

Benefits of network video for retail: A new perspective on retail surveillance

An independent research report commissioned by Axis Communications, the global leader in network video and conducted by the Centre for Retail Research (CRR), has revealed that the vast majority of retailers are considering a move to IP-based surveillance and also expressed a strong interest in using network video for business intelligence applications.

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1. Introduction

The report into 'Retail use and experience of CCTV in the UK' examines current and future use of CCTV in the retail sector and revealed that 71% of UK retailers currently using analogue were planning to rollout network cameras.

Commenting on the report, Professor Joshua Bamfield from the CRR noted, "Although analogue CCTV still dominates in this sector, retailers are obviously beginning to realise its limitations and appreciate the additional benefits an IP-based system can deliver."

Based upon an open platform, flexible and scalable architecture, some of the obvious benefits of network video include superior image quality, simple deployment, seamless remote access and a multitude of integration possibilities.

However retailers faced by a challenging economic climate and fierce competition, need to maximise the return on investment (ROI) on any hardware spend and consider how it can positively impact the bottom line.

Legacy investments in analogue video surveillance have primarily been based around loss prevention and security, where it has been difficult to measure a clear ROI. However retailers are now starting to realise that IP video surveillance when applied with analytics, can also provide valuable real-time business intelligence and increase the value of their investment in video.

Leveraging network video to improve store layouts, optimise merchandising strategies and increase operational efficiency, will ultimately drive sales and profitability and instigate a change in perspective on the role of video surveillance within retail.

2. The value of video surveillance

Retailers clearly see the benefits of video surveillance as both a deterrent and incident investigation tool, with more than two thirds of respondents reporting theft had fallen as a result of video surveillance. Similarly, the use of video is widely accepted as an essential tool to tackle loss prevention with 91% of retailers currently using video surveillance.

Given the negative public perception of CCTV in some quarters, it is interesting to note that retailers reported no negative reaction from staff or customers in the use of security cameras.

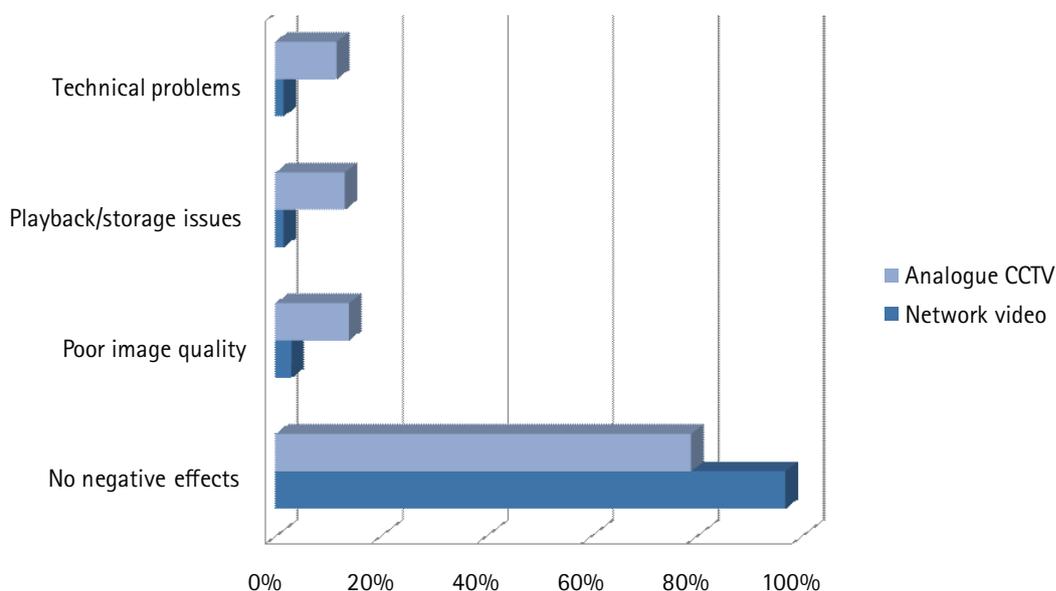
Using video surveillance to decrease theft in a retail environment has multiple benefits beyond just reduction in shrink, it is also crucial for customers to feel safe and secure and for employee's who need to feel a sense of security in the workplace. This can only serve to improve the overall customer experience and foster a more desirable workplace environment, achieving long term benefits for retailers in terms of employee retention and customer loyalty.

3. Enhancing loss prevention

The annual cost of shrinkage to the UK retail market is £4.4 billion, according to the 2010 Global retail theft barometer report. Video surveillance is a vital component in any loss prevention strategy and in a market still dominated by analogue CCTV, it highlights the importance to evaluate new technology which can improve on current practices.

The performance of network video systems within retail is superior to analogue CCTV, according to the report into retail use of CCTV. Almost 97% of UK retailers reported no negative effects in using network video, outperforming analogue systems where 21% of users reported negative effects. Overall network video users experienced a higher level of satisfaction with regards to image quality and operational use.

Retail experience of video surveillance



Benefits of HDTV to loss prevention

Despite the widespread presence of security cameras in the retail sector, shrinkage remains a major challenge to UK retailers. Perhaps the public associate CCTV with generating low quality grainy images, a perception stemming from CCTV footage broadcast on TV programmes such as Crimewatch, casting doubts upon the ability of a surveillance system to visually identify a shoplifter or tackle internal theft.

Retailers looking to improve their loss prevention strategy should consider embracing HDTV (High definition television) cameras. Utilising the same technology now ubiquitous within the consumer video industry, HDTV network cameras comply with a standard that guarantees quality assurance.

According to the report, almost 70% of retailers cite better evidence material as a major benefit of using CCTV. Designed around an established standard, HDTV network cameras offer high resolution video with extreme image detail. Proving more effective in identification and significantly improving forensic analysis of post event footage, adopting HDTV will increase the value of a retailer's investment in video surveillance to tackle loss prevention.

Conceivably this could also change public perception on the ability of a surveillance system to capture evidential quality video, empowering an investment in security cameras to act more as a deterrent and consequently reduce shrink related incidents.

Greater flexibility, simple deployment, reduced costs

An effective loss prevention strategy should continually evaluate new technology, not simply to adopt the "latest and greatest" products, but to harness innovative solutions which can deliver tangible benefits and reduce costs.

With the report suggesting 71% of overall retailers and 87% of larger retailers are set to adopt network video, UK retailers are evidently starting to appreciate the benefits of incorporating network video into future loss prevention strategy.

- > **Cost-effective deployment:** HDTV network cameras offer a minimum resolution three times greater than the analogue CCTV cameras used within many stores today. Retailers can now benefit from improved security coverage whilst deploying fewer cameras.

Faster deployment, reduced cabling, lower software licensing costs, less power consumption and limited maintenance will also reduce implementation costs.

- > **Ease of installation:** Network cameras support PoE (Power Over Ethernet) technology, allowing a single cable to power a camera, as well as distribute video, audio, alarm signals and PTZ (Pan, Tilt and Zoom) control. Camera re-deployments enforced by store layout changes will now be faster, easier and less costly to implement.

With extensive networks and PoE devices such as wireless access points deployed in many retail stores today, a PoE network camera implementation can yield substantial savings in installation costs and cabling through leveraging existing IT equipment.

- > **Solutions optimized for retail:** An innovative use of HDTV cameras, addresses a challenge retailers face with monitoring shopping aisles. The landscape format (4:3) traditionally offered by cameras are inappropriate as large parts of the field of view – specifically the sides of the image – are redundant.

The optimum field of view for many shopping aisles is a narrow horizontal view, with higher vertical coverage. Network cameras that support rotation of a 16:9 widescreen HDTV image into a 9:16 format, offer a vertically orientated video stream that captures more usable images along an aisle, which is of particular relevance to high racking environments.

- > **Ease of integration:** Network video systems based on open standards, offer integration with existing loss prevention systems, such as EAS, access control, EPOS and public view monitors. For example, synchronised network video and point of sale (POS) transaction data in conjunction with analytics, provide valuable exception based reports to intelligently analyse and detect fraud arising from sweet hearting.

- > **Protect existing CCTV investments:** Retailers can leverage their existing investments in analogue CCTV cameras through network encoders, whilst retaining the network video benefits of remote access, efficient bandwidth utilisation and integration with third party systems. Network cameras and encoders can operate in tandem, all managed from a single, unified software front end.

- > **Future-proof:** A network video system based on an open platform can easily integrate third party analytics such as intrusion detection or people counting, either embedded within the camera or encoder, server based or a combination of both. Retailers making the step to network video are no longer locked into proprietary technology, ensuring freedom of choice and long term investment protection.

A case in point is the explosive growth of Apple iPads, a technology now adopted by some UK retailers, to enable regional managers to remotely review real time data on store performance. Although network cameras were on the market long before the availability of iPads, these devices seamlessly integrate with network video, enabling regional managers to also remotely gather visual intelligence on store activity.

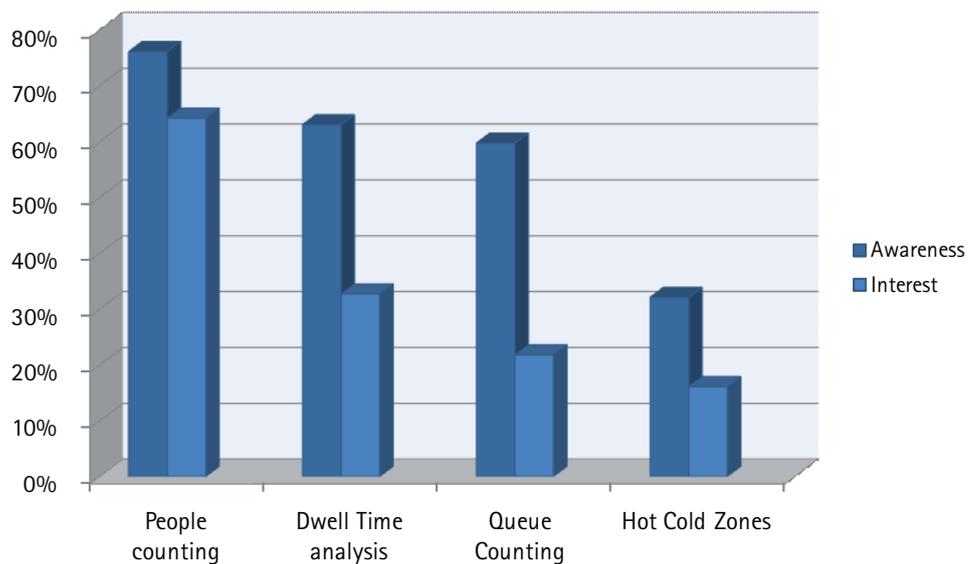
4. Delivering greater business value

Retailer's perception of the value of network video extends much further than simply improving security and surveillance within retail stores. The report reveals a high level of awareness and interest amongst retailers in using network video for non security applications.

"The report clearly shows that many retailers are keen to maximise their investment in their surveillance system so that it can be used as more than just a loss prevention tool", noted Professor Joshua Bamfield from the CRR.

As the majority of consumer purchasing decisions are made on impulse while browsing in store, applications providing real time in store business intelligence, empower retailers to respond more effectively to changes in consumer demand and operational issues, which ultimately impact the bottom line.

Awareness of non-security and loss prevention uses of network video



By leveraging network video for cross-functional purposes, retailers can gather real time statistics to improve store layouts, optimise success of merchandising displays, enhance employee efficiency, improve customer service and measure customer traffic and conversion rates.

A single network camera deployed for loss prevention, can simultaneously be utilised by marketing, operations and merchandising. Achieving cross department collaboration and shared deployment costs, will maximise the ROI on any spend on video surveillance equipment.

> **Measure store performance:** A network based people counter provides instant access to real time and historic customer traffic data. Retailers can measure traffic levels on an hourly basis across multiple stores to gauge store performance, evaluate the success of promotional campaigns and improve customer service by optimising staff deployment to match customer traffic.

Based on an open platform, retailers can also track customer behaviour using analytics integrated with other network data sources such as Point of Sale (POS) transactions, allowing retailers to compare traffic and conversion rates not only between stores, but down to aisle and display location.

- > **Evaluate display strategies:** Gathering visual intelligence on customer behaviour is crucial to optimising sales. Maximise the impact of network video deployed for general surveillance, by feeding additional video streams from a single camera into customer behaviour analysis tools.

Retailers can gather statistics relating to customer dwell time of in store advertising or digital signage and track customer flow. Capturing intelligence on customer response to end caps, displays and promotions, allows retailers to optimise display and marketing strategies and drive sales.

An integrated network video system merging analytic data from multiple sources can also compare traffic flow and sales statistics between stores with different end cap displays. An additional benefit is video observation of customer interactions with different displays or product placements, to visually analyze factors that affect a customers purchasing decision.

- > **Optimize store layouts:** A network video system can also be applied to heat map analytics to gather valuable input on improving store design. Visualise hot zones with the most customer activity to maximise in store promotional campaigns and identify cold zones to determine how store layout changes can positively impact customer traffic flow.

Network based video intelligence allows retailers to immediately evaluate the impact of floor change layouts on customer flow and sales, by combining mapped traffic patterns with POS data.

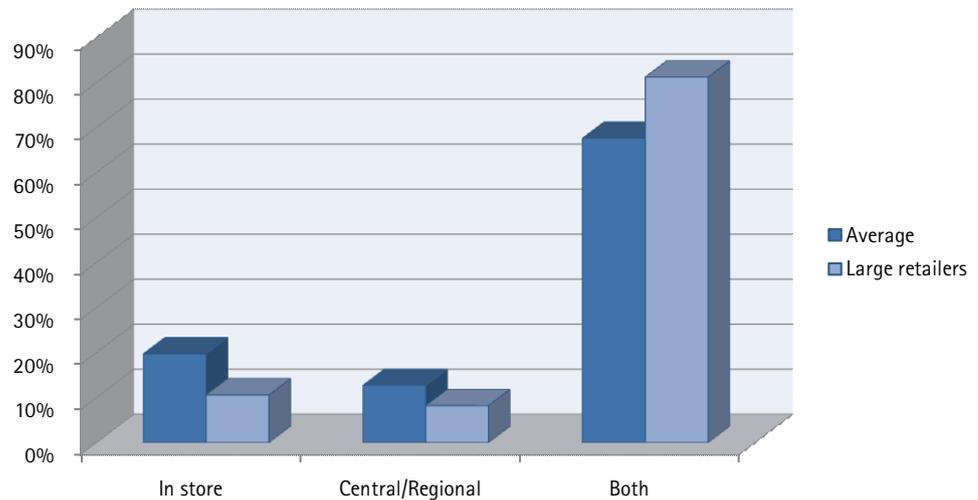
- > **Enhance the customer experience:** An integrated network video intelligence platform can generate real time alerts when queues exceed predefined thresholds or flag up lack of on-shelf product availability. Real time resolution through opening additional checkout lanes and stock replenishment will enhance customer experience and improve customer service levels.
- > **Increase operational efficiency:** With anywhere, anytime access to a network video system, retailers can gain valuable business insights into consumer and store activity to streamline operational processes and improve customer responsiveness. For example, remote access to live and recorded video to demonstrate good working practice and customer service, can benefit a retailer's training initiatives and improve employee efficiency.

5. Access to live video – anywhere, anytime

One of the major drawbacks of analogue CCTV, which by its very definition is closed circuit, is the limitations imposed on remote video access to monitor store activity and security. An inherent benefit of network video is the ability to gain authorised access to live or recorded video from any network location – including HQ, regional offices or even via mobile devices.

According to the survey overall 68% of UK retailers require access to video both in store and remotely, a view expressed more strongly by large retailers with 81% of retail chains with 100 stores or more requiring remote access to video.

Access to video surveillance



The wide scale availability of cost effective broadband connectivity and modern efficient video compression techniques such as H264, have removed deployment obstacles making it practical and affordable for retailers to fully exploit one of the major benefits of network video.

The driving force behind retailers demanding wider organisational access to video, may stem from the innumerable benefits it affords retailers in terms of enabling cross functional applications to improve efficiency, enhance security and increase the value of video within a retail chain.

- > **Improve employee efficiency:** Merchandising departments based centrally in HQ can now access network video to remotely audit store compliance with a marketing promotion and instantly correct display guidelines that have not been adhered to.

Negating the requirement for staff to visit each store to monitor compliance will significantly reduce travel time and costs, boosting operational efficiency, employee productivity and positively impact corporate social responsibility (CSR) goals through reducing a retailer's carbon footprint.

- > **HSE Compliance:** Lone workers operating in retail outlets are more vulnerable to threats and physical assaults than others in the work force, with extended trading hours increasing the exposure to risk. An in-store network based video system invested in for loss prevention, could simultaneously provide instant video verification of a panic alarm to any networked or mobile device, thereby strengthening a retailers duty of care to their employee's and reinforcing HSE (Health & Safety Executive) directive compliance.

> **Future-proof:** Systems already exist today to distribute synchronised low quality video and POS data off site for analysis of suspicious transactions, while retaining the ability to remotely interrogate high quality local video of a flagged incident. This centralised approach releases in store personnel to focus on improving the customer experience.

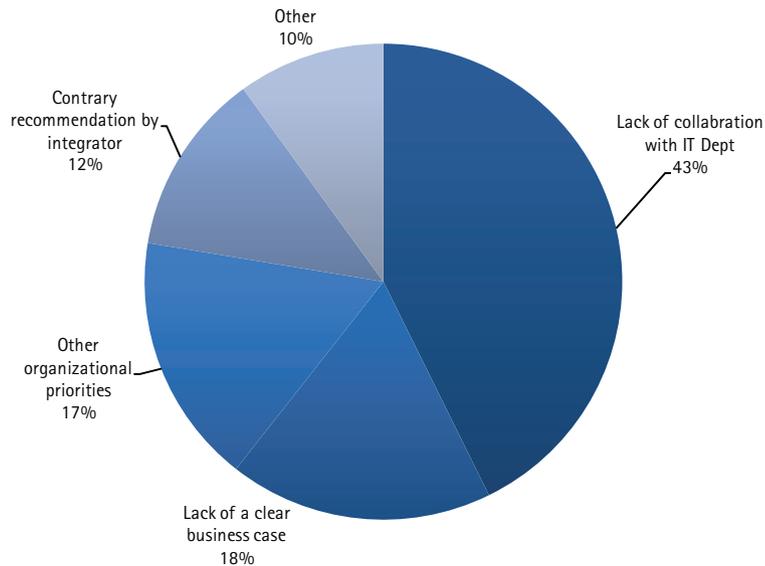
Retailers contemplating a cloud computing model for applications that analyze video, are best served by implementing network video. Investment in network video surveillance today will ease transition into cloud based retail applications in the future.

6. Eliminating barriers to adoption

While retailers are beginning to understand the business benefits network video can offer, there still remain a number of obstacles to overcome to ensure wide scale adoption of the technology.

According to UK retailers, lack of collaboration with the IT department and lack of a clear business case represent two significant barriers to adoption.

Obstacles to deploying network video



Building a business case

Organisations should envisage network video as a cross functional application, capable of loss prevention, improving employee productivity and customer service, optimising store layouts and product placement and achieving an increase in overall operational efficiency.

Retailers who can succeed in securing cross department collaboration will benefit from sharing deployments costs across marketing, operations, merchandising and loss prevention. From this perspective it is much easier to realise a clear business case for migrating to network video.

IT department collaboration

Retailers already use IT strategically to streamline business processes and optimise profits, with POS and other store systems already networked today. By adopting network video as a real time visual intelligence tool to empower operational decisions, the logical step would be for IT to manage video as yet another networked application which provides strategic business value.

As IT departments are responsible for managing business critical applications over the store network, it may explain their reluctance to embrace network based video, a technology often perceived as bandwidth intensive. However emerging trends in network video can significantly reduce the overhead on network traffic, which may alleviate these concerns and dispel the misconceptions associated with deploying network video.

- > **Manageable video:** H264 compression is a new global compression standard supporting the explosive growth of online digital video e.g YouTube and used extensively in devices such as high definition Blu-Ray DVD's and 3G mobile devices. Network video products supporting H264 can reduce bandwidth and storage utilisation by up to 80%, relative to legacy compression formats used within many existing retail surveillance installations.

A significant reduction in storage costs, manageable video over the in store network, viability of remote video access over the corporate wide area network and enabling practical deployment of HDTV resolution cameras, are some of the major benefits afforded by H264, which may serve to alleviate the concerns expressed by IT departments.

- > **Distributed Intelligence:** Advanced network cameras and encoders, with embedded motion detection and alarm handling, can be configured to only transmit video based upon predefined rules. Coupled with the ability to restrict how much bandwidth a camera or encoder generates, IT departments are empowered with powerful tools to manage video over the network.

Network cameras, unlike their analogue counterparts, also allow compatible third party applications such as people counting and heat maps to reside within the camera. Analytic processing at the edge reduces server hardware investment costs and minimises network traffic, making the solution infinitely scalable.

- > **Maximise ROI on IT equipment hardware spend:** Implementing network cameras can leverage existing IT infrastructure (servers, POE switches, cabling) and comply with existing IT authentication and data security policies, ensuring seamless integration and network management. Adopting network video will increase the overall ROI on existing IT hardware and reduce the total cost of ownership of a new system.
- > **PCI compliance:** The payment card industry data security standard (PCI DSS) is a set of requirements retailers have to adhere to, ensuring the integrity of credit card transactional data processed, transmitted and stored over the data network.

Network video can assist IT departments in enforcing physical and logical security measures to strengthen PCI DSS compliance and mitigate risk.

- Network cameras deployed above POS terminals with embedded privacy masking can be configured to mask out customer credit card pin code entry and reinforce PCI data security compliance.
- Network cameras monitoring servers hosting transactional data provides visual evidence of all server room access, with real time e-mail alarm notification to flag any suspicious activity.

7. About the report

The report entitled 'Retail use and experience of CCTV in the UK' was conducted by the Centre of Retail Research, Nottingham www.retailresearch.org/ and commissioned by Axis Communications.

The report was based on the opinions of 363 respondents, ranging from single-store retailers to those with more than 400 outlets. Retailers who responded to the questionnaire had a combined total of 29,240 stores (about 9 per cent of the UK's retail outlets).

The breakdown of respondents: 60 per cent were non-food retailers, 40 per cent were food retailers.

About Axis Communications

Axis is an IT company offering network video solutions for professional installations. The company is the global market leader in network video, driving the ongoing shift from analog to digital video surveillance. Axis products and solutions focus on security surveillance and remote monitoring, and are based on innovative, open technology platforms.

Axis is a Swedish-based company, operating worldwide with offices in more than 20 countries and cooperating with partners in more than 70 countries. Founded in 1984, Axis is listed on the NASDAQ OMX Stockholm under the ticker AXIS. For more information about Axis, please visit our website at www.axis.com.