

Reducing Shrink With RFID

More companies are looking to use RFID to reduce theft, but can it do the job?

By Mark Roberti

Oct. 6, 2008—I talk to end users and potential end users of radio frequency identification technologies almost every day, and lately, the word “theft” is coming up in a lot of conversations. I’m not sure why. Perhaps, it’s because RFID Journal and others have written about a study done by the University of Arkansas’s RFID Research Center (see [Retailers See RFID's Potential to Fight Shrinkage](#)), which shows EPC RFID can be used for to detect theft. Or maybe companies are just struggling with ways to reduce theft and many are hitting on RFID as a potential solution.

Companies thinking along these lines need to understand that EPC RFID technology has some strengths and weaknesses as an anti-theft tool. If you put a dozen RFID-tagged garments in “booster bag”—a foil-lined bag used by thieves—you will not be able to detect the tags as the shoplifter approaches an RFID reader near the doorway. This is true of RF-based electronic article surveillance tags as well. The foil prevents energy from the reader from ever reaching the tag, so it cannot send back a signal.

But the RFID Research Center showed that EPC RFID tags worked fairly well in other shoplifting scenarios. For instance, if you grab a few items and run for the exit, RFID readers at the door can detect the tags more than 90 percent of the time and at least tell you what items were stolen. That might not sound like a big deal, but if you don’t know what was stolen, you can’t replace the item and so you also loose a sale.

RFID can do more than just identify what was stolen when used smartly in the supply chain; it can actual prevent thefts. One way is by issuing RFID badges to employees and putting access control systems in secure areas of the warehouse. Employees need to use their RFID badges to open a secure room or cage containing high-value goods, such as digital video cameras. That enables software to link the person who opened the door to the cage with the items removed from the cage. If those items go missing, the investigation starts with the person who unlocked the cage.

RFID can also be combined with other technologies to reduce theft in the supply chain. Some companies are linking RFID to video surveillance systems. Sony, for instance, reads the tags on pallets of digital cameras and DVD players, and video tapes the pallet being shrink-wrapped and loaded on a truck. Sony then embeds the RFID tag IDs in the digital video file (see [Sony Europe Implements Video-RFID Tracking System](#)). If a retailer says that the pallet didn’t arrive with a full load, Sony can check the videotape to confirm that a full load was or wasn’t shipped.

It also might be possible to use passive infrared sensors, similar to those used in motion detectors for lighting, to determine when someone has entered a room. If the person is not wearing an RFID badge, an alarm sounds, or electronic locks are instructed not to open.

For larger assets, active RFID tags with accelerometers could be used to determine when an item is moved. Simple rules engines could be set up to determine when an item can be moved and by whom. So imagine an

active tag with an accelerometer is placed inside the packaging of a 50-inch flat-screen TV. Software sounds an alarm if that TV is moved when the warehouse is closed at night or when someone without a badge authorizing them to move the TV tries to do so.

RELATED_ARTICLES Theft is always going to be a problem. But RFID's ability to identify people and objects and link them offers the opportunity to make it harder for staff to steal from a company. Obviously, companies need to weigh the cost of deploying an RFID system against the savings it will yield. Sony expected a payback from its RFID video surveillance system in less than a year. In some cases, RFID's ability to reduce theft can add to the ROI of a system used to provide other benefits, such as reduced labor costs from checking orders and fewer charge-backs because the orders are more accurate.

Companies shouldn't see RFID as a means to end employee theft, but there's no doubt that an RFID system deployed smartly can cut down on losses dramatically.

Mark Roberti is the founder and editor of RFID Journal. If you would like to comment on this article, click on the link below. To read more of Mark's opinions, visit the [RFID Journal Blog](#) or click [here](#).

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