

Ebara Pulls Ahead with Apriso

Better Visibility to Production Processes supports Lean Program

Ebara Corporation, headquartered in Ohta-ku, Tokyo, is a leading manufacturer that is comprised of three core companies: Fluid Machinery & Systems, Environmental Engineering and Precision Machinery. Having celebrated its centennial in 2012, Ebara is well known for its world class technology in the field of pumps and other fluid machinery and their global share in cutting-edge fields like semiconductor manufacturing equipment.

Ebara established a Productivity Innovation Activities Plan to build an industry-leading manufacturing system to improve efficiency by optimizing their manufacturing processes. The goal of this plan was to improve work efficiency, maintain and improve quality of all business processes to deliver the highest quality products to their customers – and to do so faster than before. To implement this plan, the Precision Machinery Company planned to use “Pull” production processes, as used in the Toyota Production System (TPS). In November 2012, Ebara chose a DELMIA Apriso Manufacturing Execution System (MES) to improve inventory accuracy and visibility. The first stage went live in February 2013.

Background of Issues to Overcome

This project began with the Precision Machinery Company focusing on dry pump products, a core product of the company. These products are primarily made at the Fujisawa Plant in Japan. The project plan was to employ Pull production processes to reduce lead times and inventory while improving efficiency. The goal was to unify a sequence of disparate inventory, production and delivery processes to improve visibility and control of production. This led to a decision to introduce MES as a way to manage all production processes.

The Precision Machinery Company already had an ERP system, which was linked with made-to-order planning and PLM systems to create MRP (Material Requirements Planning). However, there were slight discrepancies between book inventory and spot stock as they appeared in the inventory management of procured parts in the automated warehouse system. And, since acceptance and delivery were processed using a paper-based list, it was difficult to establish inventory and work-in-process status in real-time. In addition, the customization work of requirement changes in the ERP system was complex, which increased the reliance on IT vendors leading to delays and higher costs.

System Requirements Leading to Apriso Selection

Six MES needs were identified to solve Ebara’s current issues and achieve their goals:

- 1) A system that supported processes complying with a Pull type production process
- 2) A system with global expandability that envisions future business deployment
- 3) A system flexible enough to integrate customized requirements, as needed
- 4) A system with wide functionality that enables full control of any production process
- 5) A user-friendly, cost-effective system that could be deployed in-house
- 6) A package that includes a system with high adoption rate and other conditions

After examining several vendors based on these conditions, Ebara selected Apriso as their Manufacturing Execution System in November 2012.



Benefits Achieved

- Supports wide range of Pull type production processes from Production, Supplier, Inbound Order, Inventory and Outbound
- Brings real-time visibility to inventory management status, linking to ERP
- Adds mobility access and visibility with Apriso access from a production site using handheld devices
- Complements and supports company’s current paperless initiatives
- Shortens deployment term with rich, standard Apriso functionality and Apriso Process Builder, to improve and manage business processes with minimal resources

Adding Visibility to Inventory Management

Four automatic warehouses at the Fujisawa plant manage about 800 types of dry pump parts. Apriso was implemented here as a new inventory management system, which was completed by mid-February 2013 just three months after its introduction.

The goal was to have Apriso manage the production flow from inbound instructions of purchase items to outbound performance and on to inventory adjustment performance as a first step to improving inventory accuracy and visibility. Entering store movement information, picking data, and inventory movement processing can now all be accessed from a single production site using a handheld device, making it possible to link collected information in real-time to Ebara's existing ERP system. Linking the new MES to ERP made the inventory of the entire company visible.

Success in Short-term Installation and Deployment

The reason why Ebara managed to achieve their objectives in just three months was because the business processes up to store inventory management had been planned in detail, which made it possible to smoothly link the production site to the company's IT systems. In addition, Ebara found many benefits with the rich standard functions of Apriso Process Builder, which was easy and flexible to adapt to changing requirements. Ebara expects to use this capability with future expansion plans to reduce the time required for installation.

In September this year, half a year since their Apriso system came on stream, inventory management of Gas Abatement Systems, a core product of the company, was switched to their new store inventory management system. It took only one person to deploy 600 items using only in-house resources. This promises further improvements in performance, for example, of system operating costs and processing speeds, the project's initial issues.

Effect of Implementation

Although the automatic warehousing system for dry pump products is still in use about one year after system began, its utilization rate is substantially reduced. The switch to store inventory management is going smoothly, and the issue of wasted inventory is gradually being resolved. The ability of Apriso to accurately assess the most recent inventory status makes inventory data visible, one of issues of the original system.

One of the first stage goals of the project was to improve inventory accuracy to reduce inventory levels. When introduced, it became quickly apparent that Apriso was capable of achieving that objective. The inventory check for the second half of the year planned for Spring 2014 is expected to show further improvements. Ebara also introduced order Kanban management, with the second step of the project starting in September 2013. Ebara is now looking at deployment to other companies it owns, as well as domestic and overseas plants in future.

About Dassault Systèmes & DELMIA

Dassault Systèmes, the 3DEXPERIENCE Company, serves 190,000 customers across 140 countries, providing virtual universes for sustainable innovation. Dassault Systèmes' DELMIA brand offers products that connect the virtual and real worlds. As part of DELMIA, the Apriso product portfolio helps manufacturers transform their global operations to achieve and sustain operational excellence. Learn more at apriso.com.

"The user friendliness of Apriso makes it possible for one person to complete store deployment and inventory management of products within quite a short time. Apriso substantially reduces operations load, one of the issues of our previous ERP system, so we are expecting further cost efficiency improvements."

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