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Leveraging AIoT video technology to improve retail efficiency

Artificial intelligence combined with Internet-of-Things devices offer new ways to improve operations.

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With retailers facing ever-increasing competition from both brick-and-mortar stores and online merchants, it's critical that they take every step available to gain an edge.

According to ecommerce platform provider Shopify, some of the challenges retailers constantly strive to address include striking the right balance when it comes to inventory levels, delivering a personalized shopping experience, and knowing how and where to automate to improve operational efficiency and gain a competitive edge. Ensuring that stores are clean and organized and marketing materials are displayed correctly are key challenges as well.

A study by IHL Group, for example, claims that out-of-stock items cost the average retailer 4.1% in lost revenue. Another study, a 2022 survey of 1,500 shoppers by technology company Service Channel, found that 64% said they had "walked out of a store because of its physical appearance or disorganization." In highly competitive markets, exceptional customer service and efficient operations can become key differentiators. Additionally, engaging with customers on a personal level and addressing their needs and preferences fosters a sense of loyalty. When customers feel valued and understood, they are more likely to return to a retailer for future purchases, even if competitors offer similar products or prices. According to a 2022 study by software company Salesforce, 88% of customers say the experience a company provides is as important as its product or services.

Knowing how to improve customer service and increase engagement, though, can be a challenge. Store managers already have plenty to keep them occupied, and it may be difficult to know what steps to take to accomplish those goals. Fortunately, there are emerging AIoT video technologies that can provide operational insights, help improve efficiency, and boost the shopping experience.

The convergence of Artificial Intelligence (AI) and the Internet of Things (IoT), known as AIoT, yields intelligent video systems that catalyze data-driven decisions and actionable business insights, ultimately generating

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value for retailers. By leveraging high-definition cameras and AI analytics, AIoT powered video systems offer features like remote inspection, crowd density monitoring, heat mapping for popular items, and intelligent parking solutions. These features not only streamline store operations but also tailor the shopping environment to consumer preferences, ultimately contributing to higher satisfaction and loyalty.

Boost Operational Efficiency and Save Costs with Remote Audit Solutions

Technology provider Hikvision is aiding in those efforts with AIoT solutions that enhance centralized management and intelligent analytics to help achieve more efficient operations.

Standardize and streamline store inspection management

The remote audit solution, for example, leverages CCTV cameras to help ensure procedure standardization across branches, centralized management, streamlined workflow, easy remote inspection and device maintenance, and efficient record keeping.

With the solution, store inspection standards can be uniformly issued and executed. The solution automatically generates comprehensive and intuitive

report statistics that can be used to improve operations, while remote inspection saves both time and transportation costs.

Examples of issues that can be audited via the Hikvision solution include product placement inspection, daily work inspection and environment inspection to insure adherence to company standards. The remote audit solution can reduce annual costs by as much as 40% compared with traditional on-site inspections.

Adaptable applications tailored for multiple scenarios

In restaurants, for example, maintaining impeccable hygiene standards in the kitchen and dining areas is a constant battle. The risk of contamination can result in customer dissatisfaction, health code violations, and potential shutdowns. Monitoring these standards manually is a hard and sometimes subjective process that can lead to inconsistency in assessments. Hikvision's solution can help assess the hygiene of the kitchen and the meals being prepared in real time and remotely. In the dining room, it can be used to inspect the cleanliness level of the dining area and tables. It can verify that staff is adhering to safety and brand protocols, ensuring they are wearing required masks, caps, and uniforms, while at the same time evaluating overall service delivery.

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In convenience stores, correctly implementing marketing activities is vital for promotions to reach customers effectively. Faulty communication of promotions at the counter or improper display of in-store and outdoor promotional posters can lead to missed sales opportunities. The Hikvision remote audit solution can check the extent to which marketing activities are effectively communicated; for example, whether promotional activities at the counter are well propagated or the in-store and outdoor promotional posters are displayed properly. It can also be used to oversee equipment management, ensuring the satisfactory operation of product cabinets, beverage cabinets, coffee machines, refrigeration units and more. The solution can also aid in managing product inventory by actively monitoring whether there are any out-of-stock items in the product/beverage cabinets and verifying the adequacy of product supply.

For all retailers, inventory shrinkage due to fraud, or other errors is a constant concern, leading to significant revenue loss. And Hikvision's solution can help minimize that shrinkage. With its security cameras, Hikvision enables video verification of alarms triggered by Electronic Article Surveillance (EAS) systems or intrusion alarm systems. Hikvision supports POS data overlay on video feeds, providing transaction details for convenient searches, making it easier to resolve disputes and reduce fraud. Hikvision also offers thermal cameras for early detection of fire risks. Those cameras also work for high-accuracy intrusion detection.

Enhancing the Customer Experience with In-Store Business Intelligence and Parking Lot Solutions

For retail customer experience enhancement, Hikvision provides in-store business intelligence and parking lot solutions to chart a new course in customer satisfaction.

Track, optimize and grow store performance with business insights

Hikvision's in-store business intelligence solution can assist retailers to record and analyze customer traffic both inside and outside the store, including walk-in-rate analysis, traffic analysis, heat map, area dwell rates and queue management.

For example, knowing how many customers visit a store and what areas they tend to visit can help optimize merchandising, ensure proper staffing levels, and reduce wait times. Being able to identify long queues at the checkout can help speed the process of opening new checkout registers, reducing abandoned purchases.

By formulating patterns in customer traffic and digitalizing consumer interests, retailers can streamline their operations, staff more efficiently and improve floor planning. Analysis of key indices and process monitoring can lead to efficient decision-making, improved ROI, and ultimately, better management.

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Make parking management simple, smart, and stress-free

In another application, Hikvision offers a parking lot solution that helps provide smooth entry and exit management with authorized license plates to boost access efficiency. Advanced deep learning technology achieves an industry-leading algorithm effect to bring convenience to users. For drivers, improving parking efficiency brings a better experience. For parking admin, high efficiency, and easy configuration and maintenance helps reduce operating costs, while diversified charging and operation analysis helps improve turnover. Operators can integrate multiple vehicle authentication and parking fee rules.

For indoor parking facilities, Hikvision provides an intuitive indicator for efficient parking, taking data from parking guidance cameras to show the numbers and locations of all available spaces on indoor display screens. It gives drivers further direction on how to get to free spaces, making navigating large car parks less stressful.

Leveraging the benefits of AIoT

AIoT excels in analyzing massive amounts of information generated by IoT devices, leading to more accurate insights and predictions, benefiting industries like retail. AIoT enables smarter decision-making by providing real-time, actionable insights, and automates routine tasks, boosting efficiency and reducing human error.

Improved customer service and increased customer engagement achieved with AIoT technologies can offer strategic advantages for retailers and other business operators that can lead to revenue growth and a stronger brand reputation. Hikvision's solution caters to businesses big and small – from convenience stores to spacious shopping malls – that share the need for smarter operations, better security, and more insightful business.

Australian hotels optimize operation efficiency with centralized management and business intelligence

An Australian hotel group faced rigorous compliance demands from Queensland's Office of Liquor and Gaming Regulation (OLGR), including comprehensive CCTV coverage and stringent footage storage requirements. With over 150+ bottle shops and venues to monitor, the decentralized approach to security footage management was costly and labor-intensive, requiring constant manual inspection and maintenance across each location.

Recognizing the need for a smarter approach, the hotel group implemented Hikvision's centralized video security system, transforming their operations. The benefits were immediate and significant:

- Centralized Management: By aggregating video security operations into a single control center, the group eliminated the need for individual site checks, saving time and reducing labor costs,

and the centralized system enabled managers to remotely inspect and maintain cameras across all venues with ease, enhancing overall productivity.

- Intelligent Insights: Hikvision's system didn't only bolster security—it paved the way for advanced video analytics. Through heat mapping and people counting, the hotel group tapped into valuable business intelligence, uncovering insights such as high-traffic areas and peak times, which informed strategic decisions about product placement and marketing.

By investing in Hikvision's technology, the hotel group not only met OLGR compliance with ease but also gained a competitive edge through operational optimization and actionable business intelligence. This strategic initiative has set a benchmark for security and business savvy in the hospitality industry.

ABOUT THE SPONSOR:

Hikvision is committed to serving various industries through its cutting-edge technologies of machine perception, artificial intelligence, and big data, leading the future of AIoT.

Hikvision provides integrated security solutions powered by AI technology to support end-users with new applications and possibilities for safety management and business intelligence. Over the past several years, Hikvision has deepened knowledge and experience in meeting customer needs in various vertical markets with professional and intelligent solutions, including smart city, transportation, retail, logistics, energy, and education.

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