

Integrated Solutions

RFID: The Business Case

There's a shortage of business cases for RFID (radio frequency identification) in the supply chain. A search project involving three produce suppliers and Publix Super Markets aims to solve this problem.

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RFID Labels: Pretty In Pink?

In most cases, the 4-inch-by-6-inch RFID (radio frequency identification) labels applied to cartons and pallets aren't any different in appearance from standard shipping labels. It's only by looking at the back of the label that a user can tell if it is indeed RFID-enabled. As tagged products move throughout a distribution center (DC), employees don't usually have any visual clues as to whether they're looking at traditional shipping labels or those containing RFID tags.

To avoid any confusion in this area, the V2 (Visibility Validated) project employed visually distinctive RFID labels. In fact, the labels were bright pink. The labels were supplied by Mid South Graphics, while printers from Printronix and Zebra Technologies handled printing and encoding. The pink tags were then applied to specified shipments at the warehouses of each of three produce suppliers shipping to Publix Super Markets – all participants in the V2 project.

During the project, the pink labels served as a not-so-subtle indication that particular products were part of the research project. Subsequently, during the receiving process, these specially tagged shipments were guided to specific dock doors that were outfitted with RFID portals.

At a warehouse facility in northern California, Tanimura & Antle (T&A) employees busily package and crate cauliflower from that day's harvest. But, a portion of those crates is handled differently. They're bound for the Lakeland, FL, distribution center (DC) of Publix Super Markets, which means these crates – and the pallets into which they will be assembled – will receive hand-applied RFID labels before they're loaded into the trailer of a long-haul carrier.

What could easily be confused as just another supplier meeting another retailer RFID mandate, however, is actually different. Very different. T&A is one of three produce suppliers (Del Monte Fresh Produce and A. Duda & Sons are the other two) working with Publix on a research project that aims to establish a business case for widespread adoption of RFID technology. In a room filled with RFID supporters, the business case for the technology has long been the elephant in the corner. Under the guidance of the University of Florida's Research Center for Food Distribution and Retailing (CFDR) and its technology partner, RFID integrator Franwell, Publix and its suppliers have addressed what many consider to be RFID's biggest stumbling block.

With almost 900 retail locations spread across five southeastern states and \$20.6 billion in sales in 2005, Publix certainly could have launched an RFID mandate initiative with its suppliers. But, the company is adamant that it currently has no mandate plans. Instead, it's participating in an RFID research project dubbed V2 (Visibility Validated), which aims to prove that RFID increases supply chain visibility. The concept for the research project was a collaborative effort between the CFDR, Franwell, and Publix. Each wanted to extend research beyond the study of RFID read rates and tag placement and prove the value of shared real-time visibility across the supply chain. "If there's a time in the future when Publix wants its suppliers to use RFID, I'm sure it would like to know there are benefits for all parties – a true partnership," says Terri Crawford, vice president and COO at Franwell, Inc. "This research project is the first step in making the business case for RFID. And if there's a business case for the technology, then naturally RFID will make sense to retailers and suppliers." (During the writing of this article, Terri Crawford left Publix Super Markets to accept her current position at Franwell. Prior to joining Franwell, Crawford worked in the Publix IT department for 23 years. Most recently at Publix, she was responsible for strategic IT planning for Publix' distribution business, including budgeting, planning, implementing, and supporting the technology and automation at 24 warehouses in eight cities.)

The first stage of the V2 project wrapped up at the end of May, and the results bode well for a future where RFID deployments are based on measurable benefits. For the first time, a retailer and its suppliers exchanged data in the secure environment of the EPC Network. Ultimately, this network will serve as a clearinghouse for all RFID data gathered and exchanged between partners. This alone would have deemed the research successful. However, Publix and its suppliers realized something more important: There is value in the data collected from tagged cases and pallets by RFID readers. And, its impact will significantly change the supply chain.

RFID DATA INCREASES SUPPLY CHAIN VISIBILITY

RFID eliminates manual bar code scanning and greatly mitigates line-of-sight reading issues. But, these are internal business process improvements. The more global goal is real-time, shared access to RFID data between business partners. In this scenario, individual RFID tag reads at key points in the supply chain – or, observation events – are posted to the EPC Network where the information can be viewed. An RFID-enabled dock door portal reading an RFID-tagged pallet as it is loaded on a truck, for instance, is a

typical observation event, and the data would be posted and accessed via the EPC Network.

In the V2 project, three Publix suppliers agreed to track three distinct observation events as specified produce types moved through their distribution facilities. In all three cases, an observation event was posted for creation (RFID tags created and applied to a case), staging (cases are palletized and RFID tag applied to a pallet), and shipping (RFID-tagged products are loaded on a truck). The Publix DC in Lakeland had receiving (tagged product enters the DC through a dock door) as its sole observation event. To generate and capture this RFID data, a handful of vendors collaborated on the V2 project. The project used a combination of RFID readers and tags from Symbol Technologies and Alien Technology. RFID-enabled printers from Printronix and Zebra Technologies encoded bright pink labels supplied by Mid South Graphics. (Pink labels were employed as a visual reminder to warehouse employees that particular cases were tagged with RFID labels.) And, Franwell's mobile RFID cart solutions were deployed at two supplier facilities.

Access to these observation events is the foundation of a business case for RFID. If a shipment of cauliflower from T&A is less than was ordered, Publix may only realize this when the order arrives in Lakeland. The retailer may then decide to place another order with T&A or use a supplemental supplier to fulfill the balance of the order. Additionally, the produce that did arrive at the DC will need to be reallocated to stores based on what was actually received. All of this happens "on the fly," even though the shipment in question left T&A's facility five days prior. "RFID is allowing us to see in real time that the order was shipped and what was in the order. Buyers can make decisions based on that data," relays Crawford. "The data from the observations are basically a virtual ASN [advanced shipping notice]."

Suppliers also increase their visibility by immediately knowing when their shipment enters the Publix DC. In the future, this observation event will be critical. Supplier shipping observations can be compared to Publix receiving observations, and any order discrepancies can be discovered. As suppliers and retailers trust the observation data even more implicitly, instant reconciliation becomes a potential reality. RFID observations at the DC dock door can eliminate any questions as to when a product was received or how long it took to unload. "These are all aspects of RFID that were beyond the initial scope of the V2 project," explains Crawford. "But, we've laid the groundwork to prove these business cases in our next research efforts."

DECISIONS BASED ON SECURE RFID DATA

Posting observation events on the EPC Network seems like a good idea. However, this means that partners will have access to data – and into the inner-workings of a partner's company – which previously did not exist. This makes some companies, well, uncomfortable. The produce suppliers in the V2 project are posting three observation events. What if there were 20 events? Should a retailer have access to all of this data, and is all of this data even useful to the retail partner? Quite simply, no.

VeriSign administers the EPC Network infrastructure, and the services vendor has a model that accounts for security of data. This means Publix and its suppliers can only view data that's pertinent and agreed upon by the parties. Data security is the driving force behind VeriSign's model, but data overload has to be a penultimate concern. Frankly, partners don't want to see every observation event that is posted to the EPC Network. In the V2 project, for instance, Publix had access to only supplier ship observations, and suppliers could view only Publix receiving data. (The CFDR and Franwell had access to all of the observation data.) As RFID becomes more pervasive in the supply chain, data discrimination will be critical. "With new technology, it's natural for parties to think that more information is better. They want all of the data, but it's a fine line," explains Crawford. "Data can quickly become like spam, where you have trouble distinguishing real information from useless clutter." In a further effort to display data most effectively, the V2 project also utilized a portal interface provided by Franwell. The portal is configured to the needs of each participant, allowing Publix and its suppliers easy access to only pertinent and agreed-upon data.

RFID HEADS TO THE STORE LEVEL

From this point, a new direction will be plotted for the next phase of the V2 project, and other suppliers and retailers may be invited to join. Sharing data via the EPC Network increased visibility among all partners and, in turn, proved the value of the network itself. As mentioned, access to all partner data is not warranted. But, there may be some value in increasing the amount of shared data – especially in the fresh foods arena. A staging event alone, for instance, has little meaning to a retailer. When it is linked to a shipping event, however, then a retailer can see how long a produce shipment sat idle between staging and shipping. A supplier may also see value in knowing how long it took a DC to receive and ultimately put away a shipment.

In addition to posting more observation events and an increased sharing of data, expansion of the V2 project may also include RFID readers at a retail location. Again, shipping and receiving events would be posted to the EPC Network. "Because this data is gathered at the store level, it takes on new meaning to suppliers and retailers," says Crawford. "All parties will be able to make decisions based on data that simply isn't available to them right now."

Making the business case for RFID technology is still not a straightforward discussion. But, the V2 project has raised the level of discourse from whether RFID works to specific benefits to be had by all trading partners. That's a significant step forward for a technology that has produced a lot of hype but few concrete returns.

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