

Expanding the Possibilities of Video Surveillance Technology in Retail

White Paper Prepared for ADT

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Video Solutions have been successfully addressing the challenge of high crime rates in the retail sector. A study by the National Association of Convenience Stores on the use of CCTV in retail convenience stores reported robberies reduced by as much as 53 percent. In another case, a series of studies on the use of CCTV in parking lots showed a dramatic reduction in every situation with one study reporting an 89 percent reduction of auto theft. Video surveillance technology, today, represents a comprehensive solution tackling not just security concerns, but also driving operational efficiency to ensure considerable savings. Retailers are looking at different ways to expand the benefits of their video surveillance systems. The purpose of this whitepaper is to provide an overview of some of those benefit areas and also explore other business functions that could greatly profit from video surveillance investments. The research for this whitepaper included in-depth interviews with retailers across different categories such as Apparel, Supermarkets, Groceries, Specialty Accessories, Drug Stores, Auto Parts, and Household Furnishings among others.

Why Loss Prevention is Critical to Every Retailer?

Increasing cost and competition pressures are an integral feature of the present retail industry. Real-time demand pressures are resulting in supply chain complexities and large scale retailers are pushing down prices and lowering margins. Retailers are also focusing a great deal of attention on in-store operations since most of the capital and employee resources are invested at the store level. More importantly, overall customer experiences are established in store, requiring retailers to ensure safe environments and streamlined processes.

The 2006 National Retail Security Survey estimates retail shrinkage averaged 1.57% accounting for total losses of approximately \$40.5 billion in the U. S.

Ensuring customer-centric strategies becomes difficult when the retailer is faced with key business challenges. Retail shrinkage losses continue to adversely impact the industry. The National Retail Security Survey estimates that retail shrinkage averaged 1.57 percent of retail sales in 2006, representing total retail losses of \$40.5 billion ⁽¹⁾.

Key Challenges Facing the Retail Sector

Internal and External Theft: Employee theft is among the primary reasons for high retail shrinkage rates, accounting for almost \$19.5 billion (47 percent of total losses) ⁽¹⁾. Huge losses are incurred with dishonest employees passing across additional items through point-of-sale (POS)

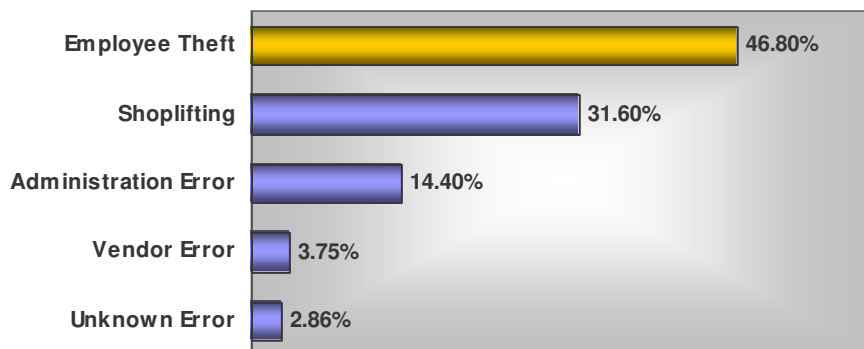


Figure 1 – Total annual retail loss on account of inventory shrinkage amounts to approximately \$40.5 billion. Source: 2006 National Retail Security Survey – University of Florida

counters. External threat of theft includes incidents of shoplifting, burglary, and robbery. Shoplifting cases account for almost a third of retail losses at approximately \$13.3 billion ⁽¹⁾. Organized retail crime is increasingly becoming an industry-wide challenge that retailers are faced with in recent times. Retailers are now cognizant of the fact that their security strategies need to be robust enough to tackle planned theft operations.

⁽¹⁾ 2006 National Retail Security Survey undertaken by the University of Florida.

Retail Segments with More than Average Shrink Rates

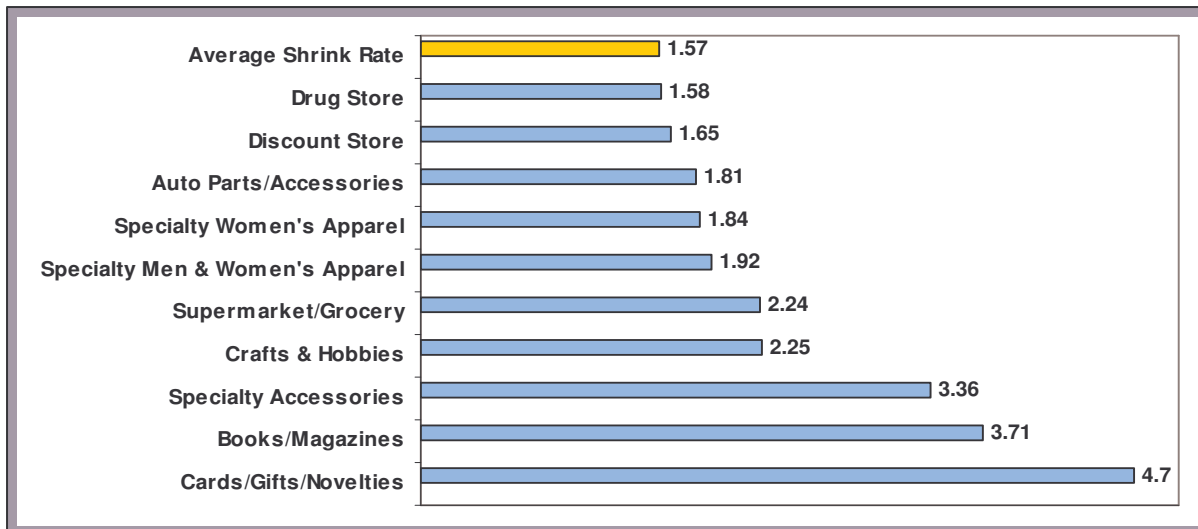


Figure 1 (B), Source: 2006 National Retail Security Survey

Operational Efficiency: Operational efficiency is a critical necessity for retailers who are already faced with stiff margin pressures. Especially with second and third tier retailers, an increased focus on processes will provide improved business agility and visibility into sales transactions taking place at the store. Backend processes also require monitoring since they impact inventory control and labor utilization rates.

Lack of Customer Insight: Store level profits are influenced by a number of factors such as consumer traffic, campaigns, and promotions that require a clear insight into consumer behavior patterns. Retail real estate is expensive and effective management is a key requirement. Traffic patterns and frequencies, therefore, need to be mapped and used effectively for marketing purposes. The lack of information results in a major disconnect between the retailer's marketing plans and the ultimate consumer.

Retail - A Real Business Case for Video Technology Solutions

Loss prevention is, today, a significant part of any retailer's overall strategy. Retailers are progressing towards multi-layered and integrated security solutions that effectively address theft reduction, surveillance and store back-end protection needs. Video surveillance systems have always been a significant technology component in overall security and operational strategies within the retail sector.

The traditional scope of video monitoring solutions that was restricted to security and crime prevention is being extended to include strategic operational and marketing benefits. The National Floor Safety Institute's research on the growing rate of slip-and-fall fraud estimates that such fraudulent cases cost Americans almost \$8 million per day. The benefits from a retailer's perspective are therefore multi-fold and corroborate a natural scaling-up of existing video deployments.

Applications	Overcoming Security Issues									Non-Security Related Benefits									
	Employee Inventory Theft	Sweet-hearting Theft	Shoplifting	Cash Theft	Robbery	Burglary	Assaults / Harassment	Customer Accident Claims	Employee Accident Claims	Customer Traffic Patterns	Point of Purchase Marketing	Store Real Estate Management	Reduced Waiting Time	Better Staffing Decisions	Merchandising Decisions	Promotions Management	Avoid Administrative Errors	Employee Performance & Training	Customer Relations
Sales Floor Monitoring	X		X				X	X	X	X	X	X		X	X	X		X	X
Entrance and EAS Monitoring			X							X									
POS Transaction Interface		X		X							X	X	X	X	X	X	X	X	
Store Backend Monitoring	X		X		X	X	X		X				X					X	
External Premises Surveillance					X	X		X	X										
Forensic / Covert Investigations	X	X	X	X	X	X	X	X	X				X					X	
Remote Viewing	X	X	X	X	X	X	X	X	X		X	X	X	X	X			X	
Public View Monitoring			X		X	X		X	X			X	X	X	X				X
CCTV for Deterrence Monitoring	X		X															X	

Figure 2

Figure 2 presents key video monitoring applications areas and the resultant benefits from a retailer's perspective. Some of these benefits have been highlighted and discussed in the following sections.

Employee Theft Prevention and Increasing Point-of-Sale (POS) Integration Benefits

Due to the nature of the retail business, employee theft and administrative errors constitute a substantial part of overall retail shrinkage losses. Most of these cases occur at the point of sale, thereby, requiring strong surveillance systems that monitor transactions at check-out counters.

Interfacing video with POS data provides a strong verification system to track intentional employee theft and pricing errors. For instance, video coverage would reveal the items being scanned and when this data is matched with POS data, it could indicate if there is a mismatch of items scanned and billed for.

This integration also enables retailers in effectively utilizing their employee resources based on the volume and frequency of POS transactions. Employees may not be required at counters during lean periods of the day and, conversely, additional employee resources may be needed when consumer traffic is extremely high. Video data, therefore, facilitates effective staffing decisions based on changing traffic patterns.

Case Study – Leveraging Video Surveillance Infrastructure in POS environments

The Challenge: Achieving lower than average shrinkage rates was the primary objective of deploying video surveillance systems. While backroom and external premises monitoring was yielding desired results, inventory continued to go missing at point-of-sale.

Benefit Areas: All POS terminals were fitted with video surveillance cameras. Video imagery was further integrated with existing POS transaction data as well. This helped identify cases where,

- Deviation in number of items picked by the camera and being scanned for on POS
- Returns accounted for on POS data while no items were present in the video imagery

Additionally, it also helped in,

- Queue monitoring, understanding stock levels and condition, merchandizing decisions and service delivery.

The Result: Inventory shrinkage rates reduced by a full percentage (%) point in 12 months.

Decreasing Retailer Liability with Evidentiary Support

Key Reasons for Retailer Liability

- Employment Practice Lawsuits
- Customer / Employee Accident Claims
- Product Liability Lawsuits
- Compliance with Safety Regulations

Retailers are able to better dispose off fraudulent customer and employee claims with video evidence. The use of the technology ensures a safe environment for both, the employee and the customer. If a customer or employee has had an accident, the retailer can easily identify if safety regulations and norms have been violated or ignored. Video evidence can significantly expedite processing of such claims and limits the liability of the retailer. Escaping even a single lawsuit that costs almost \$100,000 would easily justify the ROI for a video solution installation.

Case Study – Securing Investigative Evidence

The Challenge: Shoplifting was a huge concern for this retailer, especially in stores that had high consumer traffic because of their locations. While most of these stores had cameras covering the store entrance and check-out counters, certain section of the store still lacked video coverage.

Benefit Areas: Investing in additional cameras throughout the store enabled loss prevention staff to identify shoplifting patterns and behavior. Security tags were being removed in sections of the store which were not earlier covered by video cameras. Shoplifters were identified immediately with the increased video data and security personnel at the entrance were alerted in real time.

The Result: Securing evidence of crime on video footage enabled the retailer to drastically decrease the number of shoplifting cases. In serious cases, the footage provided definite evidence for arrest. With certain first time shoplifters, the retailer was able to use a ban restricting them from entering any of their stores.

Improved Employee Production and Premises Monitoring

Case Study – Why Invest in Employee Productivity?

The Challenge: Although this retail chain had already implemented video monitoring systems in a limited capacity, the VP of Loss Prevention needed to convince the Board to invest additional budgets for video surveillance expansion into other areas and stores. The company already had below average shrinkage rates but there was also a clear need to increase employee productivity at the store level. Also, considerable employee time was being spent in investigating false alarms at remote store locations.

Benefit Areas: The video surveillance solution helped to;

- Identify unproductive employees on the shop floor or backroom
- Understand traffic patterns and optimize staff resources at checkout counters
- Record best practices for employee training
- Enable store managers in remote monitoring of employees
- Immediately identify false triggering of alarms
- Protect employees from abusive behavior

The Result: Lower staff turnover (attrition reduced by 10%), increased productivity at the point of sale, faster settlement of false accident claims and other investigations. Results were achieved in just over 18 months.

Store level operations tend to have high concentration of employee resources. Managing these resources ensures maximum productivity levels leading to improved efficiency and profitability. Present day video surveillance, therefore, includes surveying of consumers *and* employees. The presence of video cameras provides a deterrence factor, ensuring that employees are avoiding unproductive activities.

Video monitoring solutions in conjunction with the Internet are opening possibilities where the technology may be used as a management tool. Managers can remotely download video coverage and monitor store operations – *Remote Viewing*. Also, a large amount of employee resource time and efforts is wasted in attending to false alarm cases. This is especially significant in cases where employees or investigative teams have to travel to remote locations or stores when alarm systems are triggered. Such monitoring solutions enable video verification operators to view clips after the alarm has been activated. Advances in video technology and the increasing focus on IP network integration will better enable remote verification of alarm systems and ensure that employee resources are managed responsibly.

Significance of Outdoor Premises Monitoring: The importance of investing in outdoor premises monitoring has particularly gained interest with the escalating crime rates in major shopping malls and retail facilities. City councils and retailers have been increasing the scope of their video surveillance projects since consumer safety concerns have been in the forefront of recent media attention. While indoor video surveillance has been a phenomenon for a long time, the lack of outdoor surveillance has indirectly contributed to increased crime in parking lots and garage blocks.

Investments in surveillance solutions will also decrease liability from potential lawsuits. The increase in crime rates have meant that more and more retailers and mall owners are faced with mounting lawsuits. The increased willingness of consumers to sue is also a definite threat that retailers need to address quickly. Retail facilities are expected to keep their premises reasonably safe for consumers who frequent the place. Securing the surrounding premises with surveillance options will help in projecting the right image of a 'socially responsible' organization that values customer and employee safety.

The Need for 'Socially Responsible Retailers'

A woman was abducted from a shopping center parking lot and shot. The owner of the shopping center and its management were sued for inadequate security measures in the center's parking lot. The jury awarded the woman **\$2.5 million** as damages with findings that the security initiatives were not in keeping with the area's high crime rates.

Although the case proved successful for one shopping center owner, he spent close to **\$800,000** in court costs and legal fees.

A mall in suburban Pennsylvania was estimated to have spent **millions** in a settlement case involving the shooting of several shoppers by a deranged woman. Although, the person was ruled to be criminally insane, the jury held the mall owners responsible for damages that were liable to the victims.

Reducing Liability Premium Costs and Other Savings

Retailers pay huge insurance premiums to secure themselves from potential liability suits and property damage, especially in high risk areas. Video surveillance systems can dramatically decrease insurance premiums, resulting in definite savings on an unavoidable annual cost. Businesses are also allowed to deduct investments (in some cases, almost 100% of purchases are deductible) in security equipment for tax purposes.

Employee related insurance also forms a major cost consideration and ensuring a good track record of accident-free environments through surveillance solutions will decrease such premiums in future. The Insurance Information Institute estimates that fraudulent cases cost the industry approximately \$30 billion a year. Video systems enable identifying fraudulent accident claims by employees and customers.

Exploring Future Benefits from IP-based Video Surveillance Technology and Analytics

Increasing Operational and Marketing Efficiency

There is a positive shift of emphasis among retailers towards using video surveillance solutions outside the realm of traditional security and loss prevention requirements. Retailers expect future IT-based video solutions to provide insights into consumer behavior that will help in strategic decision making within functions such as marketing. Analyzing visual data could provide retailers significant information on the number of customers entering a particular section of the store, time spent at each section, path traveled, and time spent waiting-in-line.

Case Study – Maximizing Promotional Spend

The Challenge: Optimizing promotional spends was a key concern for this apparel retail chain. Seasonal promotions accounted for almost 25% of annual sales and therefore, maximizing sales during this period was critical.

Benefit Areas: Existing video solutions that were installed for security helped to;

- Identify areas of high-margin item traffic
- Ensure continuous inventory near promotion signage
- Re-merchandise shelf displays depending on traffic patterns

The Result: The pilot promotional campaign that was run with the video intelligence ensured that the store achieved a success rate of almost 20% sales, higher, than other stores.

Case Study – Enhancing Customer Service Levels

The Challenge: High priced electronic items were a major category at this retail chain and ensuring immediate service levels was critical to achieving sales.

Benefit Areas: Video cameras were fitted across the store to identify customers who were spending more time at certain product displays and sections. By using video coverage to immediately locate an interested customer, store managers were able to direct nearby staff to assist them.

Integrating video analytics in the future could completely automate locating prospective customers based on specific parameters. For instance, staff maybe immediately notified when customers spend more than a minute in high-margin product sections.

The Result: Ensuring immediate and real-time service levels to customers improved overall business performance.



Figure 3

Digital video systems are progressively replacing traditional analog systems. As retailers increasingly deploy video solutions for operational and marketing intelligence purposes, investments in digital recorders and analytics are expected to increase. Such advancements would enable retailers to cut down on labor and time costs associated with manual searches. From an investigative stand point, digital technology is also likely to provide enhanced and adjustable image quality that will strengthen the retailer's evidence.

Case Study – Fine Tuning Store Management Strategies

The Challenge: Certain stores within this retail chain were not performing according to expectations although they had similar layouts, staff capacity and product lines.

Benefit Areas: Video data was used to monitor when customer traffic was high and low during the day. The retailer found that most of the customers visited these stores in the morning and afternoons presented little or no traffic. Due to the quiet periods later on in the day, staff was being under-utilized and thereby, resulting in huge costs.

The Result: The information gained enabled the retailer to make the decision on opening these stores earlier than usual. Staffing decisions were altered to include additional part-time employees during the morning shift and reduce the staff during the afternoon. Customer service levels improved dramatically and the retailer was able to cut down on additional staffing costs.

Integrating video monitoring systems over IP-based networks is expected to result in reliable data storage and increase remote monitoring of video data. This would eliminate the need to invest in separate security and investigation teams at each store. Intelligent video analysis could support external surveillance monitoring as well, including, license plate recognition of vehicles entering and leaving, reporting unattended objects, and activating alarms and camera systems in case of an emergency. The possibilities of expanding the scope of video surveillance technology are endless.

Project Cost Composition from Analog/Digital Infrastructure to IP-based Systems

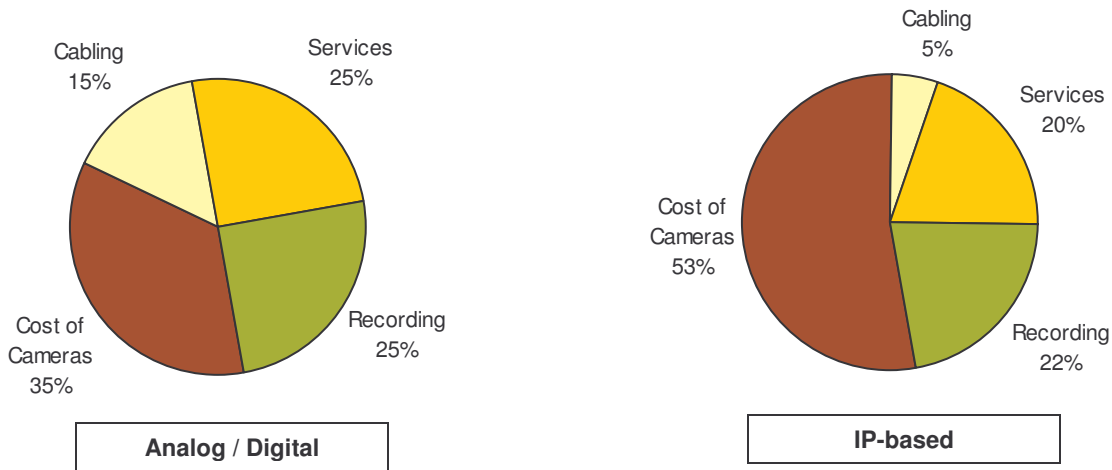


Figure 4 and 5 – The breakdown costs include cameras, recording and storage costs (servers, software, programming), services (labor, installation, consultation, training etc), and cabling costs (switches, panels, cables)

With the increasing standardization of analog hardware, vendors are differentiating themselves based on their ability to easily transition into IP-based networks and their extensive services portfolio. Companies with a strong product quality outlook and high service portfolio emphasis are expected to gain significant market shares in the overall video solutions market.

Investing in Video Surveillance Solutions from the Overall Retail Enterprise Perspective

The shift towards wireless IP and digital surveillance cameras has resulted in the need for video monitoring technology across business functions within a retail enterprise. The motive for investing in advanced video solutions is no longer restricted to loss prevention strategies and increased interest for the technology is being witnessed among marketing and operation departments as well.

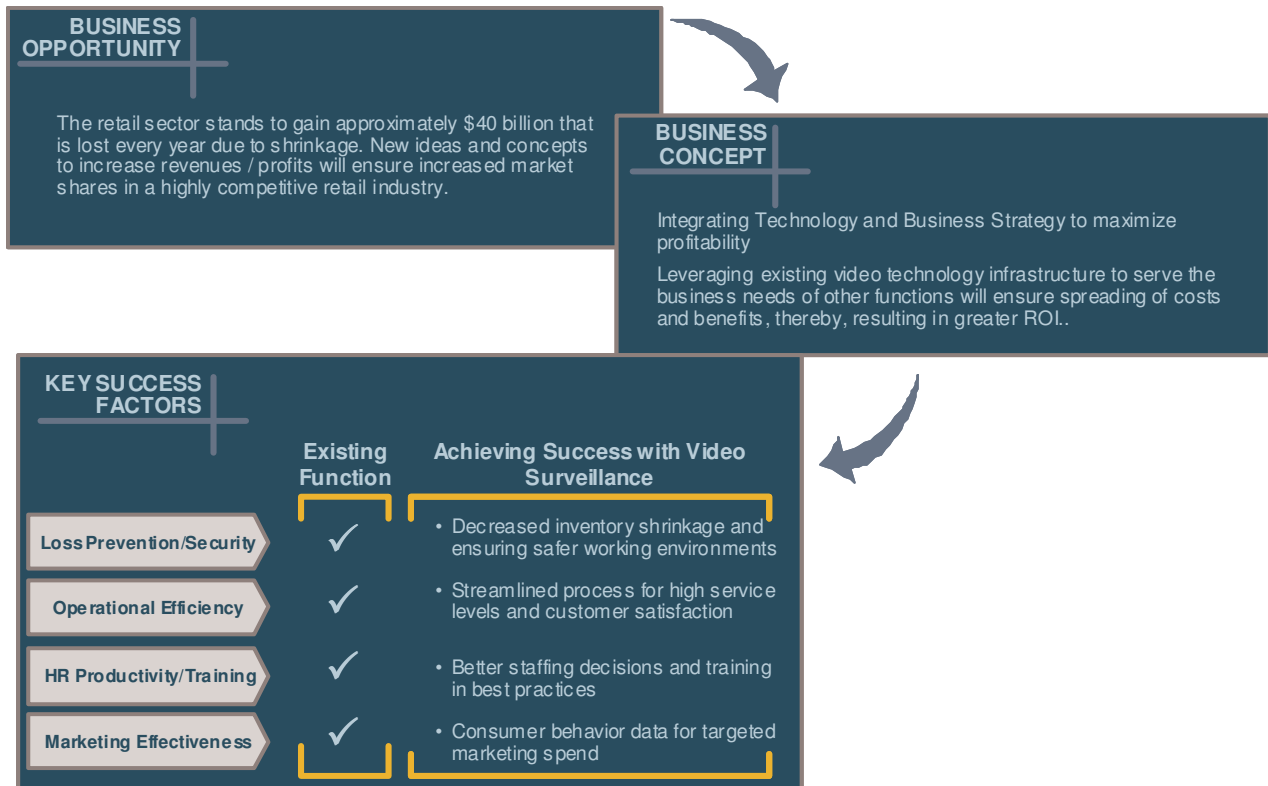


Figure 6

The intelligent data mining of such video coverage using analytics enables retail managers to make better decisions about advertising / marketing spend, safety and compliance issues and serving customers better. This section presents the key cost components of a video monitoring installation for a store and also highlights the key areas of benefit where retailers can foresee a definite ROI.

Areas of Key Benefit and the Relevant Timeframe of Impact

Expected Area of Benefit	Short Term	Medium Term	Long Term
Employee productivity	X		
Preventing internal and external theft	X		
Reducing liability on account of claims/compensation	X		
Safety / regulatory compliance		X	
Employee training		X	X
Marketing intelligence *	X	X	X
Remote monitoring and operational efficiency	X	X	
Defense against organized retail crime (ORC)	X		

Note: * Marketing Intelligence could realize benefits in all three time periods depending on the objective. Promotions and merchandizing decisions could see immediate ROI benefits while advertising spends could realize tangible benefits in the medium and long term.

The impact term indicates the expected period during which retailers have identified realizable revenue benefits. (Short term – less than 1 year, Medium term – 1 to 3 years, Long term – more than 3 years)

Translating Benefits of Video Surveillance Investments into Tangible Results

The various case studies discussed in the earlier sections of this White Paper highlighted the benefits that retailers have achieved after deploying video surveillance solutions.

Inventory shrinkage rates reduced by a full percentage (%) point in 12 months

Staff attrition reduced by 10% over 18 months

Store promotional campaign that was run with the video intelligence ensured almost 20% sales higher than other stores

This following section aims to illustrate how some of these benefits that have been realized can ensure results that positively impact a retailer's bottom line and ensure significant cost savings.

Illustration 1: Inventory shrinkage is among the primary motivators for video surveillance investments. The following example has been presented to understand how potential savings due to shrinkage could easily justify investing in video solutions. Results from previous case studies show that retailers have managed to reduce shrinkage rates by a full percentage point in 12 months. For the purpose of this illustration, it has been assumed conservatively that shrinkage rates decrease by half percentage point every year.

	Year 1	Year 2
Sales per month (assuming monthly sales increase by 20% in the next year)	\$1,000,000	\$1,200,000
Shrinkage losses per month (assuming existing shrink rate is 2%)	\$20,000	\$24,000
Decrease in shrink rates with video investments	1.5%	1.0%
Revised shrinkage loss per month after deploying video solutions	\$15,000	\$12,000
Net savings per month	\$5,000	\$12,000
Annual savings to retailer	\$60,000	\$144,000

Illustration 2: The benefits of video solution investments extend to safer working environments, identification of employee best practices for recognition and capturing events that maybe used for future training. All these factors have a significant impact on employee productivity and turnover. Given that attrition is a huge challenge within the retail sector, the following example presents potential savings that maybe gained from a retailer's perspective.

One of the previous case studies mentioned a 10% decrease in employee turnover over 18 months after investing in video solutions. The example illustrated here only takes into account indirect costs incurred in recruiting a new employee. If one considers the opportunity loss in sales due to an absent employee, the impact on revenues and profits is much more significant.

Total number of employees	1000
Annual turnover	50%
Number of employees to be replaced	500
Cost per employee*	\$1800
Savings realized if turnover reduced by 10%	\$180,000

*(Includes recruitment / hiring costs, administrative costs, training and, supervision costs)

Retailers who have the futuristic vision of integrating video technology to increase the efficiency and success rates of all business functions will derive the maximum ROI from their investments. The cost of investment and the resultant benefits are shared across the retail enterprise, thereby, ensuring a greater impact on the overall bottom line. Losses within the retail sector are especially significant since trading margins are so low. If a retailer loses an item costing \$100, chances are that the profit margin on that item is only 10% resulting in a loss of \$90. With competition increasing every year, retailers also need solutions that provide them with a competitive edge to attract new customers and retain them. Whether the requirement is loss prevention, marketing intelligence or operational support, video surveillance solutions provide a universal answer that can dramatically change the retail industry.

About ADT Security Services

ADT is among the leading end-to-end video solution providers in the industry, today. The company video technology product lines leverages on a long standing market leadership position for electronic security systems and services. ADT offers a wide range of monitoring and surveillance systems, depending on the client needs and requirements – ranging from traditional analog systems to advanced digital video technology and IP-based network infrastructure. The company's extensive service and product portfolio provides a one-stop solution for most retailers who looking for an integrated technology partner.