



Retailers worldwide suffer significant losses every year due to internal and external theft. In 2006, North American retailers lost in excess of \$40 billion USD to shrinkage. This represents from 1.6% to 2.4% of total retail sales*.

Omnicast IP Video Surveillance for Retailers

Investment in security technology that reduces shrinkage is a necessity to improve bottom line profitability in today's retail market.

The Bottom Line Solution

Today, Genetec's Omnicast solution offers the benefits of intelligent video surveillance to retailers worldwide. This innovative technology can assist in minimizing losses as well as providing a new source of marketing information.

In recent surveys, over 97% of the world's top retailers reported using CCTV as a primary tool to detect and deter cash and merchandise theft from their stores and distribution centers. The vast majority of these companies use analog technology and simple DVR storage devices to record images from their sales floor, warehouse docks, and checkout areas. The biggest drawbacks to these mature technologies are:

- The quality of the video images
- The finite amount of cameras that can be cost-effectively deployed
- The limited video storage space
- The restricted ability to view video remotely due to bandwidth limitations
- The sheer amount of video that needs to be reviewed to identify the causes of shrinkage

Thanks to Omnicast's sophisticated engineering, retailers can now automatically identify theft, fraud, intrusion, and trespassing in a wide range of environments.

Unlike analog cameras that are limited in their available lines of resolution, this new technology allows retailers to take advantage of the highest-quality images available. This ultimately enables security professionals to accurately identify sus-



Omnicast provides retailers with an open-architecture video surveillance system that allows unlimited scalability, efficient remote viewing and unmatched reliability with off-the-shelf IT equipment.

pects, vehicles, merchandise and even currency denominations, inside the store and out. When surveyed, the retail asset protection groups ranked higher-resolution images as the biggest benefit they sought in new video solutions. Omnicast offers integrated compatibility with every major IP camera brand, including megapixel cameras. But with high-resolution IP cameras comes another challenge—storage and retrieval of the video.

Today's DVRs offer a finite amount of camera inputs and storage capacity. The average DVR will only accommodate 16 cameras and can barely store three weeks of video in standard resolution. To add even one additional camera may require the purchase of an additional DVR. IP video offers a limitless amount of cameras and an infinite amount of storage space. With Omnicast, retailers are able to move away from proprietary DVR technology and use off-the-shelf computing and storage equipment to scale the system to their specific needs. A single Omnicast enterprise system can accommodate thousands of cameras.

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Omnicast allows the user to set all the parameters for storage including recording on schedules, motion or alarmed events. Video can be stored locally, or directed anywhere throughout the network, or both.

Omnicast also offers the ability to redundantly record the video so evidence is preserved in the case of local hardware failure. In fact, all applications and settings running under Omnicast can be made redundant, making it a truly resilient system.

One of the biggest limitations of analog and DVR technology for retail is accessing stored video from remote locations. In a typical loss prevention department, a retailer will have multiple regional loss prevention managers responsible for large geographic areas. In some cases, a single manager may be assigned to 100 or more stores, covering multiple states or regions. The ability to connect to these stores remotely is paramount, but yet is often hampered by bandwidth restrictions set forth by their telecommunications infrastructure.

Data from point of sale (POS) and credit card verification always take network priority in order for a retailer to conduct daily business. Current DVR technology offers very limited options for accessing and transferring the video. Omnicast offers multiple options for compressing video files and transmitting the data for optimal bandwidth usage. Eventually, Omnicast will be able to transmit these files, in batch, during non-peak hours back to a centralized location or multiple locations. One of Omnicast's most important benefits is

multicasting, which replicates an existing video stream, rather than opening a separate stream, so multiple users are not putting undue strain on network resources. The ability to easily access live and recorded security video is one of the biggest catalyst for the change to intelligent video surveillance.



Omnicast leverages the power of data searches and video analytics to speed up the investigation process and reduce shrinkage.

Nevertheless, of all the challenges posed by analog/DVR technology, one of the most daunting may be how to locate suspicious or illegal behaviour amongst the hours and hours of recorded video. By its very nature, the technology is reactive rather than proactive. Take the example of a supermarket with 12 checkout lanes using a 16-camera analog/DVR system. This store may have concentrated eight of their available cameras on the check stands, one at cus-

tomers service, one in the pharmacy, one on the front entry doors, one on the receiving doors, and the rest on the sales floor. If this store operates from 8:00 am to midnight, they record 256 hours of video per day (16 hours x 16 cameras). A security professional could not begin to review this much data without a specific cause. Often, that cause occurs after the fact. In an incident of internal theft, a cashier may have come up short on her register, or another employee may have told a manager they saw the cashier giving away merchandise (passing). In this case, the investigator would be required to scan the cashier's entire shift (average seven hours) looking for the transaction(s) where cash may have been taken or merchandise was passed. Meanwhile, he may have missed another thief using a stolen

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credit card to purchase groceries, an employee taking product out the back door or a shoplifter stealing an entire peg rack or razor blades. For all of these scenarios, Omnicast offers actionable solutions. At the POS, Omnicast offers a metadata search engine. The Metadata Engine is a powerful tool that allows end-users to optimize their searches by extracting data from Omnicast or other integrated retail data mining and security applications. For example, a query to the Metadata Engine to search for all voided transactions would populate a list of only the associated video where those transactions took place. For the passing incident, the system could be requested to show all incidents where bagging of merchandise took place but no transaction was recorded. In the case of the stolen credit card, the card number could be entered into the search field and an alert set anytime it was used. An in-store manager could then be notified, so the suspect could be stopped before leaving the premises.

As for the receiving door employee theft, Omnicast could be programmed to alarm anytime the backdoor was opened, or to refine it further, only in the hours after deliveries are accepted. As for the shoplifter with the razor blades, a powerful new tool called analytics could be incorporated to alert store personnel of the theft when it happened. Video analytics solutions have the capacity to identify people, follow the movement of objects, analyze behaviours, and detect the removal or abandonment

of an object within a camera's view. An example of this capability within Omnicast is the system's ability to generate an alert when an individual is detected loitering in an aisle for an extended period of time. This type of suspicious behaviour often precedes a shoplifting attempt. Analytics also have the ability to alert operators when



The power of Omnicast's Federation enables retailers to perform enterprise-wide searches, and merchandize analysis, as well as provides system access to local law enforcement.

there is repetitive movement where none should exist. As the thief continues to reach to the peg hook for the razor blades, the intelligence of analytics lets the retailer know this is not a normal shopping behaviour. Omnicast offers seamless integration of the "best-in-class" analytics currently available. If the shoplifter was to run out of the store into a waiting car, AutoVu, Genetec's license plate recognition (LPR) solution would track, locate and isolate the car. AutoVu has the ability to record the license plate number of all

vehicles within camera view. With this technology, a retailer could simply search exterior cameras and quickly identify the suspect and vehicle. Should this car come into another store equipped with AutoVu, an alert could automatically be sent to that store's security personnel, notifying them that a known thief was about to enter the store. Given the global epidemic of organized retail theft (ORT), AutoVu provides a valuable asset in any retailer's security arsenal.

These shrinkage events are typical for a single retail store. And as previously mentioned, a typical loss prevention manager may have responsibility for dozens or hun-

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dreds of stores. Of all the features available within the Omnicast system, Federation possesses the potential to improve shrink management the most. Federation's primary benefit is the ability to send a query or command to all locations networked to Omnicast, simultaneously. Matches to the query, whether from one location or 200, are returned to the originator.

In a practical application, an investigator can ask Omnicast to display the video of all stores where a receiving door was opened after 4:00 pm, or to show all refunds from that day's transactions over \$100. The response would be a populated list of all events matching the search criteria. A single mouse click would show the corresponding video for each event. Federation, via Omnicast, offers the single most-effective shrink management technology available to retailers today.

Another interesting feature of Federation is the ability to view multiple store locations on the same screen. This application could allow a security manager to look at all of his storefronts simultaneously. This could prove beneficial in the event of a natural disaster, civil unrest or other crisis situation. From an operational standpoint, a chain could view the front end of all stores in a given region to determine if staffing for that time frame was adequate. For the merchandising department, this capability could provide a look at a new display or product presentation to gauge customer reaction. As previously mentioned, because of multicasting, all of these views could be conducted at the same time, without putting undue strain on the network.

Yet another application with Federation is the ability to give access of select network cameras to organizations outside the retailer. A possible scenario might be mall stores with parking lot access providing the view of their exterior cameras to mall security or law enforcement. Of course, these exterior cameras would continue to be recorded

and monitored within the stores' systems. Outside of the security aspect yet again, a retailer could allow a key supplier to view their product's performance or inventory status in a real-time through a single camera in the store.



True visibility with IP intelligence is now available to all facets of retail.

With all the benefits IP video offers, the real question for retail professionals may be how to take immediate advantage of the technology without sacrificing their existing investment in various analog devices. Once again, Omnicast is the answer.

Omnicast integrates with "best-of-breed" encoders—devices that convert an analog signal to digital. This ensures that stores can convert to intelligent video without the need to replace all existing analog cameras and monitors at once. This cost-effective method will allow chains to replace analog cameras as their life cycle ends or their budget allows. Omnicast even integrates devices like PTZ controls and keyboards into its user console so the day-to-day operations of manned in-store systems continue seamlessly.

The open architecture of all Genetec products offers seemingly limitless integration opportunities. Synergis, our access control solution, provides real-time and recorded video from Omnicast to track movement and employee history through the corpo-

Genetec is a pioneer in the physical security and public safety industry and a global provider of world-class IP video surveillance, access control and license plate recognition (LPR) solutions to markets such as transportation, education, retail, gaming, government and more. With sales offices and partnerships around the world, Genetec has established itself as the leader in innovative networked solutions by employing a high level of flexibility and forward-thinking principles into the development of its core technology and business solutions. Genetec's corporate culture is an extension of these very same principles, encouraging a dynamic and innovative workforce that is dedicated to the development of cutting-edge solutions and to exceptional customer care.

rate office, distribution center, pharmacy, and even into the locked product cases on the sales floor. Synergis can also integrate into a store's analog alarm panel providing instant video verification of intrusion events or fire. Likewise, Omnicast offers the ability to interface throughout the store, distribution center, or corporate office. Data feeds such as pharmacy prescriptions, refrigeration temperatures, or HVAC conditions can be tracked, alerted, and recorded through the Metadata Engine. True visibility with IP intelligence is now available to all facets of retail.

By leveraging its networked architecture, Omnicast offers the unique benefit of managing all security data from any work station. With Omnicast, it is possible to manage the security of thousands of remote locations simultaneously from a single point or from multiple locations around the globe.

In summary, Omnicast offers retailers nearly endless possibilities to secure their establishments. IP video security technologies represent a giant leap forward for retail loss prevention. The benefits of IP video security technology are clear: reduced shrinkage, improved operations and increased bottom-line revenue.

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* 2006 National Retail Federation Loss Prevention Survey