

INNOVATION IN THE NEW ERA OF RETAIL

An overview of the latest trends
and transitions in the retail industry



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INTRODUCTION

The retail industry thrives on a retail store's capacity to ensure customer satisfaction and engagement.

Retail leaders can understand the pivotal role that these factors play in driving the growth of the enterprise. From personalized recommendations to superior customer service, numerous strategies can be employed to convert sales. Retailers of the future must adopt a diverse ecosystem of next-generation technologies to enable interaction and proactively engage the end customer. Retailers can bolster their operational efficacy by establishing a resilient technological infrastructure.

This foundation can, in turn, expand the retail business paradigm, fostering additional revenue streams, broadening customer interaction points, and acquiring more profound insights into customer behavior to deliver an elevated retail experience.

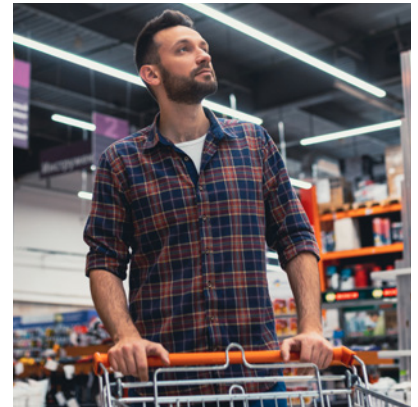
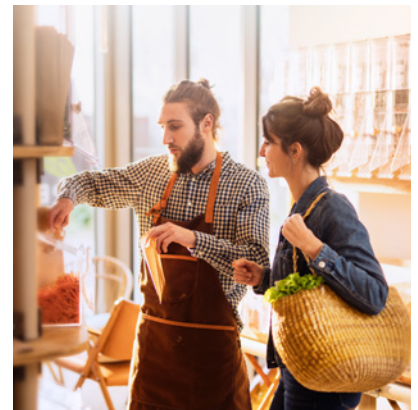
This whitepaper aims to offer valuable insights to stakeholders within the global retail industry, encompassing in-store retailers, as well as technology and solutions providers dedicated to enhancing retail operations worldwide.

Through this whitepaper, Honeywell and MarketsandMarkets provide a brief overview, including the latest trends and transitions in the retail industry. The content of this whitepaper also delivers insights on use cases, such as shopper assistance, asset tracking and optimization, labeling and pricing management, which offer growth opportunities to retail solutions providers in developing advanced and customized offerings. Also highlighted are the adoption of emerging technologies helpful

for solutions offered by retail solution providers, such as Next Generation Connectivity featuring 5G, Artificial Intelligence (AI), Computer Vision, and RFID to meet the service expectations of the end-customers and streamline in-store retail operations.

Honeywell Industrial Automation (Honeywell IA) can help retailers in a variety of ways, from improving operational efficiency to enhancing customer experience.

For example, Honeywell IA's mobile computers can help store associates track inventory, check prices, and place orders more quickly and easily. Honeywell IA also offers a variety of other products and services that can benefit retailers, such as barcode scanners, printers, and voice-enabled software. These products and services can help to streamline operations, improve accuracy, and boost productivity.



EXECUTIVE SUMMARY

The retail landscape is undergoing a seismic shift, driven by the imperative to retain customers, improve loss prevention, optimize operations, and protect data. This whitepaper explores the transformative power of technology in addressing these critical challenges.

By embracing new technological trends, such as personalized customer experiences (in-store assistance, curbside pickup), workforce automation (wearable tech, voice recognition), and intelligent operations (AI, device analytics, supply chain visibility), retailers can tap into a new era of efficiency, engagement, and security.

MAXIMIZING SHOPPER CONVENIENCE

Personalized, multi-channel experiences are no longer an exception, they're an expectation. In-store shopper assistance powered by AI and wearable technology can personalize product recommendations and offer real-time guidance, fostering deeper customer engagement. Curbside pickup services, fueled by intelligent operations and data analytics, provide seamless convenience and help convert sales.

MINIMIZING RETAIL LOSSES

Digitalization empowers retailers to combat retail loss through advanced asset tracking and optimization.

Intelligent systems can monitor inventory levels, detect anomalies, and prevent theft, leading to significant cost savings.

ENHANCING EMPLOYEE EXPERIENCE

Workforce automation, enabled by voice recognition and wearable

technology, frees employees from mundane tasks, improving their experience and minimizing churn.

SECURING THE FUTURE

Data security and privacy are paramount in today's digital age. This paper emphasizes the importance of robust data governance and compliance measures to ensure customer trust and build a sustainable competitive advantage.

DELIVERING SUSTAINABLE SOLUTIONS

Customers have become more conscious of the impact of consumption and are being more considerate with their purchase choices. Sustainable solutions play a crucial role in meeting environmental goals while enhancing operational efficiency. Moreover, by integrating automation with sustainability, retailers are able to build resilient, future-ready operations that align with both business and environmental goals.

UNLOCKING VALUE THROUGH USE CASES

From personalized shopper assistance to automated labeling and pricing management, the paper showcases how digitalization translates into tangible value across various in-store retail functions.

This whitepaper delves deeper into specific use cases like shopper assistance, asset tracking, labeling and pricing management, and salesfloor order fulfillment. By implementing these digital solutions, retailers can unlock operational excellence, forge deeper customer connections, and safeguard valuable data, paving the way for a thriving future in the ever-evolving retail landscape. Retail businesses are constantly striving to keep up with the latest technological advancements, and Honeywell IA solutions provide a catalyst for achieving that goal. With their operational expertise and advanced technology, Honeywell IA solutions seamlessly integrate digitalization into the retail landscape, revolutionizing the way businesses operate and interact with customers. Their mobile computers and scanners streamline workflows, automate tasks, and boost data visibility, freeing employees from tedious processes and allowing them to focus on customer engagement. Advanced solutions like RFID-powered inventory management and voice-picking systems further optimize stock control and order fulfillment, while their robust communication tools enhance collaboration and agility.

Essentially, Honeywell IA provides retailers with the tools to navigate the digital arena with confidence, resulting in a frictionless, convenient shopping experience.

STRATEGIC IMPERATIVES FOR IN-STORE RETAIL

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Changing consumer behavior, technological advancement, controlling the impact of inflation, and the competitive landscape are some of the motivating factors behind the retail industry's transformational efforts.

Digitalization in the retail sector encompasses adopting digital platforms, data-driven insights, automation, and innovative technologies to enhance customer experiences, streamline operations, and drive business growth.

PERSONALIZED CUSTOMER EXPERIENCE

Customers now demand a more personalized and convenient shopping experience, having the choice to shop online or in-store with easy returns and exchanges.

According to the UK Customer Retention Benchmark report by MoEngage, over

59%

of the surveyed retailers' average customer retention rates are less than 40%, while only 2% have a retention rate above 80%. The report also shows that 41% of retail and ecommerce brands polled now experience customer churn rates of 51-60% or higher, while

25%

see a 31-40% churn and 14% witness a churn rate between 61-70%¹.

In a competitive market such as retail, it is also difficult to maintain brand loyalty, where customers are highly likely to compare prices before making a purchase.

Consequently, retailers must find new ways to reach customers, blurring the lines between online and physical worlds by empowering store associates with tools like mobility devices, minimizing the frustrating disconnect shoppers and associates face in poorly unified experiences. Honeywell IA mobile computers can help retail employees have better visibility around inventory to support customer inquiries and even allow them to place orders online and return items with ease.

LOSS PREVENTION

In-store retailers face several challenges related to retail loss that can significantly impact their profitability and operations. In addition to shoplifting, theft, and fraud, mistakes in inventory management and pricing can also lead to retail loss. In 2023, retailers experienced significant losses due to theft, amounting to USD 121.6 billion. This troubling trend is projected to escalate, with shoplifting potentially costing retailers over \$150 billion by 2026².

Inaccurate recording of stock movements, pricing discrepancies, or data entry errors are common mistakes that result in significant losses over time, which retailers need to reduce in order to improve their profitability.

Retailers can reduce retail loss owing to human factors by introducing digitalization to standardize checklists and tasks and requiring employees

to submit daily reports, increasing employee performance and efficiency. A range of Honeywell IA's offerings, including Voice Automated Solutions, Mobile Computers, and Scanners, can help reduce human errors in in-store operations, reducing retail loss-related issues. In addition, Honeywell IA's RFID technology allows retailers to keep better track of inventory movement, especially when paired with sensors at exit points that can trigger alarms to notify employees or on-site security.

EMPLOYEE EXPERIENCE

The retail industry has a high turnover rate, resulting in an unprecedented training expense and inefficiencies while workers get up to speed. Retailers need to provide a positive work environment to retain qualified employees. According to PwC, companies that invest in and deliver superior experiences to both consumers and employees are able to charge a premium of as much as 16% for their products and services. And MIT researchers found that companies in the top quartile of employee experience developed more successful innovations, deriving twice the amount of revenues from their innovations as did those in the bottom quartile — and their industry-adjusted Net Promoter Scores (NPS) were twice as high.³

Every five seconds lost to picking up, scanning, and putting down a handheld scanner adds up during a busy workday, especially for tasks such as picking,

sorting, putting away, and packing that involve frequent scans. This inefficient movement becomes a significant time drain—one that wearable scanners can eliminate. By keeping data capture at one's fingertips, wearable scanners let people work hands-free, boosting productivity and efficiency while freeing up hands for other crucial tasks. This also helps reduce worker fatigue, thereby increasing productivity.

Imagine how much easier work would be if bulky scanners were replaced with a streamlined workflow, maximizing the workday. Wearable scanners have become an extension of workers, seamlessly integrating data capture into natural movements, saving time, effort, and money. Honeywell IA has developed a diverse suite of wearable Bluetooth barcode scanners that are

easy to use, boost worker efficiency, and are rugged enough to manage whatever environment they are deployed in.

“At Honeywell, our solutions help retailers resolve their most complex challenges, our technology helps retailers around that world achieve higher accuracy and efficiency, resulting in better customer experience. We are committed towards investing in advanced technologies, we see AI playing a huge role in dealing with retail shrinkage and overall inventory optimization.”

TAYLOR SMITH
CMO,
HONEYWELL PRODUCTIVITY SOLUTIONS

DATA SECURITY AND PRIVACY

Data security and privacy have been a key concern for retailers as well as their customers for several years. Retailers have been a major target for cyberattacks and related security threats over the past few years. With 24% of all cyberattacks targeting retailers, cybersecurity has become a critical concern for the industry. According to the Harvard Business Review, a single data breach can lead to an average 7.5% decline in the stock prices of publicly traded companies ⁴. IBM's 2024 “Cost of a Data Breach Report” shows retail breach costs rose 18% to USD 3.48 million, up from USD 2.96 million in 2023. Currently, 32% of retailers leverage security AI and automation solutions, an increase from 25%, resulting in an average cost savings of USD 1.9 million. ⁵.

Retailers face challenges in adapting to changing customer behavior, creating convenient shopping experiences, curbing retail shrinkage, safeguarding data security and privacy, and enhancing employee experience, which are undeniably complex and multifaceted. However, addressing these challenges requires a strategic blend of innovative technology adoption, employee training, robust data protection measures, and a customer-centric approach. By adopting pioneering solutions, fostering a culture of adaptability, and placing paramount importance on customer trust, retailers can navigate these obstacles, forge stronger connections with their customers, fortify their brands, and ultimately become the leader in an ever-evolving marketplace.



2025, retail will be transformed by key trends, including omnichannel integration, IoT, and cloud solutions, creating a seamless shopping experience across online and offline channels.

Customers will move effortlessly between browsing, pickup, and returns across mobile, web, and in-store platforms. Technologies like IoT, viewed as essential by 83% of retail leaders, will streamline inventory, personalize shopping, and boost customer engagement. Together with advancements in shopper convenience, workforce automation, AI, supply chain visibility, and sustainability, these innovations are shaping the future of retail.

SHOPPER CONVENIENCE

Customers expect easy, convenient experiences that are tailored to their personal shopping habits and preferences. The retail industry has evolved significantly over the years, driven by technological advancements and changing customer expectations. The emphasis on convenience is not limited to purchasing, but spans the whole customer journey, including customer support, delivery and returns.

In-store shopper assistance plays a crucial role in the overall retail experience, providing invaluable support to customers within the physical retail spaces. Customers can receive real-time assistance,

clarifications, and product information, enhancing their shopping experience. The 2024 EY Future Consumer Index reports that 57% of shoppers prefer to see and touch items before buying, 68% seek expert advice on high-value purchases, and 61% would visit stores for promotions unavailable online⁶. Additionally, SPAR Group's Shopper Insights Survey shows that over 80% of respondents prefer purchasing groceries in-store⁷.

Over the last few years, retailers have been keen to deploy wearable solutions and applications to enhance their in-store assistance capabilities. Employees can provide up-to-date stock information and meet customer requirements in a retail environment by relying on Honeywell IA mobile and wearable computer solutions.

Curbside pickup services have grown in popularity, offering a blend of online convenience and immediate fulfillment. Implementing technologies such as RFID for easy order identification during curbside pickups can ensure a smooth and contactless experience. According to 2024 E-commerce merchant report by FedEx, 18% of consumers prefer curbside pickup while 19% opt for in-store pick-up⁸. A study by PYMNTS

in 2023 also revealed that, curbside and in-store pickup usage increased by 37% among US shoppers, who are increasingly choosing immediate pickup over having to pay delivery fees for online grocery and retail purchases⁹. Retailers are also keen to deploy solutions enabling them to offer these services. For example, two quick service restaurants (QSR), with over 500 stores in America, have launched GPS-enabled curbside pickup services that will notify store staff upon customer arrival.

Shopper assistance and services, such as curbside pickup, offers numerous advantages for retailers, such as:

- Enhanced convenience and tailored experiences
- Greater operational efficiency and optimized inventory management

In a nutshell, the integration of personalized experiences in the retail industry, be it through in-store shopper assistance or services such as curbside pickup, aims to create a more tailored, convenient, and engaging shopping journey for customers, ultimately driving brand loyalty and business growth.

WORKFORCE AUTOMATION

The retail industry has seen a significant transformation with the integration of workforce automation technologies. These advanced technologies include wearables and devices with voice recognition capabilities. These have revolutionized managing retail operations, enhancing efficiency, productivity, and customer service.

Wearable Technology in the retail sector empowers employees with devices such as wearable computers and RFID-enabled devices. These wearables allow staff to track inventory levels, locate products, and manage stock in real-time, reducing errors and improving efficiency. For example, a large multinational retail corporation in Canada invested in 1,500 Ring Scanners as one of their first wearable technology devices to be deployed across its 130 stores. This is expected to save customers time and money and make shopping online at the retail outlet easier and more convenient ¹⁰.

Honeywell IA's wearable barcode scanners and RFID readers can quickly and safely scan barcodes, granting retail employees the use of both hands to complete processes such as picking, sorting, and packing, saving time while scanning barcodes, handling products, and moving boxes more efficiently.

Voice Recognition has several applications in the retail sector, especially in voice-guided solutions for retail operations that can facilitate seamless communication and task management. Voice-directed picking systems allow staff to receive instructions through headsets, leading them through tasks more efficiently and accurately. Voice-enabled devices also assist in inventory checks, allowing employees to update stock levels and manage shelves by issuing voice commands, thereby

saving time and reducing errors.

Retailers can now access advanced data collection, automated documentation, and analytics capabilities to optimize workforce productivity using **Honeywell IA Voice solutions, which can also help achieve 99.99% order accuracy.**

INTELLIGENT OPERATIONS

Edge Intelligence in the retail industry represents a paradigm shift in leveraging advanced technologies such as Edge AI, device analytics, and supply chain visibility solutions to transform various aspects of retail operations. This involves deploying intelligent systems and analytics at the edge of the network, closer to where data is generated, such as in-store, rather than relying solely on centralized cloud-based solutions.

This approach offers real-time processing, faster insights, and improved decision-making capabilities. A German discount supermarket chain partnered with a computer vision provider to transform its stores into digital smart outlets and introduced a frictionless full-sized grocery store with real-time receipt capability ¹¹.

AI IN RETAIL

Edge AI and device analytics are transforming retail by enabling real-time insights and efficient operations. With AI models on edge devices, retailers can track inventory through smart shelves and sensors, ensuring stock availability and automating reorders. Analytics on shopper-device interactions reveal popular products and inquiries instantly. Additionally, device analytics allow retailers to monitor IoT devices, identifying issues like battery or network disruptions to improve customer assistance and workflow management.

Edge AI in Retail involves deploying AI algorithms and machine learning (ML) models on edge devices in-store. Retailers can use Edge AI to enable real-time inventory tracking by using smart shelves and sensors to monitor stock levels, reduce out-of-stock situations, and automate reordering processes. Analytics can also provide real-time data on shopper-device interactions. Retailers can gain immediate insights into which products are being searched frequently, common inquiries, or popular features.

According to Nvidia's State of AI in Retail and CPG Survey, over 60% of respondents shared their plan to boost AI investments by 2025. Some of the key AI use cases that are being invested in are Stockout and inventory management (39%), Loss prevention and asset protection (35%), Conversational AI & Natural Language Processing (36%). [Source] ¹².

Device Analytics involves collecting and analyzing data generated by various IoT devices, sensors, and endpoints deployed across the retail environment. This data helps in gaining insights and making informed decisions. Retailers can use the collected data to identify and address issues promptly, ensuring that devices used for shopper assistance operate efficiently without interruptions. According to the 2024 edition of the B2M Annual State of Enterprise Mobility Survey and Report, employees often face difficulties that impact regular users, such as fast battery draining (reported by 61% of workers) and network connection issues (reported by 81% of workers) ¹³.

Retailers need to move beyond tracking standard data metrics, analyze that data, and convert it into actionable insights. Honeywell IA Operational Intelligence solution enables retailers to not only achieve data-driven insights but also helps automate and manage workflows in real-time.

SUPPLY CHAIN VISIBILITY

Supply Chain Visibility involves utilizing technologies to gain instantaneous insights into the movement and status of products throughout the supply chain. By deploying IoT sensors and RFID tags, retailers can track inventory in real-time, from back-end inventory to store shelves, ensuring better inventory management and reducing stockouts or overstock situations.

According to the State of Visibility 2024 survey, 53% of companies, including retailers, are utilizing IoT trackers and devices for real-time tracking and data analysis, a significant increase from 25% in 2023 ¹⁴.

SUSTAINABILITY

In the current retail landscape, sustainability has become a transformative driver of consumer preference and operational standards. Environmentally conscious consumers increasingly favor brands that prioritize sustainability and ethical practices, prompting retailers to adopt eco-friendly solutions that strengthen brand loyalty and trust.

According to PwC's 2024 Voice of the Consumer Survey, consumers are willing to spend 9.7% more on sustainably produced goods ¹⁵. Honeywell Industrial Automation supports this shift by offering digital solutions that enhance efficiency while reducing waste and energy consumption, helping retailers meet these evolving demands. By integrating sustainable practices, such as energy management systems and automated inventory tracking, retailers can balance operational excellence with environmental stewardship, positioning themselves as leaders in a future-focused retail environment.

Overall, the integration of Edge Intelligence in the retail industry through Edge AI, device analytics, and supply chain visibility solutions not only enables retailers to make data-driven decisions, enhance operational efficiency, and provide personalized customer experiences but also supports sustainable practices by optimizing resource use and reducing wastage. This approach helps retailers adapt swiftly to changing market demands, driving growth, competitiveness, and environmental responsibility in the retail landscape.



Modern retailers grapple with ever-evolving customer preferences, where innovation and flawless services are non-negotiable. Shoppers expect smooth experiences across the retail industry, whether online shopping, supply chain processes, or in-store operations.

Retailers must ensure precision and flexibility across the entire value chain to reshape the customer experience. Honeywell IA's retail solutions seamlessly integrate people, assets, and merchandise from the storefront to the distribution center, revolutionizing the way businesses operate.

SHOPPER ASSISTANCE

In-store shopper assistance elevates the retail experience, ensures customer satisfaction, and fosters loyalty. In an era where consumers have abundant choices and convenient online shopping options, the physical store must evolve to offer unique and personalized experiences. A September 2024 consumer retail survey across the US and UK found that 51% of consumers prefer in-store shopping. Additionally, 60% are willing to travel farther for stores with friendly staff ¹⁶.

In-store shopper assistance encompasses a range of services to facilitate customer needs, including product location guidance, information dissemination, personalized recommendations, checkout support, and addressing customer queries.

A major multinational fashion retailer introduced an on-the-spot payment solution that allowed their employees to pick out customers who were waiting in line to pay for a small number of items

and quickly process their transactions via a handheld Honeywell device ¹⁷.

Role of Next-Gen Technology Next-gen connectivity and Edge Intelligence are two key technologies that are crucial for Shopper Assistance in retail. One of the key intentions behind shopper assistance is to ensure that real-time information is shared with the customer and to provide convenience to the customers in terms of easy checkout and accurate product information.

Next-gen connectivity, such as 5G and WiFi 6/6E play a critical role in ensuring that information exchange and customer transactions are seamless and reflect real-time data. While previous generation connectivity technologies, such as 4G, 3G, and WiFi 5, proved to be the backbone of the digital in-store revolution, 5G technology and WiFi 6 can provide significantly faster data transfer speeds, enabling faster loading of product information and a seamless reality experience for customers. Moreover, when answering customer queries, retail store employees need access to real-time data across the store platform. Edge Intelligence technologies such as wearable computers, AI, and ML can analyze the data from store platforms, including inventory tracking, to ensure that the employees have complete access to all the key information required.

Honeywell IA offers the CT37 mobile computer, a highly ergonomic, flexible, and powerful enterprise class device that serves as a comprehensive tool for retailers' in-store functions, including inventory and restocking, price checking, barcode scanning, AI-powered machine vision, and even mobile payments. This mobile computer is compatible with the latest 5G technology to ensure reliable connectivity across noisy indoor networks and outdoor environments, including CBRS and private networks.

The CT37 is built on Honeywell's Mobility Edge™, a durable, stable and secure unified platform that enables seamless evolution of mobile computing devices and software, with guaranteed support through Android 16. When paired with Honeywell Smart Pay, the CT37 grants employees the ability to bring the POS to the customer directly, safely, and securely, collecting contactless or card payments wherever a customer may be, thereby enhancing the overall customer experience. Honeywell IA's mobile computers can also help organizations overcome the problem of fragmented communications with enterprise-grade security for voice calls, text and media messaging, and user presence all from one device.

ASSET TRACKING AND OPTIMIZATION

Asset tracking is crucial in retail for enhancing in-store management. It facilitates real-time inventory management, preventing overstocking or understocking and ensuring timely product availability. By tracking assets throughout the supply chain, retailers can optimize operations, anticipate delivery times, and streamline restocking processes. Additionally, asset tracking acts as a preventive measure against property loss or damage, improving security by detecting and preventing theft or fraud. This, in turn, contributes to a better customer experience, as retailers can quickly locate and replenish products, fulfill customer requests promptly, and provide accurate information on stock availability. A leading Japanese fashion retailer implemented an RFID-based application across 150 of its 700 stores. The introduction of the application enhanced their existing RFID solution, offering improved visibility and location tracking of inventory. This technology upgrade allowed the retailer to meet the growing demand for buy online, pickup in-store (BOPIS) by ensuring accurate and real-time inventory counts at each of its stores, ultimately enhancing the efficiency and effectiveness of its operations ¹⁸.

Role of Next-Gen Technology

RFID technology is a transformative force in retail inventory and asset tracking. By applying RFID tags on products and stock, retail personnel can seamlessly monitor inventory levels, effectively reducing the risk of loss and theft. In contrast to manual methods such as barcoding, RFID enables the simultaneous scanning of numerous assets, significantly enhancing operational efficiency. Unlike barcodes, which require line-of-sight scanning, RFID tags can be detected by readers even when hidden or out of sight. RFID also eliminates errors from manual data entry for tracking assets by automatically capturing data through tags and readers. In in-store retail operations, asset management and tracking have

become increasingly sophisticated due to the integration of various technologies. WiFi and 5G technologies play a pivotal role by enabling real-time tracking of assets within the store environment. WiFi connectivity facilitates broader coverage and next-generation connectivity solutions, such as 5G and WiFi 6, employ advanced encryption protocols and network security features compared to their predecessors, safeguarding sensitive customer and business data from unauthorized access. Meanwhile, Near-Field Communication (NFC) technology is often employed for short-range communication, providing a seamless means for asset identification and tracking, particularly for high-value or sensitive items. The synergy of these connectivity technologies offers a comprehensive approach to asset management in retail. Within Honeywell IA's retail portfolio, the CK62, CK67, and CT37 mobile computers stand out. These devices operate on Honeywell's MobilityEdge™ platform, ensuring support through Android 16 with committed backing for Android 14 and 15, contingent on feasibility as well as support WiFi 6 and NFC capabilities. Addressing the challenge of fragmented communications, Honeywell IA's mobile computers offer enterprise-grade security for voice calls, text, and media messaging, along with user presence—all consolidated into a single device. These mobile computers play a crucial role in elevating in-store asset tracking, offering a portable, accurate, and efficient solution that seamlessly integrates with inventory management systems. Furthermore, Honeywell IA provides operational intelligence software featuring workflow automation and ruggedized asset management capabilities, addressing real-time challenges in asset management for enhanced operational efficiency.

LABELING AND PRICING MANAGEMENT

Labeling and pricing management in in-store retail are critical functions that revolve around implementing efficient solutions for accurate product labeling

and pricing display. This involves the integration of advanced technologies within retail establishments to ensure seamless front-end operations and streamlined back-end processes. In retail operations, there is a continuous need to manage new product arrivals or apply discounts to existing products, thereby streamlining and ensuring precision in retailers' labeling and markdown processes using printers, scanners, and computers.

A 2024 study found that 94% of consumers prioritize clear pricing and are more likely to stay loyal to brands that offer full transparency in their pricing ¹⁹. One of the leading multinational conglomerates strategized to partner with a global leader in digital solutions for physical commerce to enhance their store operations ²⁰.

Role of Next-Gen Technology AI applications in retail are transforming supply chain and inventory management, enabling real-time insights and improved operational efficiency. For labeling, AI-driven automation ensures accurate product labeling, reducing manual errors and saving time. AI can also enhance inventory tracking by predicting stock requirements based on customer buying behavior and seasonal demand, ultimately optimizing stock levels and reducing overstock or stockouts. Through predictive algorithms, AI can analyze demand patterns to automatically adjust pricing strategies in real time, helping retailers stay competitive. Together, these applications create a responsive, data-driven approach to backend retail operations.

RFID technology and Bluetooth have emerged as focal factors in implementing labeling and pricing management use cases, serving as a defining function for this operational domain. A survey conducted by a prominent technology vendor in the retail industry underscores the efficacy of Electronic Shelf Labels (ESL), incorporating technologies such as RFID, Barcode, and Bluetooth.

This integration has demonstrated a noteworthy 80% reduction in the time traditionally spent on manual paper tag updates, highlighting the operational efficiency achieved through ESL technologies ²¹.

Honeywell IA solutions include printers and wearable devices and contribute significant value to efficiently executing labeling and pricing management for retailers. Notably, the Honeywell PC42E-T desktop thermal transfer barcode printer by Honeywell IA enables high-speed label printing. Featuring an ECO button for economical printing, it reduces label wastage and minimizes calibration waiting time. Honeywell IA provides the SwiftDecoder, an easily deployable SDK empowering users to develop barcode-reading applications with advanced features such as Augmented Reality (AR) and Optical Character Recognition (OCR), enhancing performance across diverse devices and platforms.

SALESFLOOR ORDER FULFILMENT

Salesfloor order fulfillment is a critical use case from the perspective of the retail industry, emphasizing the seamless and efficient process of fulfilling customer orders. The use case involves leveraging technology to optimize the order fulfillment process directly from the sales floor. When a customer places a direct order from a retail store's available stock, it is essential to equip the employees to successfully deliver the products. This involves utilizing printers, mobile computers, and wearable solutions to optimize the process of picking, packing, and shipping the order seamlessly.

According to a survey in 2024, 71% of consumers expected store associates to assist with Endless Aisle purchases, where items are picked up from another location, up from 68% in 2023. Additionally, the demand for Mixed Cart transactions, where in-store and out-of-stock items are bought together, has grown. In 2024, 63% of consumers expected this feature, up from 57% in 2023 and 56% in 2021. This highlights the need for retailers to upgrade POS systems for smoother complex transactions ²².

Role of Next-Gen Technology
Technology in salesfloor order fulfillment streamlines in-store retail operations by empowering associates with mobile devices and applications, enabling real-time order processing, and enhancing the overall efficiency of the fulfillment process. The salesfloor order fulfillment in in-store operations is mainly driven by the use of wearable computers and handheld computers as it provide store workers with easy functioning. Their features, such as WiFi connectivity, help ease communication between workers. Other than these, the use of NFC also brings ease in operations and communication for retailers. By eliminating paper checklists and manual data entry and streamlining routine tasks such as inventory checks, handheld computers can potentially decrease physical and mental fatigue for employees and facilitate real-time information access and communication tools for quicker problem-solving and collaboration.

The Honeywell CT47 handheld computer, based on the Mobility Edge™ platform, stands out with features such as advanced connectivity (5G, NFC, WiFi 6E). The Honeywell IH45 RFID handheld reader excels in capturing RFID tags up to 20 feet away, offering 1D/2D scanning with UHF capabilities. Honeywell IA also offers wearable computers, such as the CW45, also built on the Mobility Edge™ platform, featuring WiFi 6, Bluetooth V5.1, and NFC capabilities. These solutions contribute to optimizing in-store retail operations for efficient salesfloor order fulfillment.

HONEYWELL INDUSTRIAL AUTOMATION SUCCESS IN RETAIL

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Honeywell IA boasts a strong value proposition for the retail sector. 60 out of the top 100 retailers use Honeywell Solutions.

PROBLEM AREA	CUSTOMER PROBLEM	HONEYWELL SOLUTION	CUSTOMER OUTCOMES
PRODUCTIVITY	- A leading European supermarket chain with over 700 stores had enormous success launching multiple E-fulfillment centers (EFC). - The client implemented automated solutions to collect customer orders as quickly as possible and was on the lookout for scanning technologies to be used to process orders efficiently.	The client identified and implemented the Honeywell CT40 wearable solution on the Mobility Edge platform.	- Improved productivity and performance by 15% - Lower Total Cost of Ownership - Longer lifecycle - Faster deployment within 3 months
ACCURACY	South Africa's leading sport and outdoor retailer needed a solution that increased fine picking productivity and maintained a high, pick accuracy, especially during peak season. Their existing solution of RF scanning was inefficient.	Honeywell Voice on CK3 devices and SRX2 headsets	99.99% picking accuracy 39% improvement in pick productivity - Total payback in first 2 years
WORKER WELLBEING	In a bid to address mounting concerns from its 750-strong inventory management staff, a leading Australian supermarket chain found itself grappling with an escalating tide of stress-related injuries stemming from poorly designed repetitive tasks and inadequate ergonomics. This unfortunate confluence of worker dissatisfaction and inefficiency threatened both employee wellbeing and overall operational effectiveness.	- The CW45 computer and 8675i ring scanner form a seamless hands-free duo, transforming repetitive tasks into effortless routines. - Designed with meticulous attention to comfort and ergonomics, these wearables empower workers to perform at their peak without sacrificing their well-being.	20% increase in overall productivity 85% reduction in new worker complaints 9/10 workers felt the solution made repetitive tasks easier and faster
CUSTOMER EXPERIENCE	A large North American retailer with over 2000 stores was experiencing challenges with their mobile computing devices being unreliable and prone to breakage	- CT40 XP Mobile Computer - a smart versatile enterprise mobile solution with rugged design with flexible scanning - Honeywell Operational Intelligence software offering that goes beyond simply providing data. It takes data one step further by analyzing it and converting it to actionable insights.	- Improved device life cycle and device support. - Reduced customer wait times in queues - improved speed of service in some cases by 93%.
SUSTAINABILITY	Implement Honeywell's industrial automation solutions to promote sustainability in a retail store	- Reducing Food Waste-Honeywell productivity solutions: These systems optimize inventory management by ensuring that perishable goods are stored and retrieved efficiently, reducing the likelihood of spoilage - Decreasing Use of Paper-Honeywell Voice Solutions: These solutions enable voice-directed work processes, reducing the need for paper instructions and checklists. - Saving Energy Consumption Honeywell Energy Management System (EMS): This system monitors and controls energy usage across the store, optimizing lighting, heating, ventilation, and air conditioning (HVAC) systems to reduce energy consumption.	- Environmental Impact: Significant reduction in food waste, paper usage, and energy consumption contributes to a lower carbon footprint and more sustainable retail operations. - Cost Savings: Reduced waste and energy consumption lead to lower operational costs, improving the store's overall profitability. - Enhanced Customer Experience: Efficient operations and a commitment to sustainability can enhance the store's reputation and attract environmentally conscious customers.

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