Phasing In RFID

Dairy Farmers of America met Wal-Mart's tagging mandate, and the organization is now poised to reap internal benefits.

By Jill Gambon

Dairy Farmers of America (DFA) had little choice when Wal-Mart handed down its RFID mandate in early 2005. The $9 billion cooperative was among the second wave of Wal-Mart suppliers to receive the edict, and had to begin tagging cases of cheese by January 2006 to meet the retailer's deadline.

Headquartered in Kansas City, Mo., DFA owns and operates 33 processing plants around the country. These plants turn out not only milk and cheese but also coffee creamers, sauces and a variety of other products, under such brand names as Borden, Keller's Butter, SportShake and VitalCal. The cooperative now has 20,600 members and 4,000 employees. In 2005, DFA says it delivered 59.7 billion pounds of milk—34 percent of the nation's milk supply—to the marketplace.

DFA first introduced its automated RFID tagging system in December 2005, with a single production line at its Plymouth, Wis., processing plant. Since then, the firm has expanded RFID tagging to seven production lines at two plants, including a mobile unit that can be moved to tag cases as needed. About 12 different cheese products are being tagged in all. Over time, DFA expects to introduce the use of RFID to other processing plants, and to additional product lines as well.

The dairy cooperative is now exploring ways to use the data collected via RFID to improve operations and boost profits. "New product introductions, promotion management and stock-outs" are some of the areas DFA will look to improve, says Toby Rush, president and CEO of Rush Tracking Systems. Specializing in RFID, the Kansas City, Mo., systems integrator worked with DFA in putting together its RFID implementation.
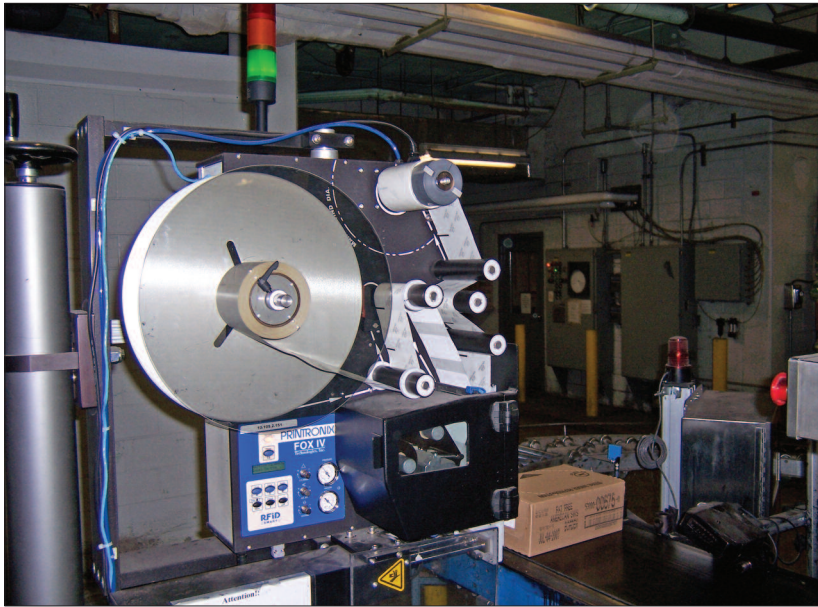
Getting to the point where it can reap benefits from its RFID investment is just the latest step in a journey that began with Wal-Mart's mandate. To comply, DFA assembled a staff from different parts of the organization, including corporate IT, sales and marketing, and supply chain. The group was charged with formulating the requirements for an RFID system, as well as reviewing vendor proposals.

DFA established some key specifications for its RFID deployment: The system had to be administered and supported from its data center, located in Springfield, Mo.

Printronix RFID label applicator

Printronix RFID label applicators, interrogators from Motorola (formerly Symbol Technologies) and Alien Technology Squiggle EPC Gen 2 UHF tags. A Wide Area Network (WAN) connects the system to DFA's servers and support staff at its Springfield data center, integrating it with the cooperative's databases, storage area network and security framework.

At the processing plant, packed cases of cheese travel the production line via a conveyer belt. A line operator logs onto a PC and inputs the relevant product information using Internet Explorer as an interface. OATSystems' automated tagging system applies the tags, which include EPC information, to the cases. The OAT server, located at the data center, manages all EPC number allocations. After the tags are applied, the cases continue on the production line. A Symbol interrogator reads the tags, then sends the tag information to the OAT server. The server confirms the product information, and, if the read is accurate, the case continues down the line. If no read has occurred, or if the tag is invalid, the case goes back down the assembly line for another try.

This would allow the central IT staff to handle any changes or updates, and to troubleshoot any problems remotely. In addition, disruption of operations at DFA's processing plants had to be kept to a minimum so production schedules would not be interrupted. The cooperative wanted minimal impact on its operating costs, and did not want to hire more employees to meet the compliance mandate.

DFA staff looked at proposals from several systems integrators and RFID vendors before selecting Rush Tracking as its systems integrator, and choosing software from OATSystems. The OAT Foundation Suite, a software package that incorporates workflow, data management and analytic features for RFID applications, seemed robust enough to handle the cooperative's production demands. It also promised enterprise-level scalability, with backup capabilities in case the system were to go down. Bob Tiede, the cooperative's IS director, says, "We felt it had the capacity we needed, with failover and redundancy." Another factor in OATSystems' favor was its compatibility with IBM's WebSphere platform, which the cooperative had already deployed in other areas.

Rush Tracking, which had worked with OATSystems on other projects, provided implementation, integration and consulting services. The Plymouth plant was chosen for the first RFID deployment, Rush explains, because much of the cheese produced there is sold through Wal-Mart. "It made the most sense." The system includes

The system tags 16 cases per minute, but capacity can be increased to 20 to 25 cases per minute when necessary. At present, the Plymouth plant tags only cases because of how pallets are broken down and reconfigured. Because of the cheese content, it is very difficult to get reads of all the products on the reconfigured pallets, but the Zumbrota, Minn., processing plant tags both cases and pallets. There, DFA reports, pallet configuration is automated so the pallets are not broken down and reconfigured. This, it adds, makes pallet tagging worthwhile. The rollout of the system went "pretty smoothly," says Josh Drake, RFID engineer for the cooperative. "There were a few hiccups, but no unexpected downtime. The biggest surprise was how stable the system was." Training was also straightforward. Line operators at the processing plants received on-site training, while IT staffers spent a day and a half at Rush's headquarters in Kansas City, where they learned the new system. DFA converted to Gen

2 tags last April, and the result has been improved read rates and an error rate of one percent or less.

DFA won't disclose how much it has spent on the RFID project to date, though it does say it is assessing the return on its investment. The cooperative is now tackling the challenge of leveraging the data made available through RFID to improve operations, reduce costs and boost overall performance.

According to Greg Aimi, research director with AMR Research, an advisory firm focused on supply-chain and enterprise applications, many companies have yet to fully exploit the data being gathered through RFID. For many companies, Aimi says, there are two chief stumbling blocks: Their IT systems are not yet designed to integrate the data, and their current business practices do not accommodate use of the information. "The data is just a foundation," he says, to building improvements into supply-chain management.

Still, there are signs things are starting to change among businesses that have deployed RFID, says Rebecca Wettemann, vice president of research at Nucleus Research, an IT research and advisory firm. Over the past 12 to 18 months, with tag prices dropping and businesses becoming more experienced using the technology, opportunities are opening up for RFID to make a more significant impact on operations. "Moving forward," she predicts, "people will get more creative" with ways to use the data gathered through RFID. Those companies best positioned to leverage their RFID investments, she adds, are those that took a "phased approach" to the technology, deploying it on a small scale and learning how best to use it.

Phasing in the use of RFID is precisely the route DFA has taken. It first put an automated system in place for tagging, Rush notes, and is now considering how best to use the information the system makes available to improve to supply-chain operations.

DFA expects to make use of OATSystems' OATAxiom software, which has data-analysis and data-management features. It includes pre-built reports for tracking inventory by product and location, as well as trend analysis capabilities to look at product velocity and inventory changes. The cooperative licensed the software, Tiede states, but has not yet begun using it. According to Rush, once the software is in use, it will help the cooperative bet-

Toby Rush

ter monitor how new product introductions fare. In addition, the agency will be able to use the data to track product promotions more closely and manage inventory better. "They are looking at how to improve store-level execution," says Rush, "so products are on the shelves when they should be."

DFA's investment in RFID may become increasingly strategic as the cooperative places more emphasis on keeping costs down and improving its financial performance. In last year's annual report, DFA executives said the cooperative was "dedicated to implementing increased financial discipline" across its business units to streamline operations, improve cost control and sharpen its focus on operating results. Monitoring and improving new product introductions, better managing promotions and preventing stock-outs, Aimi explains, are key strategies for packaged-goods companies to improve their bottom lines.

With Wal-Mart ramping up its commitment to RFID technology, more suppliers will soon be tagging an increasing number of products. For those businesses facing their first RFID deployment, Drake offers the following advice: Budget adequate time and resources for testing any new systems. In DFA's case, the firm lacked the hardware at its data center to test the system on site, so all testing was done at Rush Tracking's facilities.

Tiede advises a thorough evaluation and understanding of the software and architecture required to support—and ultimately leverage—the RFID system. These steps should help build the solid underpinnings for an RFID investment able to deliver long-term value.

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