

World-Class Warehouse Management System Streamlines Distribution Across the Enterprise

The Company: Global Leader in Industrial Manufacturing and Distribution

Eaton Corporation is a worldwide leader in the design, manufacture and distribution of a comprehensive line of high-efficiency hydraulic systems and industrial components. Once known as a vehicle components supplier, Eaton has diversified to include a broader industrial and commercial focus. Today, Eaton's businesses comprise four distinct segments: Electrical, Fluid Power, Truck and Automotive.

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Gaylord Seemann, Director FPG IT—Manufacturing Systems, Eaton Corporation

Eaton reported 2005 sales of \$11.1 billion. Headquartered in Cleveland, Ohio, the company has 60,000 employees and sells products to customers in more than 125 countries.

The Challenge: Bringing an Acquired Distribution Facility up to Enterprise Standard

Eaton's distribution facilities make an enormous number of products and product lines available to customers on short notice—and provide 95 percent or better on-time delivery. The distribution centers deliver to both customers and other Eaton facilities.

Eaton's distribution operations need to be able to accurately pick and ship the smallest orders along with the largest. Eaton's biggest customers may order thousands of item units at a time, typically shipped in full cartons. But, smaller customers often need hundreds of different items with only a few units of each item; small quantities of item units must then be combined in cartons for shipping.

When Eaton acquired its Cleveland, TN facility, it ran an ERP package linked to a warehouse management system (WMS) application that had been highly customized. The system worked on batch updates and had multiple application interfaces: customers and service personnel could not access current, accurate information and productivity was lost due to interface issues. Those systems could not provide the speed, agility and accuracy required; much less meet company growth objectives for the facility.

The Solution: Eaton and QAD Partner to Create Advanced Warehouse Management Solution

Decision makers chose to replace the old ERP with QAD Enterprise Applications, to standardize the Cleveland facility with other Eaton sites. The business managers at the Cleveland warehouse recognized that the operation would also need an up-to-date WMS to work efficiently with other applications throughout the company.

Eaton chose QAD Warehousing based on the company's long-term partnership with QAD and its own internal expertise in QAD product functionality.

The company has over 70 sites in locations throughout the world using QAD Enterprise Applications on the same server. Eaton put the two warehouses on that same remote server and added both sites to a database serving 14 other Eaton plants and up to 500 QAD Enterprise Applications users.

The centralized strategy provides greater reliability, while the tight integration of QAD Enterprise Applications and QAD Warehousing supports data integrity and eliminates issues that can arise with customizations and point solutions. Explains Director FPG IT—Manufacturing Systems, Gaylord Seemann, “The Cleveland, TN warehouse is a 24–7 operation. We must guarantee minimal disruption to its operations. QAD Warehousing fits with our centralization strategy, allowing us to consolidate even our WMS strategy into a robust, centralized data center.”

For the warehouse managers, the batch picking capability in QAD Warehousing was a critical component. Batch picking is key to orchestrating the combination of large volumes of order lines with picking many small items of all shapes and sizes. With batch picking, multiple orders can be picked simultaneously—radio-frequency (RF) barcode scanning functionality is also employed to ensure data accuracy. And, batch picking facilitates more efficient workforce management and workload distribution.

“In a lean distribution environment, having a streamlined and even flow of goods in the warehouse from the reserve area to the picking area—followed by consolidation and shipping—is essential to managing your workforce efficiently,” says Jim Sowers, manager of manufacturing and distribution projects at Eaton. “When you have large volume orders with various different item parts and quantities for each carton, the amount of time required for picking activities is much higher than that required for full-pallet picking or full-carton picking activities. Organizing the workforce and the workload in the warehouse becomes critical to avoid congestion and shipment delays.”

Sophisticated New Functionality Propels Efficiency and Effectiveness

Every day, warehouse employees pick more than 14,000 SKUs from 40,000 internal locations and ship over 7,000 lines. The project team realized that handling those volumes and corresponding levels of complexity required unique capabilities. Creating the state-of-the-art operation would also mean creating a new module to support wave planning.

“QAD Warehousing has afforded us additional functionality over our older third-party solutions and brings us a much more manageable upgrade strategy.”

Gaylord Seemann, Director FPG IT—Manufacturing Systems, Eaton Corporation

An elementary wave planning function had been customized into the old WMS system—Eaton’s business managers leveraged that experience along with their warehouse management expertise to actively participate in developing the new wave planning functionality in partnership with QAD.

The objective of wave planning is to organize orders—sales orders, customer schedules and distribution orders—by “wave,” a collection of orders that are grouped and handled together. Warehouse Manager Jaime Tanksley explains: “As opposed to standard replenishment that works with min/max level of inventory in a location, wave replenishment considers the quantity required for the wave and compares the required quantity with the quantity already in stock in the pick face locations. It will create replenishment tasks only for missing items needed to complete the wave.”

“Today, we have everything running efficiently and have already started to see the benefits of using this system. We increased shipments 33 percent in just a few months.”

Duane Paul, Plant Manager, Eaton Corporation

In a lean distribution environment, replenishment tasks are a disruption to continuous throughput and must be kept to a minimum. “QAD added a step before replenishment, to check whether some order lines can be fulfilled by full pallet quantities, and if it is the case, to create full-pallet picking tasks straight from the reserve to the consolidation area. This allows us to skip unnecessary replenishment movements,” says Tanksley. Duane Paul, plant manager at Eaton’s Cleveland, TN, facility says, “By allowing replenishment to the maximum capacity of our home locations, wave replenishment tasks are kept at a minimum. Checking for potential full-pallet picking before the replenishment takes place was really an improvement from our previous system.”

Tanksley adds, “Our business requires that we define carriers at each line of a sales order because some lines must be shipped using an express carrier and others can use standard ground transportation. The ability to select orders in a wave by carrier was a must-have functionality.”

The Results: Increased Productivity, Enhanced Workflow, Improved Customer Satisfaction

The Cleveland, TN operation went live on the enhanced QAD Warehousing solution in November of 2005. Even with the go-live of an entirely new system, Eaton managed to reach a 100 percent on-time delivery for their largest customer. That customer honored the Cleveland distribution center with their “Distributor of the Year” award for 2005.

“It took a few weeks to ensure a stable environment, but we have never been in a position where we could not satisfy our customers. Today, we have everything running efficiently and have already started to see the benefits of using this system,” says Paul. “We increased shipments 33 percent in just a few months.”

Because QAD Warehousing is fully integrated with QAD Enterprise Applications, eliminating the need for middleware and multiple interfaces, the Cleveland warehouse has both reduced its IT costs and improved the reliability of the entire system. “The transactional-level integration of QAD Warehousing with QAD Enterprise Applications gives us the increased reliability and throughput we need as opposed to the independent third-party solutions we’ve had to integrate in the past. There are no middleware issues that cause a WMS to get out of sync with the core manufacturing system. It’s all one system,” says Seeman.

QAD solutions provide a level of visibility that has significantly enhanced customer service and inventory tracking. Now, service personnel and customers can track order status in real time, and redundant inquiries have been eliminated. Employees can use the system to track inventory in detail, throughout the warehouse. The enhanced control and continuous flow through the warehouse supports Eaton’s lean initiatives and maximizes use of employee time and floor space in the plant.

Says Seeman, “We are now positioned to leverage the QAD Warehousing warehousing solution globally, without the typical local server and software investment previously needed to support a traditional WMS solution. Beyond that, QAD Warehousing has afforded us additional functionality over our older third-party solutions and brings us a much more manageable upgrade strategy.”

The Future: Continuous Improvement

Says Paul, “To be a successful business and serve our customers second to none we need to have very high standards. The QAD solutions are one piece of that puzzle. If we’re able to be more productive, if we’re able to take costs out of our business, if we’re able to deliver to our customers in the most competitive manner in the industry, it gives us the ability to grow our business and be successful.”

He adds, “If QAD has solutions in those areas and a forward look in those areas, and things that we should be looking at, we’re going keep our minds open and we’re always interested in knowing what’s out there: What we should be benchmarking to improve our business, and the tools that will become available to help drive our business to be more successful.”

Highlights

Company

Company Name	Eaton Corporation
Industry	Industrial
Products	Electrical systems and components for power quality, distribution and control; fluid power systems and services for industrial, mobile and aircraft equipment; intelligent truck drivetrain systems for safety and fuel economy; and automotive engine air management systems, powertrain solutions and specialty controls.

Solution

QAD Solutions	QAD Enterprise Applications QAD Warehousing
Hardware	HP Superdome/HP-UX
Language	English
Sites	QAD Enterprise Applications: 70-plus worldwide QAD Warehousing: one
Time to Benefit	Immediate

Results

- Increase average lines shipped per day 33%
- Lower inventory costs through improved accuracy and control
- Ability to select orders by carrier
- Fast response to emergency orders
- Easily balance workload in warehouse
- Much more efficient use of floor space
- Accurate, real-time data for sales and customer support
- Reduced IT costs: no need for local server and middleware to support WMS
- Improved employee safety
- Significantly reduced overtime
- Increased customer satisfaction
- Greater reliability and throughput
- Meet customer requirements for EDI and ASNs



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