Delivering smart retail experience

4 ways IoT is transforming asset management

Imagine a retail store that can adjust lighting according to the time of the day or weather conditions, and ramp air conditioning up/down depending on the number of people. What if the store can also monitor and proactively issue maintenance alerts on its assets such as refrigerators, security cameras, and billing systems to reduce costs and downtime? Sounds like the automated house from the movie Smart House? We agree, but this experience is closer to reality than you think.

The Internet of Things (IoT) is reinventing retail to enable seamless store operations, centralized monitoring, and proactive maintenance of assets. According to McKinsey, the potential economic impact of IoT in retail environments will range from USD 410 billion to 1.2 trillion per year by 2025[i]. While early IoT use cases in retail focused more on supply chain and operational efficiencies, retailers are now turning to IoT to help deliver an exceptional customer experience. 77% of retailers believe that IoT solutions help improve customer experience and service delivery[ii]. This is where the concept of a smart retail store comes in.

Let's delve deeper into how a smart retail store enables optimum equipment and IT infrastructure health, robust safety and security, indoor analytics, and overall environment monitoring for superior business and customer outcomes.

IoT and retail asset management

Retail stores rely on an array of physical devices and online systems working hand in hand. Their overall accuracy, uptime, and inter-operability is essential to running the business smoothly. For instance, a grocery retail outlet must ensure all systems such as billing, lighting, generators, HVAC, security cameras, refrigeration units, and fire alarms are working fine before throwing open its doors to customers every day. A snag in any of these critical assets can lead to a host of disastrous consequences – from lost revenue and customers to tarnished reputation, and even regulatory penalties.

A centralized IoT platform can help retailers go from reactive to proactive - in operations, maintenance practices as well as customer service and support.

Imagine if a retail outlet develops a snag in its billing software and IT starts working to fix it after the fault is reported. The delay would lead to longer checkout times and mounting customer dissatisfaction. Some customers may even abandon their carts and move on, never to return. Statistics reveal that a point-of-sale (POS) interruption can cause retail businesses to suffer on average a 4% to 5% revenue loss every minute[iii]. That's not all - one in three shoppers will likely abandon their carts and leave the store, if forced to wait for more than five minutes[iv].

So, what exactly are the challenges retailers face when it comes to asset management?

- **Siloed operations:** Lack of information on multiple assets spread across disparate retail store locations, leads to cluttered operations and fulfillment delays. Data silos hinder effective asset and operational management, especially given the need to scale on demand (holiday/ festive season).

- **Legacy IT systems:** Systems that were designed for brick-and-mortar retail operations fall short in today's digital scenario where retailers need real-time information on customer preferences, inventory, and store assets and their health, to maintain a competitive edge.

- **Reactive maintenance practices and workforce inefficiency:** Lack of visibility into asset health and functioning leaves retailers little room to establish preventive and proactive maintenance policies. Field engineers often make multiple site visits to diagnose a fault and schedule repairs, and spend a major chunk of their time validating information. This limits retailers' ability to collect and analyze data to improve resource allocation and efficiency.

How can IoT help retailers manage their assets better to improve store operations and monitoring to eventually enhance customer experience? The answer lies in deploying a centralized IoT platform.

In today's age of hypercompetitive retail and ever-demanding customers, always-on equipment (both IT and non IT) is a critical enabler to business success.

Smart retail: 'Track and react' in real-time with IoT

To improve asset performance and management, retailers need to know exactly what they have and where, how it is performing, and when it needs servicing. The goal is to help both people and machines react to issues faster and at a lower cost. IoT has the power to optimize operations and help retail employees do their job better in the short term, while transforming the entire retail organization over the long run.

Here are four key applications of IoT in smart retail:

#1 Food infrastructure: Malfunctioning of refrigerators in retail stores leads to spoilage of food and other perishable products, decreasing their shelf life. Food spoilage can occur even with slight changes in humidity. Constantly running refrigerators can be noisy and consume high electricity, leading to high operating costs. Similarly, malfunctioning vending machines (dispensing coffee, soda and frozen foods), impact customer experience. IoT-enabled refrigeration systems and vending machines help retailers monitor real-time asset health, temperature/humidity, and product status to proactively mitigate food spoilage, sudden breakdown of machines, and high cost and time of repairs.

#2 Physical safety and security: IP cameras, sensors for door contact/glass breakage, fire alarm systems, RFID sensors, and access control readers are all important components of a surveillance system. Malfunctioning of these critical assets can result in loss of video feeds, and chances of theft/break-ins/unauthorized access. They can even result in fire hazards from exposed lighting/computer wires and dangers related to improper chemical/ combustible materials storage. IoT-enabled RFID tags and readers help track the movement of merchandise and products within the store, reducing the chances of theft and shoplifting. Fire alarm systems provide early notification to protect life and property, while access control systems manage people-access to protect people, property and store information without disrupting business. Kroger Co., America's largest supermarket chain leverages IoT for a variety of applications – from smart lighting to intelligent Bluetooth-enabled shelves, smart tags on products, security alerts, etc.[v]

#3 IT infrastructure: Effective functioning of POS/display systems, digital signage, Wi-Fi access points, workstations, printers, network switches, and routers is critical to ensuring smooth retail operations. POS system failure delays the checkout process and leads to loss of information regarding in-store cash, customer data, etc. Malfunctioning of display systems can

negatively impact the marketing process, while Wi-Fi and network connectivity issues hinder customer as well as employee experience. IoT-enabled infrastructure equipment can ensure real-time information of all assets to prevent snags, unexpected outages, and maintain seamless connectivity at all times.

#4 Utilities infrastructure: This includes HVAC systems (heat pumps or gas heating/electric cooling packages), energy metering, UPS, and water/gas. Malfunctioning HVAC systems can lead to excessive or under cooling/ heating and even water leakage, hampering customer experience. Similarly, an ineffective UPS can cause power outages, shutting down critical store equipment and affecting operations. Outdated energy metering systems lead to energy leakage, leading to high overhead costs. IoT-enabled utilities infrastructure can sense performance inefficiencies, and impending structural breakdown to ensure optimal asset health and functioning, enable preventive maintenance, and reduce operational costs. Kroger's smart energy metering solution helped cut the retailer's cumulative electricity consumption by 40% across its 2,800 stores, earning it the 2018 Energy Star Partner of the Year Award from the U.S. Environmental Protection Agency[vi].

Benefits of IoT applications for retailers come from three major areas:

- **Cost savings:** Less rework, automated contact center tasks, minimized asset breakdowns, etc.)

- **Cost avoidance:** Reduced unplanned repairs/spares replenishment costs, avoiding excess stocking/utilization of resources, energy, utilities, etc.

- **Revenue enhancement:** Fewer stock outages, more equipment uptime, revenue boost due to digital consumer engagement, targeted promotions, location-based services, spot offers and so on.

Getting started with smart retail

Should retailers build their own IoT applications or buy from IoT solution vendors? Building in-house is obviously costlier in terms of time and effort while many IoT vendor solutions are unable to integrate with retailers' internal IT and non-IT systems. What retailers need is end-to-end management of their retail IoT platform and seamless integration with ERP, IT systems as well as building management systems, security and POS systems.

Unsurprisingly, forward-thinking retailers are partnering with experienced IoT solution providers to avoid typical pitfalls. The right fit partner can not only assess the retailer's current readiness, recommend the right solutions and roadmap, but also implement, manage, and monitor IoT applications on an ongoing basis for continued optimization. A technology partner that is experienced in the retail space also brings additional advantages through industry knowledge, best practices, and learnings across clients.
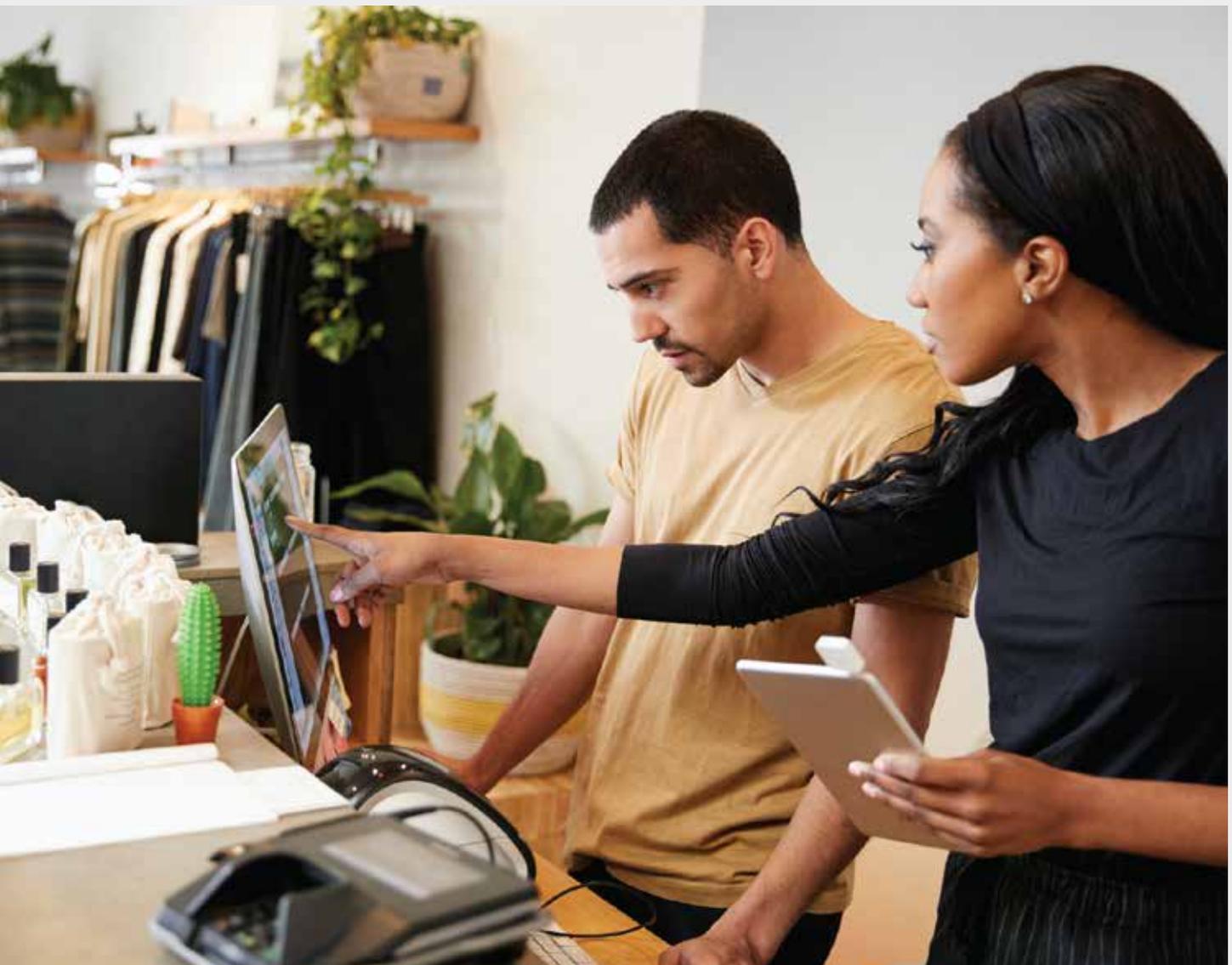
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