

ORGANIZATION:

A world-leading food manufacturer and distributor with multinational warehouses located in California and Asia Pacific.

APPLICATION:

Implementation of SAPConsole RF transactions in conjunction with SAP R/3 Version 4.6c enterprise resource planning (ERP) software. Implementation of WM (warehouse management) combined with storage unit management for all pallet movements.

ENVIRONMENT:

The previous paper-based system required forklift operators to spend a considerable amount of time filling out paper forms and searching for items in the warehouse. As the company made plans to go live with SAP in their United States facility, they looked for a partner to develop a RF system that would automate the warehouse transactions.

KEY BENEFITS:

- Eliminated paperwork
- Provided large productivity gains - Doubled throughput
- Increased the accuracy of shipments
- Improved customer service

Warehouse Doubles Throughput By Implementing RF Enabled SAPConsole Transactions and Storage Unit Management

Overview of Organization

Implementing SAPConsole radio frequency (RF) transactions in conjunction with SAP R/3 Version 4.6c enterprise resource planning (ERP) software has helped a world-leading food manufacturer double the throughput of its California warehouse without increasing staff. The previous paper-based system required forklift operators to spend a considerable amount of time filling out paper forms and searching for items in the warehouse. As the company made plans to go live with SAP in their United States facility, they contracted PEAK Technologies, a SAP systems integrator, to develop a RF system that would automate the warehouse transactions. After review of the physical movement of the product and the company's current SAP configuration of IM (inventory management), PEAK Technologies recommended implementation of WM (warehouse management) combined with storage unit management for all pallet movements that would allow efficient tracking of all material at the bin level. "With the RF system, our people simply scan the pallet identification number and the rack location for extra validation and the information is automatically updated in the SAP database," said the company's assistant vice president. "The RF system has eliminated the need for our workers to deal with paperwork, providing large productivity gains, and has also increased the accuracy of shipments, thereby greatly improving customer service."

Challenge/Opportunity

When the company originally opened its California warehouse, it used a legacy ERP, and a conventional single pallet racking system. As items were received, put away, picked or shipped, employees filled out paper forms that were keyed in after the fact by data entry personnel. Productivity was limited because many employees had to spend a considerable proportion of their time filling out the paper forms. The legacy system did not track the bin location of inventory within the warehouse so workers sometimes spent additional time looking for items. It was easy to pull the wrong item for an order or make errors that might not be detected until the customer reported it. It took several days to enter trans-



actions into the system, so reports generated by management were outdated even as they came out of the printer. As part of an



effort to improve these manual processes at all of their worldwide facilities, the company implemented the Inventory Management (IM), Production Planning (PP) and Sales and Distribution (SD) modules of SAP in their international warehouse while still using a paper-based data entry process. The company gained some improvements but felt that the paper-based data entry system limited the gains that could be achieved with SAP. Based on the recommendations from PEAK Technologies, the company decided to implement the RF system and the WM module in the California distribution facility on the same day that the warehouse went live with SAP.

The California warehouse faced different challenges than those faced by the international facility. Because of the California facility's sales volume and size, the company decided to install a new double deep pallet racking system that would maximize storage capacity. The inability to physically view the pallet stored in the back of this racking system made it essential to begin tracking items and pallets at the bin locations in order to avoid greatly increasing the amount of time workers had to look for items to pick. This decision created a critical need for a partner that could assist in the process of designing and installing the RF infrastructure, developing the RF transactions, and providing training and support for the project. The company selected PEAK Technologies because of PEAK's broad range of experience in helping major distribution centers and manufacturing centers install RF systems in conjunction with SAP's IM, WM, SD

Warehouse Doubles Throughput By Implementing RF Enabled SAPConsole Transactions and Storage Unit Management

and PP modules. It was also critical for them to partner with an integrator that could handle the entire project on a single source basis, and global scope to support a future international RF implementation.

Application/Solution

PEAK designed an 802.11b RF infrastructure using Symbol PDT6800 handheld wireless computers that combine mobile computing, bar code data capture, and RF communications in a lightweight device. PEAK developed RF transactions for receiving, putaway, picking and shipping, taking advantage of the built-in functionality within the SAPConsole development environment whenever possible. To ensure efficiency in all of the RF transactions, PEAK Technologies also assisted in the project of bar code labeling the entire pallet and forward pick locations.

The process jointly defined by the company and PEAK begins when a truck pulls up to the receiving dock. The company's United States manufacturing plant applies bar-coded labels to each package so they can be scanned upon receipt. The international factory does not yet generate bar-coded labels so the receiving transaction was designed to allow the user to scroll through the material information that was expected and then to select the product that has arrived, helping to reduce the product information that has to be keyed in by hand. In either case, the material is immediately entered into inventory as soon as the transaction is completed. This has greatly improved inventory visibility and availability by days. As the items are scanned and received, SAP automatically runs through a put-away strategy algorithm and generates a transfer order that directs the put-away fork truck exactly where each pallet should be taken and stored. Since the majority of product arrives and moves through the warehouse in pallet quantities, storage unit management was implemented to track each individual pallet with a unique number (sometimes called license plate tracking). The put-away driver scans the SU number on the pallet and the put-away location is immediately displayed on their Symbol 6800 handheld wireless computer. The driver picks up the pallet and drives directly to the storage bin where they scan the barcoded label on the bin, which immediately updates SAP with the location of the inventory and moves the inventory into available to sale status. The entire receipt and put-away process, including updating of the ERP system, now takes just minutes compared to days in the past.

Picking orders are now auto generated by SAP based on picking quantities and first in/first out algorithm. The picking transfer order splits the picks between full pallet quantities and partial quantities that will be picked from the case pick zone. The picking information is displayed to the picker on the Symbol handheld wireless computers and requires the user to first scan the bin barcode to validate they are at the right position, then to scan the SU (pallet id) numbers they are picking. The transaction validates the user is picking an SU that contains the batch selected by the system to pick and calculates the quantity the user has picked and alerts them when they have picked the full quantity. In the case pick zone the user has an additional required scan of the batch number to once again validate the user is picking the system selected batch. Every prompt is validating the user is picking the right product in the right amount from the right location. If an error is made, the operator immediately receives a message explaining what is wrong and is prompted to correct the erroneous data. Providing this level of validation at picking is eliminating errors in real-time and preventing down line issues.

After the product is picked the worker drops the material in the staging area where they are packed for shipment. A second level of validation has been added at the packing/loading lanes. All material is once again scanned into the delivery to ensure the product belongs on this particular outbound truck.

All of the paperwork required for the order is then printed in the correct sequence in a printer located in the shipping area at the same time the order is being completed. The barcodes and two bit images are generated by a laser printer, eliminating the cost of purchasing and stocking special forms.

All of the transactions are batch managed so if the company ever had to recall a product it could easily determine where that specific batch was stored in the warehouse and exactly which customers received that particular batch. Every transaction updates the SAP database in real time, providing enterprise-wide verification and visibility. The completeness of the transactions means that the company is able to run the warehouse on a virtually paper-free basis, providing substantial timesavings.

Benefits/Results

"PEAK managed every aspect of the implementation process to ensure its success,"

"Over a relatively short period, we reached the point where we were able to double the throughput in our California distribution center without adding any staff."

Assistant Vice President

the assistant vice president said. "Well in advance of our SAP go live date, they had installed and tested the RF infrastructure, developed the transactions, and trained our people in using the transactions and hardware. All this preparation meant that the three people they sent to our distribution center on the go live day didn't have an awful lot to do. Everything went very smoothly and we could see the improvements in efficiency from the very first day. Over a relatively short period, we reached the point where we were able to double the throughput in our California distribution center without adding any staff. These gains were attributable primarily to the improvements in productivity that come from eliminating the responsibilities for filling out forms and for remembering where items are located from our workers. It now takes workers approximately half as long to either put away or pick an item as it did in the past. We have also seen dramatic improvements in accuracy. In fact, it's very rare that we ever make a mistake any more because every order is verified both at the time of picking and shipment by the RF system. The implementation has been so successful that we are working with PEAK to install the same system in our international distribution center," the assistant vice president concluded.



PEAK Technologies, Inc.
10330 Old Columbia Road
Columbia, Maryland 21046 USA
Tel: 888-ASK-PEAK
Fax: 410-309-6219
E-mail: info@peaktech.com
www.peaktech.com

© Copyright 2007 PEAK Technologies, Inc.
PeakCS1209

Images used in this article portray typical applications and may not necessarily represent the specific customer site referenced.