Using SAP xMII, Whirlpool created a library of applications and deployed them across its global operations to support lean manufacturing processes such as flow production, visual management, error proofing, and continuous improvement.

Streamlined Processes and Analyses

Whirlpool does not want or expect the shop floor maintenance technicians to spend a lot of time at the PC looking for inventory, searching for spare parts, or navigating through the system looking for the information they need. The company used SAP xMII to build an application that allows users to pull real-time information from the ERP system, combining data from various modules with a simple click of the mouse. This enables them to determine trends and assess the availability of context-sensitive materials, for example.

Placing orders for spare parts used to be a time-consuming process at Whirlpool plants. Now shop floor personnel can easily place an order by adding items to a shopping cart on the screen. All parts must be charged to a work order, and if employees do not have a work order available to them, they can create one by selecting a button on the screen. The work order is created automatically in the mySAP™ ERP application, greatly reducing the time needed to place a material order. The shopping cart is also converted into material tied to the work order, which simplifies the process and captures real-time data from the floor.

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With SAP xMII, Whirlpool is able to feed data collected from the shop floor into mySAP ERP for analysis. Many processes – from data entry, collection, and evaluation – are now automated. The result: real-time manufacturing reporting. Management now has the capability to view reports in various ways, such as by product or region, and can compare metrics between plants, for example, all via a Web browser.

With SAP xMII serving as the key interface for shop floor personnel, Whirlpool has created a backup solution that allows certain shop floor transactions to interact with ERP data, even if the ERP system is down. This means the company’s plants can continue operating nonstop.

Ensuring Quality Improvements

The real-time information that the company collects is now visible to any employee in the plant. Built-in alarms notify personnel of issues such as product defects so that quality issues can be addressed before the product is shipped to a customer.

Whirlpool also uses SAP xMII to track operational equipment effectiveness, one of its key performance indicators, as well as first-pass yield, quality, materials, and scheduling.

For example, an SAP xMII–based bill of materials production application allows Whirlpool shop floor personnel to designate and verify part locations, communicate part differences between products, and check part drawings and change notices all from

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one screen. By having the ability to electronically compare the bill of materials for a previous build with the current bill of materials, a plant assembler can quickly see which components are different from one refrigerator model to another, for example.

SAP xMII also enables Whirlpool personnel to monitor the company’s foam chemical tanks. Prior to the implementation of the SAP software, employees were manually reading the tank gauges, placing a number of phone calls to verify tank levels, and collecting data in spreadsheets. With SAP xMII in place, they can easily view tank level data via a Web browser – so they know right away when a tank needs refilling. This saves considerable time and eliminates a non-value-added task.

Providing Real-Time Insight into Data

With SAP xMII, Whirlpool can now collect information from the various data silos residing throughout its plants and visually present that information to the engineering group and the management team.

“When data was collected via spreadsheets, it was difficult to get an understanding of what was happening on the shop floor. Now, our engineers have access to real-time information, which enables them to quickly address any issues that might arise,” says Fonseca.

Every 30 seconds a display shows shop floor personnel the quality of products tested, issues identified on the assembly line, and the status of product repairs. “This helps us avoid significant

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rework at the end of each day or at the start of each shift. The result has been much better quality and an increase in our first-pass yield,” continues Fonseca.

Whirlpool can also respond more effectively to opportunities and identify best-in-class processes – thanks to highly efficient scorecard applications it developed using SAP xMII. And, because its shop floor personnel now get immediate feedback on critical data such as quality, counts, and scrap, the company can ensure a proactive approach to problem solving.

Achieving Competitive Advantage

“We’ve realized a significant return on investment in just the first two years of using SAP xApp Manufacturing Integration and Intelligence. The software has helped us improve the control and predictability of our processes, consolidate all historical data in a single source, increase the velocity of our business by being more responsive to customer demands, and enhance the ROI of our existing IT assets,” says Fonseca.

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“Our plan is to create dashboards that offer our management team a summary of all the shop floor data and metrics in real time on a daily basis. This will enable our managers to evaluate our performance each day instead of on a monthly basis – and proactively address issues as they occur in manufacturing.”

Fonseca concludes, “Our relationship with SAP has been outstanding; its people have always responded quickly to our needs. And, with SAP xMII, we now have a solution in place that helps us manage and use our data more effectively.”