

## **The retailer is testing the technology's ability to cost-effectively track produce shipments and monitor temperatures.**

By Dave Friedlos

Oct. 21, 2008—[Woolworths Ltd.](#), which operates Australia's largest supermarket chain, has completed two trials of radio frequency identification. One trial employs the technology to track and trace fresh produce as it moves across the supply chain, while the other involves monitoring temperature levels throughout segments of the supply chain.

The retail giant tested UHF EPC Gen 2 tags at selected supermarkets and supplier distribution centers (DCs) to determine the economic viability of a wider rollout. Wayne Ellison, Woolworths' RFID project manager, says the retailer intends to extend its temperature-sensing pilot but has abandoned plans to roll out RFID to track and trace produce crates for now, because it still sees the technology as being too expensive.

Woolworths, which maintains more than 700 Woolworths and Safeway supermarkets, invited a range of technology vendors—including RFID tag suppliers, integration specialists and telecommunication companies—to demonstrate the benefits of RFID. "We held the proof-of-concept stage to see if RFID could provide the benefits we need in the produce department," Ellison says, "using both passive dual-frequency tags and UHF EPC Gen 2 tags."

Woolworths chose passive tags for track and trace because of the high volume of crates involved, as well as the prohibitive cost of utilizing active tags for such a large-scale deployment. The benefits Woolworths sought included improvements in efficiency for tracking fresh produce, which is currently a manual, paper-based process. The retailer, according to Ellison, wanted an electronic means of tracking fresh food, in order to reduce the number of inaccuracies in accounts, improve documentation and reduce paper use.

"Electronic tracking also has the potential to reduce stock wastage by delivering better visibility and control over our stock," Ellison says. Knowing exactly where a crate is located at any particular time can be vital in the fresh-produce industry, he explains, as some foods do not last as long as others, and accurate stock control enables companies to ship fruit before it can spoil.

The retailer set up temporary portals housing RFID antennas and interrogators throughout the distribution chain. Technology vendors were then invited to track and trace fresh produce from the DCs to warehouses and the supermarket. "We created a number of different scenarios to test the effectiveness of RFID in a real-life environment," Ellison says, "such as exposing tags to high water levels, high citrus levels and metal."

For temperature-sensing trials, Woolworths employed UHF EPC Gen 2 tags with built-in sensors to monitor the temperature of produce from the grower through to the DCs, to ensure produce remained at

optimum temperatures, thereby reducing spoilage.

According to Ellison, the retailer constantly evaluates the viability and cost of utilizing radio frequency identification. "We have seen a number of benefits, but there are also several challenges to using RFID in the food retail business," he says. "We operate in a harsh environment, with high levels of water and metal—which can interfere with RFID—and temperature-sensitive areas. The current economic viability is also a challenge, with the overall cost of the solution—including tags, casings and infrastructure—still quite high. The overall cost for a company the size of Woolworths is still too high, and the return on investment for track and trace is just not enough for us to race ahead."

The Australian market in RFID systems and integration is also in its infancy, Ellison notes. "When the market does mature and provides a more robust solution to meets our business need," he states, "then we will see if track and trace can fit into the business. For now, we are keeping a watching brief on the technology, and will see if the costs come down."

Ellison is more upbeat about the potential for RFID in temperature control to reduce spoilage and stock wastage, stating, "We are looking to take RFID for temperature control to the next stage, and test it across a larger supply chain to see if we can produce the same benefits. We hope to expand on the pilot in the next quarter. We will also look at other areas where RFID could have an application, but these are in their infancy."

If Woolworths does roll out RFID across its business, it will be the first major Australian retailer to do so, despite the success of trials at such international retailers as [Wal-Mart](#) in the United States, [Tesco](#) in the United Kingdom and [Metro](#) in Germany. The overall cost of RFID infrastructure has been a significant factor in the slow take-up of RFID in Australian retail stores, according to Chris Kelley, director of RFID at [Intermec](#).

"The price of tags is coming down, but for a retailer, it is the overall cost of the RFID infrastructure that is proving a problem," Kelley explains. "The best chance of achieving a good return on investment is from a closed-loop application, where the project is under their complete control. Many companies have hyped RFID tracking involving the entire supply chain, but this involves too many players. Closed-loop RFID, such as the movement of pallets, bins and containers from distribution centers to the stores, has more immediate benefits."

Once a retailer experiences the benefits of RFID tracking, Kelley says, it will be easier to expand the technology to its partners in the supply chain.

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