

The Intelligent Surveillance Solution for Retail

Cut shrinkage. Increase profits.



Challenges that retailers face today

The entire retail industry faces a major challenge in trying to combat internal and external shrinkage. And retail crime continues to be one of the most serious problems facing retailers.



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2018 National Retail Security Survey

According to the “2018 National Retail Security Survey” conducted by the National Retail Federation (NRF) the U.S. retail economy lost \$46.8 billion worth of products in 2017, with an average retail shrink rate of 1.33%. Alarming, over 40% of the retailers surveyed reported increases in overall inventory shrink and the average cost per shoplifting incident doubled to \$559.

By far the largest causes of shrinkage are internal theft, shoplifting, fraud and organized retail crime (ORC). These can have a crippling effect on profit margins while also putting shoppers and employees at risk.

However, despite the scale of the problem, just over a third (36.5%) of the retailers surveyed by the NRF said they were allocating new resources to loss prevention technology.

Unfortunately, finding an effective solution is not simple, as retailers face a number of significant challenges:

- **High foot traffic** - makes it difficult for staff to manually watch everything all the time. Organized groups have also developed ways to distract staff while theft takes place.
- **Geographical spread** - with many stores spread across large distances, profiling the thieves so that they can be identified and denied entry is problematic.
- **Broader surveillance spectrum** - the growth in organized groups and the increasing sophistication of repeat criminals is making it extremely difficult for staff to identify suspicious behavior, especially while performing other duties.

- A lack of technology for advanced customer tracking, occupancy and in-store movement analytics, as well as forecasting for current inventory, results in overstocking losses.
- Inconsistent processes or guidance for employees to follow when dealing with theft or breakages. Where retailers are using technology to mitigate the problem, the surveillance and loss prevention process is usually still very manual and fragmented. Multiple tools are used that are not interconnected. It is difficult to employ advanced tracking or machine intelligence to gain one true view of data that can be quickly analyzed to make informed decisions. As a result, the process is:
 - **Slow** - by the time loss prevention managers identify that there is a problem, based on returns and voids, the culprit has usually long left the store.
 - **Resource intensive** - viewing and analyzing large amounts of video data is time-consuming, especially when it has to be mapped onto POS transactions for exception reporting.
 - **Inaccurate** - manually tracking the behavior of a particular suspect can be difficult, especially when they are working as part of a team.

Deploying video management systems in all stores is not a feasible solution for many retailers as they have insufficient IT budgets, inadequate localized IT support and issues with network bandwidth crunch.

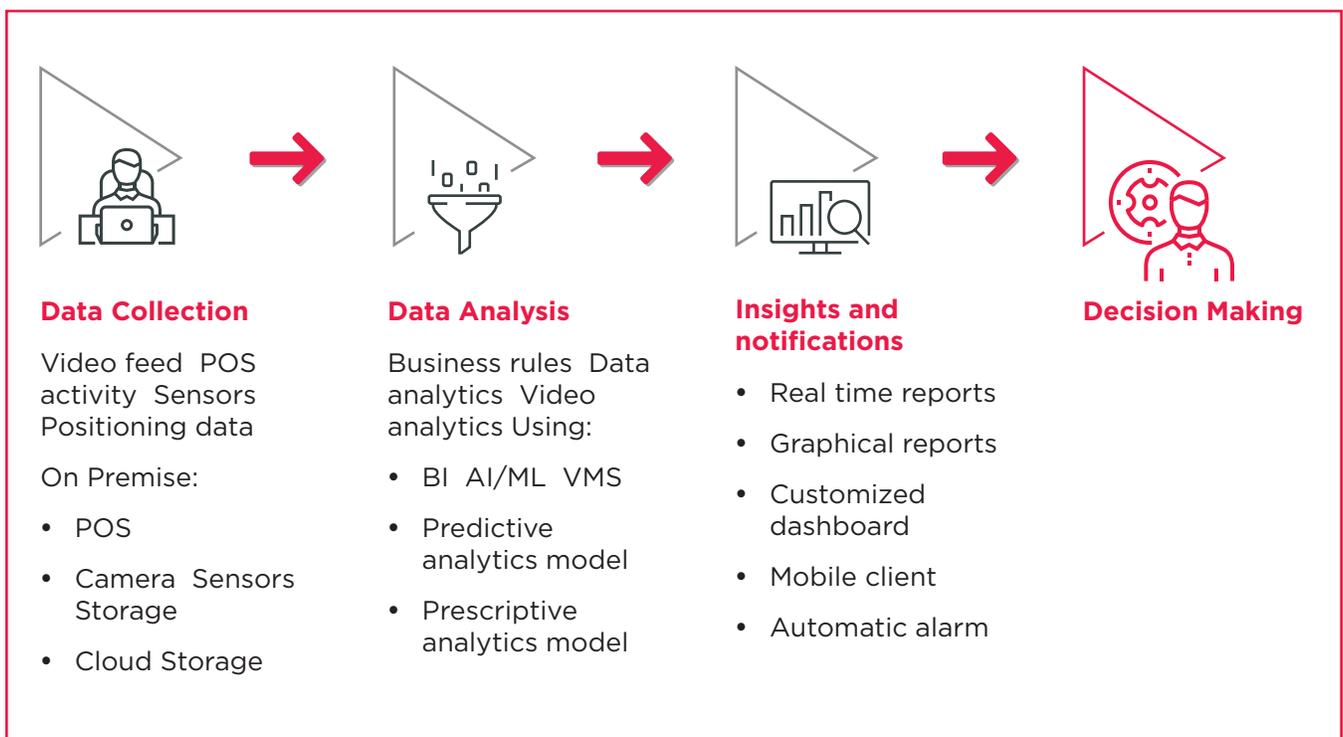
Clearly, an intelligent solution is needed

Hitachi and HCL addressing the challenge

Hitachi Vantara and HCL Technologies understand the major issues that retailers face and believe that, to stem the tide of shrinkage and retail theft, you need to transform the way you tackle the issue. Using Hitachi Vantara's data center transformation, object store and analytics solutions with HCL's application integration, technical services and business consulting expertise, we have developed an intelligent surveillance solution for retail. It gives you better processes to keep track of receipts, orders and sales, resulting in up-to-date information about shrinkage. It also gives you a holistic view of all activities in store, including frauds and thefts, using high precision tracking and intelligent behavior analysis, so you can focus on the things that really matter.

Using real-time data from several different types of connected devices, such as smartphones, sensors and video cameras, managers can quickly gain a better understanding of the minute-to-minute needs of their location. They can optimize store operations and the customer experience with precise people counting, flow and path orientation, while also reducing stock-on-hand through better forecasting. It also helps reduce losses from shoplifting, hindering waste and incomplete transactions, without requiring loss prevention managers to be constantly looking at their screen, by:

- Accurately tracking customers in store in real-time to detect suspicious activities, but without capturing identifying characteristics in order to avoid any privacy issues.
- Highlighting areas where 'tendency of theft' is high.
- Automatically mapping suspicious POS transactions onto the respective video feed data to identify fraudulent transactions and internal theft with an easy to use search facility.
- Instantly detecting and tracking individual suspects using facial recognition as soon as they enter any store and:
 - Sharing this information across all stores.
 - Sending instant alerts to security staff at the store and at headquarters with the live location of the suspect.
 - Taking action to deny the person entry to the store or referring them to the police.
 - Creating a tailored video feed for evidence.





The HCL RISE Framework

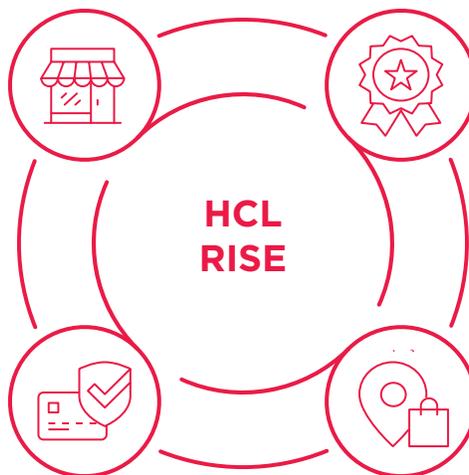
HCL's Retail Intelligence and Surveillance Engine is a framework which integrates all the IoT devices the retailer has, uses AI/ML and Data Analytics to enable retailers with the right amount of data which helps them increase their operational efficiency, reduce loss, improve customer experience leading to more profit per sq. feet.

Store Analytics

- Loyalty Analysis
- Gender/Age Analysis
- Dwell Time Analysis
- Engagement Analysis
 - Inventory/Product Information
- Conversion Analysis
- Direction Analysis

Customer Experience

- In-store Navigation
- Personalized Offers
- Location based Offers
- Employee Empowerment
- Auto Checkout
- Inventory/Product Information
- Alternate Offers



Security & Operations

- Store Ops & Fulfillment
 - Sweethearting
- Access Authorization
 - Labor Optimization
- Transaction Monitoring
- Black list/ Attention list Monitoring
- POS-Video Mapping

Warehouse Management

- Automation
- Shrinkage Detection
- Employee Training
- Route Management
- Inventory Management

Taking advantage of technology

The intelligent surveillance solution for retail gives you a real-time view from both the store and transaction perspective as it:



- Captures data from various new or existing end-point devices, including edge cameras and 3D-LiDAR sensors.
- Uses facial recognition to easily identify and monitor thieves and their accomplices (especially for customers with acute theft problem) and then enrolls their faces into a database that can be federated across all stores.
- Integrates the data with the retail POS application.

By unifying all of this structured and unstructured data (both POS transaction and video tracking data) through a single, unified dashboard and providing live reporting and real-time analytics, it helps you act quickly with relevant evidence to prevent shoplifting, fraudulent transactions and internal theft.

Its flexible architecture means that the solution can be used by all types of retailers who already have a digital storage or a network video system but need to expand it, or those who want to build a completely new loss- prevention solution.

In addition, the intelligent surveillance solution for retail not only provides a powerful tool to manage shrinkage, but also a base on which future capabilities can be built. Once it is set up, the basic architecture remains the same so you can easily and cost-effectively scale it up and introduce more advanced capabilities, like in-store customer analytics, warehouse management and traffic management.

3D-LiDAR Motion Sensor

Uses infrared beam technology to identify and precisely track movement to help provide:

- **Comprehensive in-store analysis**

The sensor can track the number of people entering and exiting the store, as well as the aisles visited, time spent in particular locations, products viewed and selected for purchase.

- **Enhanced security**

Shoplifting can be deterred by using the sensor to detect suspicious behavior, actions and time spent in a location. They can detect movement in areas where security cameras have blind spots and alert security personnel.

Analytics Platform

Allows advanced modeling to understand that key factors are highly correlated or play a causal role in retail losses. It provides a real-time view of the store with advanced heatmaps by product and by consumptions.

When data is analyzed based on rules, discrepancies are algorithmically highlighted and potential shrink can be identified. This helps you move from being reactive to proactive by understanding underlying factors, identifying their magnitude at each location and taking the necessary remedial action.

Reaping the benefits

The intelligent surveillance solution for retail helps you reduce theft and losses while achieving other business benefits by capitalizing on opportunities that would otherwise go unnoticed.



Loss and theft prevention

- Reduce daily losses caused by theft, saving the industry billions of dollars and improving business profitability.
- Achieve long-term savings by:
 - identifying repeat offenders and denying them entry or referring them to the police.
 - deterring organized groups from attempting to steal from stores.
- Minimize internal fraud.

Track In-store customer journey leading to

- Efficient Store Planogramming
- Real time store performance measurement
- Improved visibility on hot products/areas leading to better inventory turnover
- Conversion rate optimization
- Optimized checkout process
- Improved customer understanding leading to better customer engagement
- Optimize Marketing and Promotions and Improved understanding of their Impact

Enable Customer with the right information by

- Showing the areas where discounts are ongoing on the store map and help customer navigate to those areas
- Providing personalized offers based on customer loyalty
- Providing the queue status of different checkout counters
- Providing Assistance on press of a button
- Predicting what customer might need and provide notification with personalized offer when customer is at home to help them build the shopping list

Enhance long-term performance

- Improve product selection and store management by consolidating and analyzing shopper traffic and inventory data.
- Reimagine products, services and business models by predicting consumer behavior and forecasting seasonal patterns.
- Deliver a better customer experience by integrating more internet of things (IoT) and edge technologies to gain deeper consumer insights.

For more details, please write to: **RCPGSI@HCL.COM**



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