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Wireless Data Collection Streamlines Warehouse Inventory Counts

McIlhenny Company, the producer of TABASCO pepper sauces, improved its inventory efficiency 67% with a real-time bar coding solution.

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It's amazing how many companies still rely on manual processes such as pen and paper to collect data in their warehouses and DCs (distribution centers). If you're one of these companies, you're not alone, but that doesn't mean you shouldn't consider joining the ranks of those using technology to improve their data collection processes. Perhaps you've been reluctant to incorporate data collection technology such as bar code scanning or RFID because you're worried about interrupting your warehouse production, or maybe the cost seems prohibitive to you. You think your warehouse, with 10 to 15 people on a shift, doesn't merit an automated data collection method. That assumption sells the technology short, however. McIlhenny Company, producer of TABASCO brand pepper sauces, is a small company with a huge global reach. The company, which has been family owned and operated since the late 1800s, employs approximately 200 people — yet it produces more than 25,000 cases per day and ships to more than 160 countries. Even with that volume of production, the company implemented a bar code based scanning solution to track products received and count inventory without interrupting production, greatly reducing its inventory count time.

MANUAL WAREHOUSE PROCESSES DELAY VITAL DATA

Until recently, the company was heavily reliant on pen-and-paper methods to track product movement in its production plant and catalog warehouse. McIlhenny used an enterprise system — Oracle Process Manufacturing (OPM) — to manage its production lines and store inventory data, but information on inventory moves and received goods had to be manually keyed into the system.

Products come and go with rapid frequency in McIlhenny's warehouses. In the production area, raw materials for the TABASCO sauces arrived daily and were documented on paper. The data was entered into OPM at the end of a shift. The inventory storage area used the same method to document the receipt of finished products (i.e. bottles of TABASCO sauce) from production and the receipt of packaging materials (e.g. boxes, labels). Again, this information was not put into the OPM system until the end of a shift. Sometimes this lack of visibility could delay production. "Because we ship internationally and create labels in the country's native language, we custom-print the labels," says Lisa Bell, VP of information systems at McIlhenny Company. "The

Wireless Technology Advancements Enable Integrated RFID, Wi-Fi

When McIlhenny Company automated parts of its supply chain, it reduced its inventory count time 67% — a substantial time savings for any company. Using wireless technologies, like bar coding, obviously streamlines business processes, and most companies find that their employees can do their jobs 20% to 50% faster.

Other methods of wireless data capture technology can offer even more efficiencies, such as voice-directed picking and RFID. "RFID and voice are what companies are interested in," says Doug Brown, director of product management for LXE, Inc. "Voice enables hands-free work and is invaluable for picking applications. RFID doesn't require workers to continually stop and scan a bar code. By carrying an RFID reader, the worker can go about his natural movements and collect data verifying his work."

These data collection methods can often be used together — voice for picking to fill orders, RFID for shipping and large inventory moves. But voice runs over a Wi-Fi (802.11) network; RFID runs over an analog RF network. You can run these networks parallel to one another, but that can be an IT nightmare. Symbol Technologies recently announced a wireless architecture called Wireless Next Generation (Wi-NG) that will enable both types of wireless to be managed and operated as a single network. "Wi-NG can enable RFID, 802.11, even Wi-MAX [Worldwide Interoperability for Microwave Access]," says Chris McGugan, senior director of product management,

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labels are printed by a supplier as needed and then brought to production and applied to a certain run of bottles. If production needs labels to run an order, it won't know the labels are available until the next day."

MANUAL INVENTORY COUNTS PARALYZE PRODUCTION

McIlhenny Company also used paper-based methods to take inventory counts in its catalog warehouse. These inventory counts took place once a quarter and lasted three days. Six to eight people would be assigned to certain areas of the warehouse, where they'd count the items stored there (e.g. regular and oversized bottles of TABASCO sauce, novelty items such as T-shirts and aprons). The workers who performed the counts would get together, combine their individual counts, and tabulate a total inventory report. In addition to these workers dedicating three days of their time to this, McIlhenny shut down its shipping operations to avoid confusion. "This was one of management's key areas of concern," says Bell. "We want to be shipping every day. There was also the issue of accuracy — we definitely had errors with this manual process."

To replace these manual processes, McIlhenny investigated bar code-based data collection technology. With the help of systems integrator BullsEye Computing Solutions, McIlhenny implemented a wireless solution composed of LXE MX6 handheld computers, EZ RF, that integrates all of these components with McIlhenny's OPM system. One of the key requirements of the handheld computers was that they have a big screen and a long-range scanner. "We needed the large screen because our employees were so used to working with paper. We wanted the adjustment to be as easy as possible," says Bell. "We needed the long-range scanner because our products are stacked high and we don't want to get on a lift to take inventory. We wanted employees to be able to scan all of the bar codes in the inventory area from the ground."

CONSIDER REAL-TIME VS. BATCH WIRELESS

McIlhenny Company installed a wireless network in its warehouse so it could transmit data from the bar code scans back to OPM in real time. Since visibility of products received was essential to shipping operations, real-time wireless was an obvious choice. For some companies, though, batch data transmission might work (e.g. the handheld computer is docked in a cradle at the end of each shift). Batch is less expensive, as it does not involve setting up and maintaining a wireless network, but it doesn't improve data visibility over manual keying-in methods — it only improves accuracy.

To avoid disruptions to its production and shipping, McIlhenny deployed the solution in two phases over approximately a year. Before beginning either of the deployment phases, McIlhenny first installed the wireless network and software to link the network with OPM in March 2005. Then the company deployed the handhelds in its catalog warehouse and went live with phase one in June 2005. McIlhenny began phase two in its production and shipping areas in November 2005.

McIlhenny uses the solution to conduct inventory counts, verify the receipt of goods into its inventory storage and catalog warehouses, and scan shipped items. The information is automatically sent to the OPM system, thereby providing instant visibility of product movement. Since deploying the solution, the company improved its inventory count time by 67%, shaving it from three days to one. This time savings enabled employees to do work in the warehouse and plant that they weren't able to do before, and it didn't require shutting down shipping.

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wireless infrastructure division at Symbol. "You can deploy any type of wireless technology and manage it, integrate it, and control it." As of now, the Wi-NG technology must be deployed with Symbol's WS5100 wireless switch. It is not compatible with other vendors' wireless networks, but McGugan anticipates that to change in 12 to 18 months as protocols develop.

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