

Three Key Considerations for Implementing a Successful Video Analytics Program in the Retail Market

Overview

Five years ago, video analytics for retail applications offered a lot of potential, but not a lot of delivery. Not everyone knew what to expect and the idea that you could just push a button and all kinds of value would come out never came to fruition. However, with an application specific approach and the progress in technology, video analytics can now deliver useful information from both a loss prevention standpoint, and a merchandising and business management front.

The combination of video, POS and exception reporting analytics can provide cost savings, minimize theft, reduce the need for extra operators monitoring multiple cameras, and maximize marketing and sales efficiency. A well-designed analytics program can identify the targeted behavior of interest and alert appropriate people to specific activities, allowing them to focus their attention on other important areas of their jobs. For example, only show register activity where there is no customer present.

To implement a successful video analytics program as part of a surveillance and business optimization plan, retailers must consider their challenges and needs, and the options available. Perhaps the most important consideration for video analytics in retail applications is determining exactly what the retailer is trying to accomplish. There are a number of potential applications for video analytics in retail, but all call for different setups, equipment and considerations. So it is critical to determine application needs as specifically as possible — before implementing a program.

For example, if a retail location is interested in seeing what employees or customers are doing with their hands while at the register, a single camera facing downward over the cash scanning area is a necessity. A wider angle lens may be able to see two, three or even four registers at once, but the number of pixels per register is greatly reduced and would only make sense for situations where broader information was needed, such as if a person is present during a sales transaction or how many people are standing in the queue.

Camera positioning and data needs are determined largely by the application. Two main applications that are particularly useful for retail are loss prevention, and sales and merchandising. There is a classic combination of questions that retailers must answer to

help them determine what exactly they are trying to find out and what solution will work best for their application.

Determining Loss Prevention Needs

Loss prevention analytics can take on a number of scenarios, including internal or external theft. The retail store may be concerned with organized retail crime (ORC) theft, employee theft or a combination of the two. Once a retailer decides that loss prevention is a goal for the video analytics program, a few questions need to be asked:

1. Is the surveillance system being used as a deterrent or are loss prevention personnel interested in creating evidence in the event of a crime?
2. What specifically does the store have a problem with or why do they need data? Data needs will help determine what other systems need to work with the surveillance system in order to convert data to useful information. If the retail store wants to flag video when customers are not present during transactions or in the event of large cash transactions to see if an employee is palming money, then transactional theft reports most likely will need to be created along with the analytics program flagging the video clip.
3. Are there specific behaviors that loss prevention personnel want to be notified about? Analytics can be programmed to detect behaviors that may precede a theft, such as loitering or exiting through unauthorized doors.
4. Are you looking for real time information, and alert or forensic use? Are you looking to import exception reports and prioritize based on video analytics, etc...

Capturing Consumer Behavior

For retailers that want to capitalize on the data that their video surveillance systems provide about their customers, the options are as endless as with loss prevention applications. It cannot be overemphasized, however, that the key challenges for the retailer are determining the specific scenarios they want data for and in what form they want the data. To determine what video analytics are most appropriate for a sales and merchandising application, ask the following questions:

1. Who will be the recipient of the information and how technical does the data need to be? Will the sales department be asking for daily or weekly reports on consumer behavior? Is C-level management asking for high-level data? For example, if the marketing department wants to test the effectiveness of a particular promotion or end cap, they will want to make sure the transactional sales during that particular period are measured versus a regular non-



promotional time. They may want to know how many customers came by the aisle compared with the financial transactions that occurred during that time frame.

2. How will the recipients of the information expect to interact with it? If the marketing department does not need to see video clips, for example, but needs daily or weekly reports on people counting, queues and other consumer behaviors, it's critical to pinpoint these needs before implementing a surveillance and analytics program.
3. What actions, if any, are employees expected to perform based on the results? If management is interested only in reports about traffic flow rates or wait times at registers, then notifications or event triggers may not be necessary. However, floor managers may want to be notified via text or phone when a queue exceeds a certain amount of customers so they can add staff or open registers in real time.

Partnering for Success

Once retailers determine their goals with a video surveillance and analytics program, finding an experienced systems integrator to help guide them through their options is well worth the time and effort. A plug-and-play solution is not reality and with the possibilities of analytics only limited by a retailer's imagination, it can be difficult for a company to be 100% sure of what they are looking for. A systems integrator can help determine what systems, hardware and solutions make the most sense for the best return on investment. Retailers should test drive one or more systems to see how they meet their needs, but the fine-tuning really begins after a system is chosen. The right partner will help with the very important task of testing and adjusting the surveillance system — a prerequisite for success that cannot be overlooked. Most successful analytics programs need to be evaluated regularly to make sure that the video and data is meeting the retail store's needs.

The system should run for several days or a week collecting as much data as possible. This allows the retailer to go back through the data and identify what is working and what is not. If a store determines they want data on the number of people and times of day that customers are in the high-end purse section, they may run a search and find that the 1,000 hits they are getting every day is not efficient, and, therefore, they can adjust the search parameters to give them more meaningful, useful data. Rerunning searches, fine-tuning the levels and parameters of capturing metadata, and determining whether lighting and cameras are positioned properly are true drivers of a robust analytics program.



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In the past, it was common to program camera and system settings at a particular percentage or average based on store layout and luminance level. However, while the manual calibration of a surveillance and analytics system may demand more time, the end result greatly maximizes the investment with higher quality video and tailored data.

While determining the need is the first step in finding a video surveillance and analytics solution, needs evolve and technology continues to mature as well. What is on the market today will be different this time next year, and therefore, it is imperative to find a system that can provide you with what you want today, as well as the ability to offer what you may want in the future. In the next five years, there will be a trend of truly integrating/unifying all the retail systems together: POS data, people counters, video and beyond — not only at the store level, but regionally and globally. Such a trend in video analytics will make narrowing down your needs, as well as finding a viable, stable system and supplier, all the more important.

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Shahar Ze'evi

Senior Product Manager - victor/VideoEdge technologies
szeevi@tycoint.com