



by **Richard C. Hollinger, Ph.D.**

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## Preventing Sweethearting

In the September/October 2006 issue, I discussed in this column a hybrid form of workplace dishonesty that is severely impacting shrinkage levels, namely, sweethearting. This issue is also distorting our understanding of the true source of loss and shrinkage. I pointed out that any time an employee or sales associate is discovered to be involved in theft, the incident is usually categorized as an “internal” or a “DE” case regardless of the circumstances.

While dishonest associates generally steal on their own without any help or conspirators, closer examination using exception-reporting technology, transaction analysis, and data-mining software shows an increasing number of cases where outsiders, including former employees, frequent shoppers, school friends, roommates, spouses, fraternity brothers, sorority sisters, or gang members, are on the receiving end of “unauthorized discounts” given by dishonest employees. Most retail firms simply classify these hybrid internal/outsider thefts as “internal” instances of employee dishonesty.

The reason that these hybrid thefts are labeled as DE cases is dependent upon the fact that the employee facilitated the larceny by violating their trust relationship with the company. In other words, without the employee’s active or passive involvement these crimes could not have occurred.

Most readers agreed with the main point of my earlier column, namely, that we in LP need to do a much better job of measuring, detecting, and preventing hybrid forms of theft such as sweethearting. This goal is easy to state, but the real challenge is exactly how does one implement this without a massive increase in staff? Detecting single acts of employee dishonesty requires very sophisticated investigation techniques. Catching the DE who is sweethearting is made even more difficult when the offender is working in collaboration with others.

### Leveraging Technology

Examining the results from the most recent National Retail Security Surveys, one can conclude that the current trend in loss prevention can be summarized by one simple phrase—“leveraging technology.” Significant strides have been made in the past decade by utilizing advanced computer and CCTV technology to catch employees in the act of stealing from the company. Most of these new advances are in the arena of exception reporting and transaction monitoring.

Transaction-monitoring and exception-reporting systems have been available for the past fifteen years. Most transaction-monitoring systems, also called POS overlay or POS integration systems, synchronize video recording with POS transactions in order to provide a visual verification along with the items appearing on the terminal transaction. These systems can be used to detect sweethearting after it has occurred by

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having a human visually observe that an item has bypassed the scanner. Unfortunately, this method relies solely on the manual identification of the scan bypass, meaning that an investigator would have to either know beforehand exactly which specific transactions to look at, or review volumes of video manually to find the suspected transactions.

Exception-reporting software is used successfully with and without video surveillance, and is not confined to POS transactions. These software packages can identify a wide range of fraudulent or unusual activity by collecting POS data and comparing it to pre-set exception parameters. For example, an excessive amount of “no sale” transactions on a particular terminal might indicate a problem with missing cash or a fraudulent return. Exception software can identify and report these transactions sorted in any parameter order. In tandem with video surveillance, some systems can pick out the appropriate video “clip” to provide a visual along with the transaction data.

### Behavior Recognition

One of the latest advances in this technological side of loss prevention is using “behavior recognition” software to detect employees in the act of sweethearting.

Located just outside of Boston not far from its MIT roots, a company called StopLift and its team of computer-vision researchers have developed artificially intelligent video recognition software specifically designed to detect sweethearting at the retail point-of-sale, especially collusion between a retail cashier and a customer in which items are placed on the counter, but not scanned into the POS system.

Sweethearting is a significant problem because it's easy to do, hard to detect, and anyone with access to the POS terminal can do it.

- **Easy to Do**—Failing to scan an item requires no manipulation of a transaction. Because associates sometimes rationalize sweethearting as “a favor” for someone else, it is more easily psychologically justifiable.
- **Hard to Detect**—Sweethearted items are skipped, not scanned, leaving no trail in the transaction data. So, conventional exception-reporting data-mining activities are not very effective. Sweethearting is usually detected by direct observation, studying video, or through chance tip-offs. Due to their labor intensiveness and cost, none of these methods are particularly effective.
- **Anyone Can Do It**—Sales transactions are much more numerous than other services such as refunds. Moreover, cashiering activities are entrusted to a large number of employees. Even the newest associates or temporary workers work the register during busy seasons.

## How Behavior Recognition Works

A few years ago during a break in the National Retail Federation LP convention, a young man approached me with a

laptop and asked to show me some video. That man was Malay Kundu, StopLift's founder. Kundu received undergraduate and graduate degrees from the Massachusetts Institute of Technology (MIT), spending most of his time developing real-time facial-recognition systems for identifying terrorists in airports.

Facial recognition involves a series of steps that serve to capture, analyze, and compare facial features captured from a video “clip” to those stored in a database. The objective is to identify a specific person. The recognition software uses a mathematical technique, called an algorithm, to “map” a face and assign a numerical code for that face based upon its features. To find a match, the recognition software searches the video for matching data.

StopLift's newest patented software is designed not to match a single face, but to determine *what a person is doing*. Using sophisticated behavior recognition algorithms involving 3-D human body pose analysis and gesture recognition, it can differentiate between normal and abnormal movement behavior. Kundu and his team started developing behavior-recognition technology by addressing, analyzing, classifying, and recognizing (by computer) the behaviors that are indicative of refund activity. After successfully addressing refunds, they used the same principles to address sweethearting.

By mathematically analyzing the pixels of digitized video, the software scrutinizes how *exactly* a cashier handles each item to determine whether or not it was properly scanned. The system is capable of understanding the full set of fraudulent behaviors, including covering a bar code or purposely misaligning the

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## SUPPLY-CHAIN SECURITY

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### Col. Joseph Lajunesse

While there are many examples of modern day heroes, here are my personal favorites. Colonel Joseph Lajunesse serves as a protection specialist at a Target store in southern Minnesota when he is not serving his country. He is a family man that has chosen a civilian career in which he can feel good about his contribution to society and can focus on his wife and kids as the priority in his life. He has also dedicated the last three years of his life to ensuring our troops receive what they need when they need it as part of the Army's sophisticated supply chain. He is a hero both for what he does in the cause of freedom and for what he does for this profession and his community.

### Capt. Meagan Bryant

Captain Meagan Bryant serves as consultant with Trade Innovations. In her civilian life she travels the world assisting companies with their anti-terrorism and supply-chain security programs. She definitely does her part to help make the world a better place by traveling to some of the world's most dangerous places. These places are critical to the world economy and ultimately to world peace. That is only the beginning of Meagan's story however.

Meagan had a dream to fly helicopters. The result of that dream is that the Army is lucky to have one of the best Apache helicopter pilots in the business. She recently deployed to Iraq for a third tour of duty. That is bad news for Trade Innovations, but is good news for the cause of freedom. Our country and our profession are fortunate to have Captain Bryant. I am proud to be associated with such an individual.

No matter what your political persuasion, both Col. Lajunesse and Capt. Bryant serve as an inspiration to us all. They are representative of the many men and women from loss prevention that have answered the call. They are heroes in my book because they have chosen the path that General Schwarzkopf outlined over fifteen years ago.

The next time you are faced with a tough decision, remember why you chose this profession and take inspiration from those who have gone before us. Heroes are made one step at a time and they don't make decisions because the outcome will "make them look good." Support our troops, they are heroes. ■

## e-news

### Electronic Newsletter

*LossPrevention* produces a monthly e-newsletter with current events and links to loss prevention-related news and information in the press and on the web. If you aren't receiving this timely newsletter, delivered right to your in-box, sign up at [www.LPportal.com/maillinglist.html](http://www.LPportal.com/maillinglist.html). 📧

## WORKPLACE DISHONESTY

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scanner and item. By computerizing a task otherwise too laborious for humans, the software is able to inspect and verify the handling of *each* item in *every* transaction, enabling it to catch sweethearting the first time it occurs.

Prior to developing this software, Kundu and his research team personally interviewed numerous LP executives and reached some interesting conclusions.

- Confirming the findings of the National Retail Security Survey, most heads of LP attribute roughly 50 percent of their inventory shrinkage to internal theft. Going a level deeper, the LP leaders attribute 60 to 80 percent of the internal theft to fraud occurring at the front-end registers. In other words, despite current efforts, more than one-third of all inventory shrinkage takes place at the registers.
- While exception reporting has been useful to LP professionals for finding certain kinds of internal theft, the fact that so much of internal theft still occurs at the register points to holes in the system such as sweethearting, where because there is no paper trail, little can be detected by data mining alone.

*AUTHOR'S NOTE: I want readers to know that I am not personally endorsing this product, nor do I have any financial interest in Stoplift or this technology. I simply want to highlight technological developments that have the chance to reduce shrinkage and fight employee dishonesty.*

*I also want to thank Bob DiLonardo for his contributions to this article. ■*

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