

## TOPICS

### MMR

#### HEARD AROUND

- The latest management changes at Rite Aid, while catching industry people by surprise, were not in themselves surprising.
- Costco, which will add Australia to its portfolio, bringing the number of countries where it operates to eight, plans to open its first outlet there in Melbourne next July.

## An Antitheft Coup

By John DeGasperis

NEW YORK — New computer vision technology may help retailers curtail "sweethearting" losses, an insidious form of theft that accounts for an estimated \$13 billion in losses each year.

#### SPOTLIGHT

Sweethearting occurs when dishonest cashiers pretend to scan merchandise but actually bypass the scanner, not charging the customer for the item. The shopper is very often a friend, a family member or a fellow employee working

in tandem with the cashier.

As noted by Richard Hollinger, a professor in the Department of Criminology, Law and Society at the University of Florida, Gainesville, sweethearting is a difficult problem because it is easy to do, hard to detect and can be performed by anyone with access to a point-of-sale terminal.

According to the National Retail Security Survey, produced by the National Retail Federation and the University of Florida, about 50% of inventory shrinkage is due to internal theft, and many loss prevention executives attribute as much as 60% to 80% of that theft to fraud occurring at front-end registers.

Retailers have long relied on technology to control theft and have had some success. Many stores have installed closed-circuit TV cameras to catch employees in the act of stealing.

Transaction monitoring, which synchronizes point-of-sale transactions with video recordings, can be used to detect sweethearting after it has occurred by having someone visually observe that an item has bypassed the scanner. Unfortunately the technology requires laborious manual identification.

New software introduced by StopLift Checkout Systems offers



New computer vision technology can help stores nab "sweethearters"

new capabilities by analyzing pixels of digitized video to determine whether or not an item was properly scanned.

Malay Kundu, StopLift's founder, is a Massachusetts Institute of Technology graduate who has a background developing real-time facial recognition systems for identifying terrorists in airports.

The idea for StopLift's anti-sweethearting software grew out of his Harvard Business School research study of retail loss prevention. While working on that project Kundu concluded that video recognition could be used to automate, and thus make

possible, comprehensive examination of surveillance video.

The software is based on behavior recognition algorithms involving analysis of three-dimensional body poses and gestures, allowing it to differentiate between normal or abnormal movements. In developing the software Kundu characterized and classified behaviors that are indicative of sweethearting.

The technology works by analyzing pixels of digital video, examining exactly how a cashier handles each item to determine whether or not it was scanned properly. Its analysis takes in a set of fraudulent behaviors such as misalignment of the item and scanner. The software examines how each item is handled in every transaction, enabling it to catch sweethearting in the act.

While retailers of all kinds have battled sweethearting, the practice has hit supermarkets particularly hard because of their narrow profit margins. According to Mark Gaudette, director of loss prevention at Big Y Foods Inc., "This type of theft has been costing the retail industry \$13 billion a year and, before StopLift technology became available, there has been no way to detect it."

The software has gone through successful field trials. Tom Perkins, director of loss prevention at Hannaford Bros., a unit of the Delhaize Group, based in Scarborough, Me., which has implemented a pilot program using StopLift, says: "Having the StopLift technology in place has enabled us to discover losses that we were previously unaware of. This is one of the most significant leaps in loss prevention technology I've seen in more than a decade. Despite several kinds of loss prevention technology available to us, none of them has addressed sweethearting."