IDC FutureScape

IDC FutureScape: Worldwide Retail 2025 Predictions

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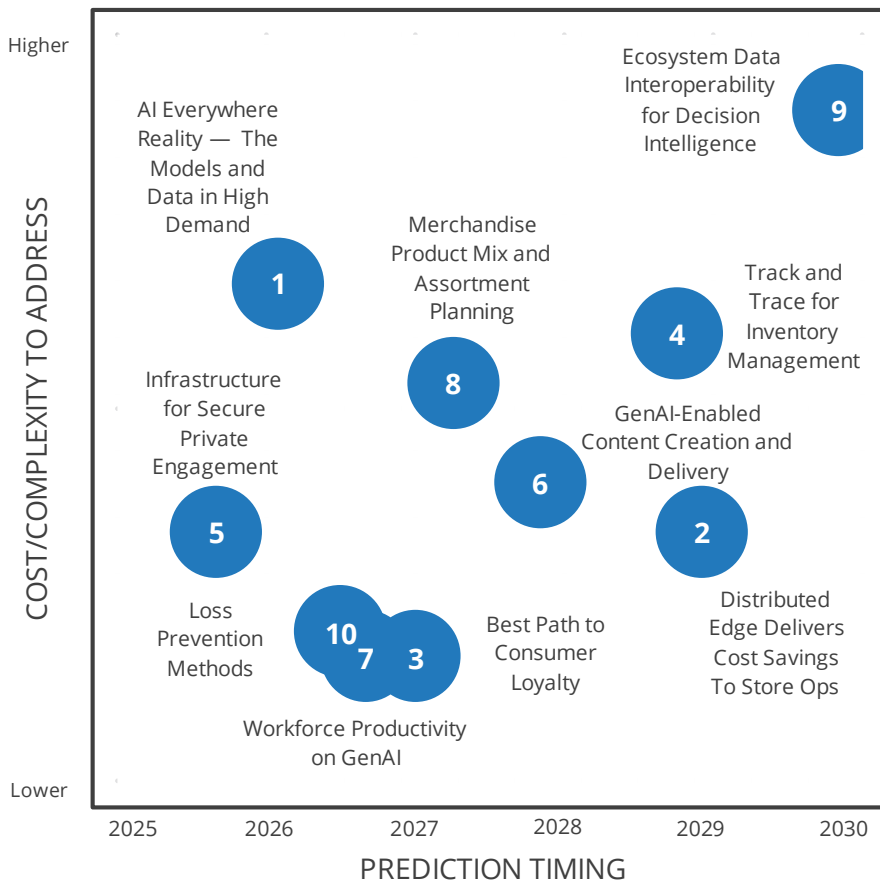Jordan K. Speer   Ornella Urso

IDC FUTURESCAPE FIGURE

FIGURE 1

IDC FutureScape: Worldwide Retail 2025 Top 10 Predictions

Note: Marker number refers only to the order the prediction appears in the document and does not indicate rank or importance, unless otherwise noted in the Executive Summary.

Source: IDC, 2024

EXECUTIVE SUMMARY

This IDC FutureScape provides worldwide retail executives with insights into future business scenarios and their associated technology impacts. Our intended readers include executives and business and information technology (IT) leaders of retail organizations worldwide.

Retailers have spent 2024 cautiously monitoring inflation and global threats to business and, as a result, slowed some capital investments. That said, if the value to profit or future growth was significant enough, investments continued. IDC survey data indicates optimism is rising and technology investments are being made to improve customer experience, reduce the cost of operations, and become more agile and resilient.

IDC FutureScape predictions this year suggest that retailers are aggressively pursuing new paths to growth but not forgetting to work on reducing complexity, where unnecessary costs hide. The retail industry is continuing to transform before our eyes, successfully navigating new dynamics that require technology investments to support resiliency and agility in the coming years. As retailers continue to manage through seismic change, both IT and line-of-business (LOB) executives will find clear guidance in this document on how technology priorities and implementation strategies should be adapted to current realities.

Our predictions focus on the following key themes:

- **Digital first.** The retail enterprise must be connected, mobile, IoT and AI enabled, secure, transparent, and trustworthy. Stores, warehouses, and third-party providers will integrate and automate more processes to get ahead of workforce shortages and to optimize the economics of the ecosystem. Technologies including computer vision (CV), advanced loss prevention, and electronic shelf labels will improve service and reduce losses due to theft in stores. Mobility and AI-driven automation will squeeze more value from customer care and the frontline workforce with added engagement, community, and productivity.

- **AI everywhere and the intelligent enterprise.** The excitement about the potential of generative AI (GenAI) in retail has accelerated investment in advanced analytics, AI, machine learning (ML), and natural language processing (NLP) as retailers strive to shift from being data rich to data driven. New revenue and growth initiatives including media networks, marketplaces, and fulfillment services are gaining traction, as retailers work to seize more value from real-time, contextualized engagement. In the back office, human capital management

(HCM) is being transformed with AI and GenAI to improve recruiting, training, labor forecasting, scheduling, and task management.

- **Optimizing operations.** Data-driven, operational innovation improves both efficiency and customer experience (CX). Retailers are making the connection between sustainability, traceability, and profitability and, as a result, are seeking to make the end-to-end supply chain for softlines, hard goods, and food operate more seamlessly. The new economics of the ecosystem are driving investments in a mix of modern architectures and legacy capabilities, with heavy reliance on network providers, cloud platforms, and managed services providers.

- **Experience and engagement.** Omni-channel commerce continues to thrive as customers seek choice, value, and convenience in all phases of the experience (discovery, purchase, fulfillment, returns, and service). AI- and GenAI-enabled voice, AR/VR, and robotics will improve search, personalization, content creation, data accuracy, and customer service management.

Our worldwide retail industry 2025 predictions are:

- **Prediction 1:** By 2026, 90% of retail tools will embed AI algorithms, with over 30% of these algorithms using standalone AI or modular, agnostic AI models that can be swapped out for suitable retail-specific models.

- **Prediction 2:** By 2028, 30% of retailers will drive 10% IT costs out of stores by utilizing distributed edge with onboard AI chips, reducing latency and improving IT operations performance.

- **Prediction 3:** By 2026, 70% of retailers will implement AI-driven loyalty apps, improving contextualized offers by 40% and boosting customer engagement to drive up to a 25% increase in customer retention rates.

- **Prediction 4:** By 2028, secondary inventory management benefits realized from technology adopted to be compliant with regulations will spur a 30% increase in supply chain adoption of track and trace capabilities.

- **Prediction 5:** By 2025, major retailers will boost IT spending by 10%+ to enhance cybersecurity to better battle the rising tide of new, more sophisticated data breaches and other cyberthreats retailers now face.

- **Prediction 6:** By 2027, 40% of retailers will leverage GenAI-enabled content creation and delivery for dynamic product content, boosting conversion rates and cutting content management costs by 30%.

- **Prediction 7:** By 2026, 50% of retailers will have reduced workforce costs by 2% with embedded GenAI in fundamental business processes and tasks across business operations at corporate and in stores.

- **Prediction 8:** By 2027, over 45% of major retailers will apply hyper-localization for store-specific assortment planning, selection, allocation, and replenishment that leverages AI and data-driven decision-making.
- **Prediction 9:** By 2029, grocery retailers will harness quality data at scale from interoperable unified supply networks for AI-based decision intelligence to see a 6% increase in profits and 18% reduction in waste.
- **Prediction 10:** By 2026, 70% of major retailers will invest in loss prevention tech applying AI to integrated data sets with multiple sources (RFID, camera, traffic, and inventory data) to reduce in-store theft by 25%.

This IDC study presents the top 10 predictions for the retail market for 2025.

Leslie Hand, Group Vice President, IDC Retail Insights and IDC Financial Insights, emphasized, "Retailers are not investing in small step changes to their portfolios — they are digitally transforming and investing in the massive scale and speed of digital, cloud-based, connected, AI-driven, and sensor-driven automation. We are in the middle of a customer-led, technology-enabled revolution in retail."

IDC FUTURESCAPE PREDICTIONS

Summary of External Drivers

- **AI-driven business models** — Moving from AI experimentation to monetization
- **The drive to automate** — Toward a data-driven future
- **Battling against technical debt** — Overcoming hurdles to IT modernization
- **Regulatory flux** — Navigating compliance challenges in a shifting policy landscape
- **Expanding digital security frontiers** — Fortification against multiplying threats
- **Customer experience squared** — Consumer and citizen expectations for digital services
- **AI-driven workplace transformation** — Building tomorrow's workforce today

Predictions: Impact on Technology Buyers

Prediction 1: By 2026, 90% of Retail Tools Will Embed AI Algorithms, with Over 30% of These Algorithms Using Standalone AI or Modular, Agnostic AI Models That Can Be Swapped Out for Suitable Retail-Specific Models

Almost all retail solutions vendors have invested in building AI capabilities into their solutions. Initially, these algorithms were designed to stay competitive, but they have

evolved into table stakes where a highly mature and evolved set of AI algorithms become crucial to the success of the retailer. Today, of the 40–50 software and solutions platforms, architectures, frameworks, or software purchased, almost all will contain, at the very least, trace elements of AI. Sophisticated tools will have even more AI capabilities that model primary retail functions. These capabilities enable decision-making using copious amounts of collected data and a natural language interface to communicate with a machine.

While AI continues to proliferate and captivate the general public, we see the importance of flexibility coming to the forefront for retailers. With so many variants of AI and machine learning, plus the heavy competition introduced by the largest companies in the world, such as Google, Meta, Amazon, and IBM, there is an overflow of AI technologies. For retailers there is an inherent need to build modularity, flexibility, extensibility, and scalability into retail AI-based applications. This means infrastructure will require modular, tech-agnostic modeling. Also, with the rapid pace at which AI technologies continue to advance, with new algorithms every month, retailers must be able to swap out older capabilities for those that are state of the art. From generic, generalized models will come AI models that are preconfigured for retail, with pretrained algorithms and a shift for retailers to drive faster time to market, relevancy and accuracy, and less reliance on a single AI model structure, thereby reducing risk and latency.

Associated Drivers

- **AI-driven business models** — Moving from AI experimentation to monetization
- **The drive to automate** — Toward a data-driven future
- **Battling against technical debt** — Overcoming hurdles to IT modernization

IT Impact

- IT teams will focus on in-house development, especially applying bespoke and custom development for highly retail-specific use cases with proven application and value. This includes hiring and staffing talent with the most recent, up-to-date AI/ML and GenAI skill sets — to the level this talent is available, affordable, or trainable. Over 50% of retailers will be investing in in-house development of AI/ML solutions for the next two years.

- IT teams will seek deeper relationships with existing partner vendors that embed AI capabilities in their tools. Teams will also build or extend relationships with third-party partner organizations that have experience and expertise in AI. 58.27% of retailers will be looking for third-party support in building AI/ML solutions for the next two years.

- IT teams will focus on select retail use case capabilities with a multiplatform approach. The rapid pace of advancement in the space will demand continuous

learning and high flexibility to move to new, modular options on different platforms. IT teams will apply cross-platform integration as a new body of knowledge critical to ongoing AI development. Almost a dozen retail-specific use cases exist where 15%+ retailers surveyed (n = 980) indicate or expect significant KPI or financial impact.

Guidance

- Know that mainstreaming applications using AI will require full understanding of multiple platforms and cross-platform integration. Both the new platforms and integration of the same will need expertise that is scarce. It's better not to skimp on talent hiring or consultative engagement to ensure you have the best options.

- Don't lock into a single platform vendor — should you decide to leverage platforms versus in-house module development. The rapid change can easily make your investment and future objectives obsolete if the platform vendor or software vendor doesn't keep up with the latest AI technology.

- Consider building a center of excellence (COE) for both evaluation and innovation with new AI algorithms and models. Ensure that the COE is designed for continuous improvement and as an ongoing resource.

Prediction 2: By 2028, 30% of Retailers Will Drive 10% IT Costs Out of Stores by Utilizing Distributed Edge with Onboard AI Chips, Reducing Latency and Improving IT Operations Performance

Retailers are increasingly turning to advanced technologies to streamline operations and reduce costs. Reducing the cost of operations of distributed operations (stores and warehouse distribution facilities) is a top retail objective. By 2028, it is predicted that 30% of retailers will achieve a 10% reduction in IT costs by leveraging distributed edge computing with onboard AI chips. This shift is driven by the need for faster data processing and real-time analytics, which are critical for enhancing customer experiences and operational efficiency. Edge computing allows data to be processed closer to the source, reducing latency and bandwidth usage, which in turn lowers IT expenses associated with cloud computing and centralized datacenters. The implementation of onboard AI chips in edge devices is a key factor in this transformation. These chips enable sophisticated data processing and machine learning capabilities directly at the edge, allowing retailers to perform tasks such as inventory management, customer behavior analysis, and predictive maintenance without relying on distant servers. This not only speeds up decision-making processes but also enhances the reliability and performance of IT operations. By reducing the dependency on centralized systems, retailers maintain the required uptime service levels in store and ensure smoother, more efficient store operations.

Retailers will need to invest in upgrading their IT infrastructure to support edge computing and AI capabilities to accomplish this objective. This includes deploying edge servers, integrating AI chips into existing hardware, and developing software solutions that can leverage these technologies. In addition, retailers will need to train their IT staff to manage and maintain these advanced systems. By doing so, they can create a more agile and responsive IT environment that not only reduces costs but also drives innovation and improves overall business performance.

Associated Drivers

- **Battling against technical debt** — Overcoming hurdles to IT modernization
- **AI-driven business models** — Moving from AI experimentation to monetization
- **The drive to automate** — Toward a data-driven future

IT Impact

- **Reduced latency:** Evaluate processes and service issues to discover how much reducing latency would improve associated productivity and customer experience. Distributed edge computing with onboard AI chips will significantly decrease data processing times, leading to faster embedded decision processing and improved real-time engagement.
- **Lower bandwidth usage:** Quantify the cost savings related to potential savings from lower bandwidth requirements. By processing data locally at the edge, retailers can reduce the amount of data transmitted to central servers, thereby lowering bandwidth costs and improving network efficiency.
- **Enhanced distributed IT operations:** Strategize about short- and long-term distributed IT operations needs. The integration of AI chips will automate routine IT tasks, improve system reliability, and reduce the need for extensive IT support, leading to overall better performance and reduced operational costs.

Guidance

- **Invest in edge infrastructure:** Retailers should allocate resources to upgrade their IT infrastructure, including deploying edge servers and integrating AI chips into existing hardware to support distributed computing.
- **Develop AI-driven applications:** Focus on creating and implementing software solutions that leverage AI capabilities for tasks such as inventory management, customer analytics, and predictive maintenance to maximize the benefits of edge computing.
- **Train IT staff:** Ensure that IT personnel are well trained in managing and maintaining edge computing systems and AI technologies to fully harness their potential and maintain smooth operations.

Prediction 3: By 2026, 70% of Retailers Will Implement AI-Driven Loyalty Apps, Improving Contextualized Offers by 40% and Boosting Customer Engagement to Drive Up to a 25% Increase in Customer Retention Rates

Loyalty in retail is a critical component of a successful CX strategy, directly impacting customer retention and long-term profitability. Retailers invest in loyalty programs to reward repeat customers, encourage frequent purchases, and foster brand allegiance. These programs often include tiered memberships, point redemption, and access to exclusive discounts and early sales across multiple brands, all designed to make customers feel valued and build trusted relationships. By enhancing loyalty, retailers can reduce churn rates, increase customer lifetime value, and generate positive word-of-mouth referrals, essential for sustaining growth in a competitive market.

With AI-driven loyalty program technologies, contextualized offers and product recommendations enhance real-time customer experiences, significantly boosting engagement. According to IDC's *Consumer Sentiment Survey,* 35% of consumers are willing to share personal data, such as their name, address, phone number, purchase history, and even biometrics, when participating in a loyalty program. AI has transformed traditional transactional loyalty programs into sophisticated, emotional, data-driven initiatives. It enables retailers to analyze vast amounts of customer data to uncover insights about shopping behaviors, preferences, and patterns. This data-driven approach allows for the creation of highly personalized loyalty programs that resonate with individual customers, offering relevant rewards and promotions that increase the likelihood of repeat purchases, thereby driving customer loyalty and retention.

Associated Drivers

- **Customer experience squared** — Consumer and citizen expectations for digital services
- **The drive to automate** — Toward a data-driven future
- **Regulatory flux** — Navigating compliance challenges in a shifting policy landscape

IT Impact

- IT should manage a scalable IT infrastructure to handle increasing data volumes and user interactions as the loyalty program grows and is integrated with a unified commerce platform.
- IT needs to monitor robust systems for collecting, storing, and analyzing customer data to enable personalized experiences and insights while ensuring data security and customer privacy.

- IT should work collaboratively with LOB for continuous monitoring and optimization of the loyalty program's performance and impact on business metrics.

Guidance

- Ensure seamless integration between loyalty platforms and existing retail systems such as CRM, POS, ecommerce, and mobile apps to provide a unified customer experience.
- Implement strong security measures to protect customer data and ensure compliance with data protection regulations like GDPR and CCPA.
- Develop a holistic approach to CX that fully integrates AI-driven loyalty programs as part of the real-time and contextual customer journey model strategy.

Prediction 4: By 2028, Secondary Inventory Management Benefits Realized from Technology Adopted to Be Compliant with Regulations Will Spur a 30% Increase in Supply Chain Adoption of Track and Trace Capabilities

The regulatory environment has intensified globally. Retailers and other organizations are under increasing pressure to achieve compliance to a growing body of domestic and international laws around areas as varied as food safety (e.g., the FDA Food Safety Modernization Act [FSMA]), carbon emissions (e.g., the EU's Corporate Sustainability Responsibility Directive [CSRD]), and human rights (e.g., the Uyghur Forced Labor Prevention Act [UFLPA]). While the particulars may vary, common to all of these regulations is a requirement for retailers to track and disclose information about products and their movement across supply chains (e.g., product ingredients; product composition, location, and condition; and production provenance/tiers of supply).

As retailers implement new processes and technology including IoT/RFID sensors and software applications to enable necessary tracking and reporting to fulfill regulatory requirements, they will uncover knock-on benefits that extend beyond compliance. Tracking and tracing that is more automated, comprehensive, and granular will provide retailers with visibility and insights in near real time that enable better inventory management and optimization as well as improved efficiencies and less waste, better selection of and collaboration with supplier partners, and a more holistic view of the supply networks to which they belong. Realization of the benefits accrued from these initiatives will spur organizations to expand implementation across more categories, divisions, and partners, driving a 30% increase in adoption of track and trace capabilities across the supply chain in the next four years.

Associated Drivers

- **Regulatory flux** — Navigating compliance challenges in a shifting policy landscape
- **The drive to automate** — Toward a data-driven future
- **Expanding digital security frontiers** — Fortification against multiplying threats

IT Impact

- Conduct a full assessment of where data is being tracked and traced to uncover additional opportunities to rationalize systems across the enterprise.
- Look for opportunities to automate data collection and connectivity through technology adoption or expanded use of existing systems to extend data visibility across the organization and ecosystem.
- Support integration of technology and software for improved data enablement and use across the end-to-end supply chain. Consider where AI use cases offer opportunity to reduce tasks and improve decision-making.

Guidance

- If you haven't already, conduct a full review to determine how rules and regulations are or will be affecting your business and what technology and processes are in place to enable compliance with them.
- Shift organizational frameworks from viewing compliance measures as a cost of doing business to an opportunity to compete through better inventory management and fulfillment, reduced costs and waste, improved CX, and more.
- Look to see where you have tracking and tracing measures in place already whose data output can be further harnessed for other lines of business and improved outcomes.

Prediction 5: By 2025, Major Retailers Will Boost IT Spending by 10%+ to Enhance Cybersecurity to Better Battle the Rising Tide of New, More Sophisticated Data Breaches and Other Cyberthreats Retailers Now Face

Cybersecurity risk is one of retailers' top pain points in today's rapidly evolving environment. Unfortunately, retailers are facing more prevalent and increasingly sophisticated ransomware and other cyberattacks along with significantly reduced time windows for meeting ransom demands. In addition, there is a lower barrier for entry for new cybercriminals with easier access to fraud/attack techniques and ability to sell stolen data courtesy of the dark web. Just over 50% of retailers report having been impacted by a ransomware attack in the last year, and retailers cite security, risk, and compliance spending as the number 1 area most immune to budget cuts, despite

economic conditions (source: IDC's *Future Enterprise Resiliency and Spending Survey, Wave 6,* June 2024).

While the new level of cyberattack risk is impacting all industries, retail has some unique circumstances that exacerbate the threat. Retail IT environments have been growing more complex and distributed, with proliferating numbers of endpoints (connected devices, IoT-enabled coolers, etc.) and a greater embrace of cloud, leaving a much wider security perimeter to secure. In addition, a highly distributed industry with a large remote workforce means more opportunities for systems to be compromised. Accordingly, nearly 60% of retailers expect to increase cybersecurity IT investments in 2025. Enhanced cyberprotection has become essential for retailers to battle against the new and evolving cyberthreats and avoid costly and potentially brand-damaging data breaches.

Associated Drivers

- **Expanding digital security frontiers** — Fortification against multiplying threats
- **Regulatory flux** — Navigating compliance challenges in a shifting policy landscape
- **Battling against technical debt** — Overcoming hurdles to IT modernization

IT Impact

- Do a full assessment of the IT security portfolio to determine ways to reduce the complexity of having multiple different security products. Consider replacing multiple products with a consolidated security solution.
- Conduct device discovery assessments to ensure all endpoints are known and protected and implement strict micro-segmentation policies to reduce risks.
- Determine ways to leverage AI/GenAI or invest in intelligent security tools to gain predictive security protection against evolving threats.

Guidance

- Consider ransomware as a business problem, not just an IT problem — this means convening a cross-functional planning committee with security, legal, and business leaders to develop a comprehensive action plan before an attack.
- Break down security silos and build greater collaboration across and among physical security and cybersecurity teams. Converged security intelligence and increased cross-team collaboration can enable new strategies for battling threats.
- Consider using proactive threat intelligence services to be aware of and prepare for new/emerging threats as they evolve.

Prediction 6: By 2027, 40% of Retailers Will Leverage GenAI-Enabled Content Creation and Delivery for Dynamic Product Content, Boosting Conversion Rates and Cutting Content Management Costs by 30%

Retailers are increasingly recognizing the importance of dynamic and personalized product content to enhance customer engagement and drive sales. Generative AI offers a transformative approach to content creation, enabling retailers to generate high-quality, tailored content at scale. This shift is driven by the need to meet evolving consumer expectations for personalized shopping experiences and the competitive pressure to differentiate through unique and engaging product content.

The adoption of GenAI for content creation and delivery will significantly impact retailers' operational efficiency and cost structures. By automating content generation, retailers can reduce the time and resources required for content management. In addition, the ability to deliver dynamic and personalized content will enhance customer engagement, resulting in higher conversion rates. As retailers integrate GenAI into their content strategies, they will need to invest in the necessary AI tools, infrastructure, and expertise to maximize the benefits of this technology. This strategic move will position retailers to better compete in a digital-first, AI-driven retail landscape.

Associated Drivers

- **AI-driven business models** — Moving from AI experimentation to monetization
- **The drive to automate** — Toward a data-driven future
- **Customer experience squared** — Consumer and citizen expectations for digital services

IT Impact

- IT should ensure seamless integration of advanced AI tools and infrastructure that support GenAI-enabled content creation with existing systems and scalability for future growth.
- IT should establish robust data management practices to handle large volumes of dynamic content, ensuring data accuracy, security, and compliance with privacy regulations.
- IT will need to upskill the company's workforce in AI and machine learning to effectively manage and optimize GenAI applications, fostering a culture of continuous learning and innovation.

Guidance

- Collaborate with technology partners to ensure seamless integration of AI tools and infrastructure and plan for scalability to support future growth.

- Develop comprehensive data management policies and invest in security measures to protect dynamic content, ensuring compliance with privacy regulations.
- Implement continuous learning programs and partner with educational institutions to upskill IT staff in AI and machine learning, fostering a culture of innovation.

Prediction 7: By 2026, 50% of Retailers Will Have Reduced Workforce Costs by 2% with Embedded GenAI in Fundamental Business Processes and Tasks Across Business Operations at Corporate and in Stores

By 2026, it is anticipated that 50% of retailers will reduce workforce costs by 2% through the integration of generative AI into fundamental business processes and tasks. To support meeting target performance outcomes, retailers are improving the efficiency and effectiveness of HR processes including recruiting, training, managing, scheduling, paying, and career pathing in corporate offices, stores, and distribution centers. A critical area of investment, the core human capital management, workforce management, and task management systems require accurate short- and long-term AI-enabled labor forecasting to improve end-to-end workforce planning and execution. Retailers are currently investing in HR systems to enhance functionality (63%), improve user experience (59%), reduce costs (54%), integrate with other systems (49%), improve scalability and future-proofing (49%), align with business strategy (44%), and comply with new regulations (41%) (source: IDC's *HR Survey,* August 2024; retail n = 70).

By taking an end-to-end approach on HR, workforce management, and task management with one technology partner or several, and with AI and GenAI embedded into these processes, retailers can streamline operations, reduce the need for manual intervention, and optimize workforce allocation and productivity through the entire work experience life cycle, leading to cost savings. This involves investing in AI platforms and tools that can be seamlessly integrated into existing systems. Retailers will also need to focus on training their workforce to work alongside AI, ensuring that employees can leverage these tools effectively. In addition, change management strategies will be crucial to address any resistance and to ensure smooth adoption.

Associated Drivers
- **AI-driven workplace transformation** — Building tomorrow's workforce today
- **Customer experience squared** — Consumer and citizen expectations for digital services
- **AI-driven business models** — Moving from AI experimentation to monetization

IT Impact

- **Automation of routine tasks:** Embedding AI in business processes will automate repetitive and time-consuming tasks, reducing the need for manual intervention and freeing up IT and business resources for more strategic initiatives.
- **Enhanced data analytics:** GenAI will enable more sophisticated data analysis and insights, allowing retailers to make data-driven decisions more quickly and accurately, thereby improving overall business intelligence.
- **Improved system efficiency:** The integration of GenAI will optimize IT operations by streamlining workflows and reducing system bottlenecks, leading to more efficient and reliable IT performance.

Guidance

- **Invest in AI- and GenAI-enabled technologies:** Allocate budget and resources to acquire and implement platforms and tools that enrich workflow and decision processes and can be integrated into existing business processes to maximize efficiency and cost savings.
- **Focus on employee training:** Provide comprehensive training programs for employees to learn in the flow of work, fostering a collaborative environment between human and AI-driven tasks.
- **Implement change management strategies:** Develop and execute change management plans to address potential resistance and ensure smooth adoption of AI-enabled technologies across corporate and in-store operations, promoting a culture of innovation and continuous improvement.

Prediction 8: By 2027, Over 45% of Major Retailers Will Apply Hyper-Localization for Store-Specific Assortment Planning, Selection, Allocation, and Replenishment That Leverages AI and Data-Driven Decision-Making

Hyper-localization is the ability to make product assortment decisions at a highly granular level down to the item and store levels across merchandise product catalogs. This includes distribution across thousands of stores and hundreds of thousands of SKUs and variants. Today's technology has changed so rapidly and significantly that we can now allow manipulation of items at an atomic product level. Modern technology can handle enormous sets of data and unlimited constraint conditions across finance, space, capacity, availability, inventory, and more.

Several retail functions will fold into hyper-localization as retailers attempt to optimize the business across every store, category, lane, shelf, product line, and product. Allocation and replenishment will become more automated as tools become more

sophisticated. There will be a clear market shift with a noticeable competitive edge for companies that are able to hyper-localize versus those that cannot. Sophisticated retailers will invest in technology to enable this advantage.

Associated Drivers

- **Customer experience squared** — Consumer and citizen expectations for digital services
- **The drive to automate** — Toward a data-driven future
- **AI-driven business models** — Moving from AI experimentation to monetization

IT Impact

- IT teams must be able to manage large amounts of data, requiring infrastructure and data management skill sets. This includes data management in real time and data science talent to mix, match, and modify solutions to build out the necessary hyper-localization components.

- Automation will be key to processing data as human beings could never process all the information needed to make decisions in real time. Hyper-localization will drive broader-scope decision-making by merchants, while AI and other tools will optimize these higher-level decisions at the granular level, within merchant constraints. IT teams will build automation-friendly architectures that will be flexible enough to address new products, assortment changes, and integrated retail systems.

- IT teams must embrace new AI talent to deliver hyper-localization. This will require either strong training programs or rapid-fire hiring once goals have been outlined to build hyper-localization into the retailer's capabilities. Retail IT teams must understand the data science behind hyper-localization as well as the newest technologies and data manipulation.

Guidance

- Build hyper-localization in clustered groups first to reduce risks. Instead of segmenting down to specific products or items, look for opportunities to build to categories or product groups across different store locations. Understanding and mapping out entire store networks, especially leveraging similar store clustering, can reduce the initial efforts and buy some initial wins when applying hyper-localization.

- Maintain human oversight across your toolset. Employ tools that allow for clean monitoring of operations, especially as your organization experiments with applying AI algorithms to assortment planning or optimization schemes. Build in a default structure based on historical successes that can be used as a safety net in the event of machine failure or human error.

- AI- and data-driven decisioning will become the critical mechanism for hyper-localization, but so will reinforced learning and machine learning capabilities that will allow self-optimization of the system and product sets. Assortment planning will become a more important factor at a strategic level. Expect to see heavy competitive consequences. Make sure to put knowledgeable, top talent on this task until it matures.

Prediction 9: By 2029, Grocery Retailers Will Harness Quality Data at Scale from Interoperable Unified Supply Networks for AI-Based Decision Intelligence to See a 6% Increase in Profits and 18% Reduction in Waste

Across the food industry, including post-purchase, food waste is a chronic issue, estimated by the USDA at between 30% and 40%. Grocery retailers are increasingly recognizing the importance of using data and AI to optimize their end-to-end supply chains, eliminating waste, improving freshness, and ultimately growing profits: More than 30% of overall retailers report that they have reduced costs and waste as a result of AI/GenAI deployments in their supply chain (source: IDC's *Worldwide Supply Chain Survey,* 2024). Even so, 43.8% of retailers say that a lack of robust data analytics and insight intelligence is one of the top 3 gaps that will be most problematic for their supply chains if not addressed in the next three years.

Good intelligence requires good quality data, and lots of it. Fortunately, an increase in unified platforms can enable supply chain partners to operate multi-directionally in real or near real time on "one version of the truth" across global networks. By allowing retailers to track goods from suppliers to stores — and using the data in real time to address immediate setbacks and collectively to identify problems revealed in patterns — retailers can better identify bottlenecks and inefficiencies, allowing for improved decision-making and better collaboration with all partners across the supply chain ecosystem.

The opportunity of unified networks and the quality data they can provide at scale are particularly crucial for grocery retailers. Food freshness and availability are critical for customer satisfaction, but the short shelf life of perishables requires just-in-time delivery and inventory stocking of the right product in the right location to be profitable while minimally wasteful. AI is instrumental in enabling this outcome by optimizing across the supply chain including in areas of demand forecasting and pricing, sourcing and logistics, inventory management, and retail labor forecasting.

Associated Drivers

- **AI-driven business models** — Moving from AI experimentation to monetization
- **The drive to automate** — Toward a data-driven future

- **Battling against technical debt** — Overcoming hurdles to IT modernization

IT Impact

- Unified networks for end-to-end perishables are several years off, but even then, we are unlikely to achieve 100% participation when we're talking about some of the smaller growers and fishers at the very front end of the supply chain. Even some non-small suppliers will be less sophisticated. While technology maturity may govern supplier selection to some degree, look for ways to enable collaboration with less technologically mature members of the supply chain to collect and report quality data and to integrate it into the wider network platform.
- Automation of data collection and transmission through the supply chain will reduce the need for manual intervention from both line of business and IT, freeing up IT and business resources for more strategic and innovative initiatives.
- IT will need to embed grocery-specific AI tools into its network to take advantage of data at scale with algorithms that are uniquely trained on the specific issues surrounding freshness, food safety, and quick degradation.

Guidance

- Start with problems most easy to identify and look for solutions that can help you tackle your most pressing supply chain issues (e.g., are you throwing away 50% of your fruit, are trucks arriving half empty, or is your customer basket size decreasing?) while helping create a more intelligent, resilient business with automation and connectivity.
- Bring planning and execution solutions into a single environment to enable unified data across functions for improved decision-making, increased flexibility, and reduced waste.
- While holistic interoperability among all of the constituents of a supply chain network is the end goal, many significant wins in AI optimization can be achieved for specific use cases. Putting good processes in place and automating where possible in each area of the supply chain are good first steps.

Prediction 10: By 2026, 70% of Major Retailers Will Invest in Loss Prevention Tech Applying AI to Integrated Data Sets with Multiple Sources (RFID, Camera, Traffic, and Inventory Data) to Reduce In-Store Theft by 25%

Shrink and fraud remain among the top pain points that retailers face today. Key concerns include escalating shrink across stores and supply chains as well as growing rates of fraud, increasing prevalence of organized retail crime (ORC) schemes, and the trend toward more brazen criminals threatening the safety of customers and

employees. Accordingly, nearly 30% of retailers are currently budgeting or have budgeted spending for loss prevention solutions and about 30% of retailers are planning investments in computer vision or RFID within the next two years as retailers increasingly recognize the importance using multiple data sources and AI to battle fraud and loss more holistically (source: IDC's *Global Retail Survey,* June 2024).

Currently 30%+ of retailers are using data sources such as CV, store traffic data, inventory movement, merchandising, RFID, and third-party data to inform loss prevention efforts, but there is growing interest in the benefits of converging data sources into a unified stream and applying AI to enable actionable insights for shrink mitigation along with proactive strategies to prevent future loss. To enable this improved tool in the battle against loss, more than 40% of retailers plan to invest in new loss prevention platforms (either SaaS based or custom built with tech partners) that enable integration of multiple existing data streams and applied AI/analytics within the next two years to supercharge shrink mitigation.

Associated Drivers

- **The drive to automate** — Toward a data-driven future
- **AI-driven business models** — Moving from AI experimentation to monetization
- **Expanding digital security frontiers** — Fortification against multiplying threats

IT Impact

- Assess overall organizational data issues including data silos and data visibility across operations and develop plans to ameliorate issues to ensure full access to data and facilitated data integration.
- Implement data automation for faster, easier access to data and reduced burden on IT staff for data-driven loss prevention efforts.

Guidance

- Enable more holistic and improved loss prevention with enhanced loss intelligence data sets. Introduce new types of relevant internal and external data streams that can enrich existing data sets and develop a plan for seamless integration of data into a consolidated set.
- Invest in loss prevention solutions that apply actional AI to enriched, integrated data sets to gain data-driven recommendations and proactive strategies to prevent future fraud and loss. Consider whether a SaaS-based solution or custom-built solution better meets the needs of your organization.

ADVICE FOR TECHNOLOGY BUYERS

Retailers need more than the right people, technology, processes, and products to thrive in today's competitive climate. The winners are making bold moves and big bets, but not haphazardly. Staying the same — resting on the successes of the past — will not carry retail businesses through the next decade. The winners are testing new business models, studying consumers, creating new revenue streams, and partnering and collaborating more deeply. The path forward is being paved by the big enterprises including Amazon, Alibaba, Walmart, Carrefour, Kroger, Target, and Ahold but also by retail start-ups and pop-ups centered on unique products and assortments. Small, midsize, and regional companies need to create experiences that match or better customer and employee experience expectations everywhere. To succeed, retailers should do the following:

- **Be agile.** Continually evaluate the performance of key initiatives and adapt quickly if a pivot is necessary.

- **Apply data, analytics, and AI everywhere.** Automate decision processes, direct work, modernize edge IT, and address problems. Advanced analytics, AI, ML, and NLP will enable the shift from being data rich to data driven. Evaluate new revenue and growth initiatives including media networks, marketplaces, and fulfillment services to seize more value from real-time, contextualized engagement.

- **Grow loyalty.** Mobilize the distributed workforce. Empower associates to succeed. Empower people to stay.

- **Automate processes, but don't overdo workforce reductions.** Stores in particular need people to support customers' needs and to thwart theft. Technologies including computer vision, advanced loss prevention, and electronic shelf labels will improve service and reduce losses due to theft in stores. Mobility and AI-driven automation will squeeze more value from customer care and the frontline workforce with added engagement, community, and productivity.

- **Build community and invest in people (and productivity).** Use technology to connect people and share information communications, training, inventory, and mobility.

- **Improve end-to-end supply chain visibility and diversification.** Get more value by collaborating better and investing in modern technology architectures, with heavy reliance on network providers, cloud platforms, and managed services providers.

- **Make the connection between sustainability, traceability, and profitability.** Lead customers to choices that are good for the planet and people.

- **Refine and revise omni-channel data and technology strategies.** Continue to invest in improving how omni-channel commerce comes together. AI promises to enable the next generation of all parts of the shopping journey (discovery, purchase, fulfillment, returns, and service). AI, voice, AR/VR, and robotics will improve search, personalization, content creation, data accuracy, and customer service management.

EXTERNAL DRIVERS: DETAIL

AI-Driven Business Models — Moving from AI Experimentation to Monetization

- **Description:** As the generative artificial intelligence (GenAI) hype settles into a new digital business reality, it's critical for both tech buyers and vendors to prove that "AI is real," can be monetized, and is leading to concrete business impact and revenue streams. While tech buyers' GenAI attention in the initial AI everywhere stages primarily focused on efficiency and automation-oriented use cases, the longer-term ambition is to leverage AI (including GenAI) to enable new business models and open new revenue streams. At the same time, after all the initial excitement and rush to new launches/announcements, it's time for tech vendors to capitalize on 2023–2024 AI investments, move customers' POCs to concrete multiyear deals, and unlock exponential AI monetization. While they implement this, companies must keep in mind that AI is not without risks, especially when it comes to ethical AI and data privacy. Enterprises need to carefully consider the best use cases in order to implement AI effectively and to the benefit of the organization.

- **Context:** With intelligence becoming a key source of value creation, we are in the midst of an "intelligence revolution," in which AI and automation-oriented technology are major accelerators of business change. GenAI especially is a transformative force. This branch of AI enables machine-driven autonomous creation of new content, from images to music to even written text, with remarkable accuracy. Current business applications of GenAI include content and code generation, as well as personalized recommendations, but it is evolving quickly.

The Drive to Automate — Toward a Data-Driven Future

- **Description:** Broader automation use cases — which are different from just AI and generative AI — are now ubiquitous. Automating tasks that require human judgment and decision-making are becoming a key area of development. However, thoughtful implementation is crucial. This requires careful data

management, quality, governance, and storage. Data quality and governance will become paramount as organizations strive to maintain accuracy in automation tools and comply with increasingly stringent regulations like GDPR and CCPA. Efficient storage and retrieval of vast data sets are also essential, prompting IT to explore scalable solutions like object storage or data lakes. As more employees access data tools and insights, fostering a culture of data sharing will be key. Breaking down data silos will be crucial for achieving a unified view for automation processes. This also means that while data generally becomes more open and accessible, protecting key information related to health, for example, becomes central to value and risk. Provided that data is thoughtfully managed and silos are appropriately broken down, hyperautomation, the combination of multiple automation tools and technologies, may become more prevalent. This approach, which aims to automate as many processes as possible within an organization, can greatly improve efficiency and agility.

- **Context:** Businesses are rethinking how to employ automation to maximize operational efficiency — from automating assembly in manufacturing to identifying opportunities for food waste reduction in hospitality to improved CX in digital banking. And as data is embedded in the core of strategic capability for every organization, automation has become critical to scaling a digital business. This is evident in three domains: IT automation, process automation, and value stream automation — leading to autonomous operations, digital value engineering, and innovation velocity. From healthcare robotics to real-time data analytics, the applications are extensive.

Battling Against Technical Debt — Overcoming Hurdles to IT Modernization

- **Description:** As technology becomes increasingly central to business operations, the role of IT leadership is evolving into business leadership, highlighting the critical importance of managing technical debt. This debt, exacerbated by the rapid advancements and growing complexity of IT systems, not only inflates maintenance costs but also poses significant challenges to operational efficiency, profitability, and market adaptability. Accumulated technical debt manifests in software bugs, security vulnerabilities, and system inefficiencies, leading to increased operational costs, data breaches, and a loss of customer trust. For developers, working with outdated systems diminishes morale and productivity, while businesses face hurdles in adapting to new technologies or market demands swiftly. Specifically, in the realm of AI, "data debt" — stemming from poor data quality, inadequate architecture, and insufficient documentation — complicates maintenance, reduces system flexibility, and hampers accurate decision-making. These issues, along with the struggle to maintain legacy

systems and navigate technical heterogeneity, slow down development processes, delaying the launch of new features or products. There is a cascading effect that arises with technical debt (e.g., cloud laggards will become AI laggards).

- **Context:** In recent years, technical debt is a growing concern due to accelerated digital transformation, increased reliance on complex software systems, and the urgent need for rapid innovation. The pressure to deliver software quickly often leads to compromises in code quality, resulting in a backlog of maintenance issues. Businesses face mounting pressure to address outdated code and quick fixes to maintain system reliability, security, and scalability amid evolving technological demands. As systems become more complex, the cost and effort to address these issues escalate, impacting operational efficiency and innovation.

Regulatory Flux — Navigating Compliance Challenges in a Shifting Policy Landscape

- **Description:** With frontier technologies like generative AI, geopolitical concerns, and cyber-risks, the tech legal landscape is rapidly changing. The tech regulatory landscape is shifting, from privacy/cybersecurity laws such as NIS 2 in the EU to various policies incentivizing nearshoring of critical technologies such as South Korea's tax incentives for the "K-Semiconductor Belt." Beyond that, however, are laws that fundamentally can change the market landscape in technology. The EU's Digital Services Act (DSA) and Digital Markets Act (DMA) aim to increase transparency and accountability for online platforms and attempt to prevent anticompetitive behavior from "gatekeepers," or large online platforms of significance. In China, a number of firms have withstood major fines and penalties for anticompetitive practices, breaches of data security, and consumer privacy rights. Other emerging efforts in jurisdictions like the United States, India, and Australia mean that tech giants may be seeing themselves caught in stricter compliance challenges. Regulations, however, are notably inconsistent in their rollout. While some regulations lag behind technology development — especially notable in the case of artificial intelligence across many jurisdictions — others lead, such as tariffs on imports. Regulations also are of course subject to political change. More than 70 countries worldwide are set to vote in 2024, and polls predict sweeping change in political agendas. These changes are not only going to impact society and the economy in the short term but may also have wide-reaching, long-term effects.

- **Context:** Businesses must navigate an increasing number of regulatory rules. Even if it is not always the primary focus, tech is often a crucial part of these regulations. Most of these rules are intended to hedge against risks, but some are entrenched in geopolitical divides, so those firms that stay ahead of the

game and build resiliency will be best equipped to comply with these regulations. Moreover, regulations and policies are not always simply restraints — they are also often springboards for investment, with many regulations proposing tax subsidies and other kinds of incentives.

Expanding Digital Security Frontiers — Fortification Against Multiplying Threats

- **Description:** The era of digital business has resulted in a significant increase in the interconnectedness of devices, people, applications, data, and networks, alongside movement of workloads to the cloud. However, this progress means vulnerability to increasingly sophisticated cyberattacks. Phishing remains the most common form of cybercrime, and with the addition of powerful AI models, fooling victims is much easier than it used to be. Cybercrime as a service is also booming, allowing malicious actors to act with more agility and efficiency than ever before. The rise of AI also enables accidental insider threats — well-intentioned employees could unintentionally leak or access restricted, sensitive data when using services, a trend already noticeable with generative AI services. Finally, while quantum has not yet fully made it to the market, advances are marching forward, which also means that post-quantum cryptography is rising in importance. Organizations need to prepare for this and shift from reactiveness to proactiveness in their cyber-readiness and security postures. While this is already happening, the question remains as to whether organizations can sufficiently keep up with the pace of threats that are emerging. Cyber-resilience — the ability of an organization to anticipate, withstand, recover from, and adapt to any threats to its resources — is key for organizations to not only defend against cyberattacks but also prepare for swift response to and recovery from attacks.
- **Context:** According to the International Monetary Fund, cyberattacks have more than doubled since the COVID-19 pandemic. Cyberattacks have impacted all types of organizations, from governments to universities to businesses, and are oftentimes entangled in geopolitical motives. The increase in high-profile data breaches is furthermore leading to increased policy interventions regarding privacy and sovereignty. Organizations that are unprepared for cyberattacks may suffer various consequences, including data loss, financial implications, harm to their brand reputation, decreased employee morale, and loss of customers.

Customer Experience Squared — Consumer and Citizen Expectations for Digital Services

- **Description:** Businesses are reimagining how they engage with their customers, striving to provide seamless, personalized, and efficient service experiences —

and customers are demanding this. Their expectations are changing due to emerging technologies like AI-enabled devices, and customers are ever-increasingly savvy with digital. AI and automation technologies are at the forefront of revolutionizing customer service. AI-powered chatbots and virtual assistants are now capable of handling a wide range of customer inquiries with precision and personalization. These technologies improve response times and allow human agents to focus on more complex and sensitive issues, thereby enhancing overall customer satisfaction. The proliferation of mobile devices and IoT technology requires businesses to continue to adapt their customer service strategies to cater to a more connected, mobile-first audience. AR/VR, the metaverse, and 5G/6G will also influence end-user experience in the future. On top of this, omni-channel support is growing to ensure a cohesive, consistent experience across all platforms and touch points —social media, email, phone, or live chat. Businesses are leveraging data analytics and CRM systems to integrate these channels, providing a seamless transition and a holistic view of the customer journey. In the B2B2C model, this transformation is even more pronounced, as businesses must navigate the complexities of serving both the direct customers and the end consumers. Yet, despite the transformative effects of new technologies, the human element remains crucial in customer service. There is a growing emphasis on emotional intelligence and empathy in customer interactions. Training programs are increasingly focusing on developing these skills in customer service representatives, recognizing that understanding and addressing the emotional needs of customers can significantly enhance the service experience.

- **Context:** The landscape of customer service is undergoing a transformative shift, driven by advancements in technology and changing consumer expectations. The shift toward mobile and device-centric customer service strategies underscores the need for businesses to be agile and responsive, leveraging technology to meet customers where they are. Businesses now face the dual challenge of satisfying direct customers and end consumers in a digital, mobile-first world. Adapting to this landscape demands agility and a tech-savvy approach to meet evolving expectations and enhance connectivity.

AI-Driven Workplace Transformation — Building Tomorrow's Workforce Today

- **Description:** There are many pressures in the labor market, ranging from skills shortages to long-term demographic shifts. To increase automation and AI capabilities, digital skills are now in high demand, but the current supply of such skill sets does not match this demand. Despite talk about automation replacing jobs, company growth depends more on reskilling to effectively make use of

these investments. Expertise in security, cloud, and IT service management alongside AI skills are crucial. But enterprises can't live on IT skills alone — human-centric skills are also important, perhaps even more so than ever. Without proper socialization, awareness, and cross-organizational support, we may not see the innovation and productivity that GenAI and AI initiatives promise, and the overall enterprise IT strategy will be slow to deliver its needed results. To succeed, enterprises must also be open to organizational change and models that allow for greater trust and growth in their employees. Leaders must be accountable for laying the groundwork of communication, collaboration, creativity, and continuous learning, which will need to be pervasive for engineers and HR analysts alike. All of this lays the groundwork for long-term demographic shifts. Declining/aging populations means that the labor market is getting tighter. Fewer workers logically means that businesses will have fewer personnel. We have already seen talent shortages impacting businesses' operations. This will only get more competitive in the future. Business leaders are starting to fight against this, but success hinges on the ability of the enterprise to adopt better organizational strategies and models that allow for a more productive, collaborative, and learning-focused workplace.

- **Context:** The workplace has been shifting for some time, especially due to new modes of working, and the rise of AI and automation only further facilitates this shift. In the context of talent shortages, demographic changes, and other issues such as ESG concerns and ethical AI, it is clear that reskilling, upskilling, and overall transformation of workplace design are taking center stage. C-suite leaders and their teams must collaborate to recalibrate work culture, augmentation, and space/place planning to enable more secure, dynamic, and refined organizations of the future.

LEARN MORE

Related Research

- *Critical External Drivers Shaping Global IT and Business Planning, 2025* (IDC #US52438224, August 2024)
- *Generative AI Use Case Taxonomy, 2024: The Retail Industry* (IDC #US52337722, June 2024)
- *IDC MarketScape: Worldwide Retail Omni-Channel Payment Platform Software Providers 2024 Vendor Assessment* (IDC #US51168024, June 2024)
- *IDC MarketScape: Worldwide Retail Online Payment Platform Software Providers 2024 Vendor Assessment* (IDC #US49436923, June 2024)

- *IDC MarketScape: Worldwide Retail Loyalty Software Providers 2024 Vendor Assessment* (IDC #US51234024, June 2024)

- *IDC MarketScape: Worldwide Retail Customer Relationship Management Software 2024 Vendor Assessment* (IDC #US51036924, June 2024)

- *IDC Perspective: NRF's Big Show 2024 Confirms Continued Investments in Stores to Inspire and Fulfill Consumer Needs* (IDC #US51493224, March 2024)

- *What Do NRF Big Show 2024 Trends and IDC Survey Results Reveal About How Retailers Will Use Computer Vision and RFID for Shrink Reduction?* (IDC #US51932324, March 2024)

- *A Super Platform for the Modern, Omni-Channel Store* (IDC #US50750823, December 2023)

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