

# IDC FutureScape: Worldwide Retail 2024 Predictions

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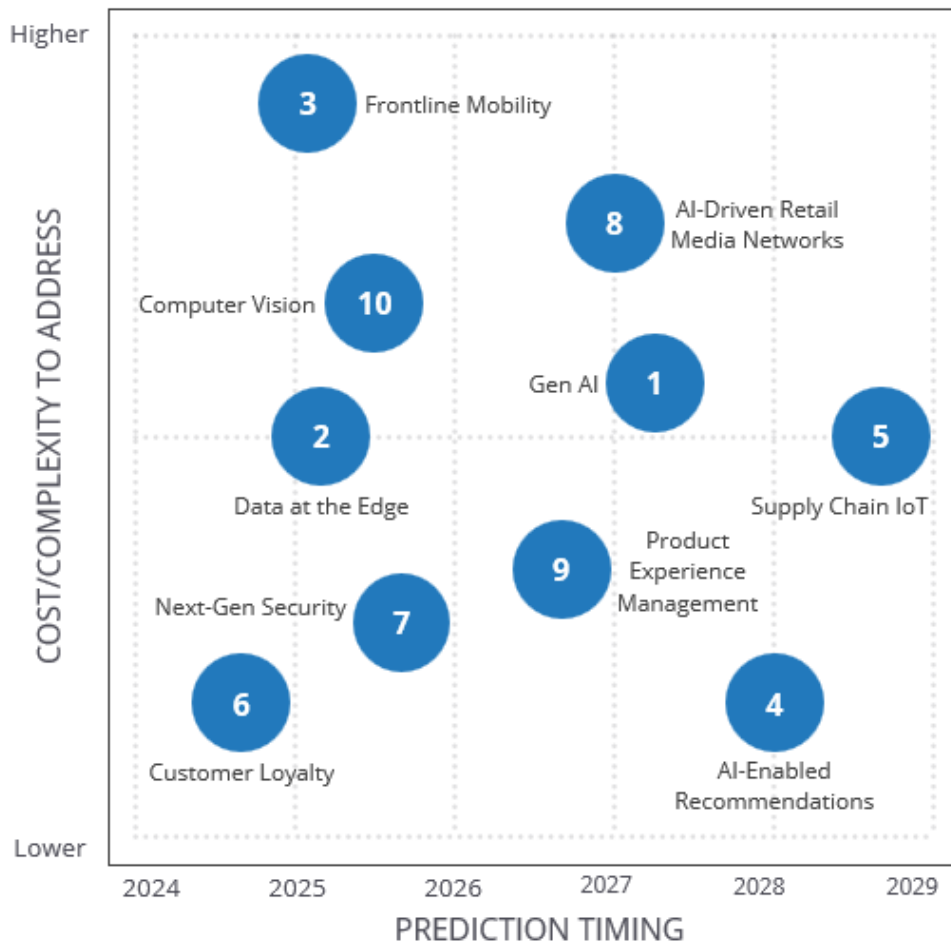
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## IDC FUTURESCAPE FIGURE

FIGURE 1

### IDC FutureScape: Worldwide Retail 2024 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

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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 2023 cautiously monitoring inflation, recession, 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 big budget and complex projects with longer timelines to value will restart or accelerate in the next year (source: IDC's *Global Retail Survey*, July 2023; global n = 840).

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, 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.
- **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, hardgoods, 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, voice, AR/VR, and robotics will improve search, personalization, content creation, data accuracy, and customer service management.

Our worldwide retail industry 2024 predictions are:

- **Prediction 1:** Through 2027, 95% of retailers will test/invest in GenAI to enhance product data, customer support, and customer experience initiatives.

- **Prediction 2:** By 2025, 40% of top-tier retailers will lean into decentralized infrastructure to put data at the edge to reduce costs and attain better security and operational control.
- **Prediction 3:** By 2025, 75% of retailers will enable clienteling, inventory/fulfillment processes, queue busting, mobile POS, and employee self-service by deploying mobile devices, wearables, and BYOD programs.
- **Prediction 4:** By 2028, 50% of retailers will offer AI-enabled contextualized recommendations to enhance customer engagement, increasing real-time interactions by 30% and overall conversion rate by 20%.
- **Prediction 5:** By 2028, 55% of grocery supply chains will deploy intelligent IoT to track the condition of perishables, reducing food waste by 25% and inventories by 15% and improving quality by 40%.
- **Prediction 6:** By 2024, 40% of retailers will adopt a multilevel loyalty strategy, leveraging a unified view of the customer, to increase retention rate by 20% and Net Promoter Score (NPS) by 35%.
- **Prediction 7:** By 2025, 50% of retailers will boost next-gen security technology spending by 20%+ to address key pain points including revenue loss from fraud/theft and more sophisticated cyberattacks.
- **Prediction 8:** By 2027, over 65% of retailers will use AI to provide contextual ad targeting to power next-gen Retail Media Networks to monetize zero-party and first-party data business models.
- **Prediction 9:** By 2027, 40% of retailers will move to product experience management SaaS platforms for consistency in product experience, boosting Customer Satisfaction Score (CSAT) by 20%.
- **Prediction 10:** By 2026, one-third of retailers will use computer vision to make self-checkout 75% less riddled by shrink and BOPIS and curbside service 25% less time consuming.

This IDC study provides IDC's top 10 predictions for the retail industry in 2024.

Leslie Hand, group vice president, IDC Retail and 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

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### Summary of External Drivers

- **AI everywhere** – Generative AI takes the spotlight
- **Cybersecurity and risk** – Building resilience against multiplying threats
- **The digital business imperative** – Competitiveness and outcomes
- **The drive to automate** – Maximizing efficiency and new opportunities
- **Global supply chain resiliency** – Push for diversification
- **Dynamic work and skills requirements** – New work mode era
- **Everything as a service intensifies** – Transforming models to drive change

## Predictions: Impact on Technology Buyers

### *Prediction 1: Through 2027, 95% of Retailers Will Test/Invest in GenAI to Enhance Product Data, Customer Support, and Customer Experience Initiatives*

Retailers will explore generative AI through experimentation, pilot projects, and proof-of-concept (POC) applications that leverage internal and third-party data science and analytic expertise for initial engagement. Over 77% of retailers in IDC's June 2023 *Future Enterprise Resiliency and Spending Survey* indicated they would be exploring or investing in generative AI. Retailer focus will be incremental experimentation to achieve efficiencies and realize practical returns before deep investment in the technologies. Explainability, AI/ML best practices, compute costs, and data infrastructure enablement will be key factors in whether retailers will be able to capture success through their investments.

Retailers will focus on product data, customer support, and customer experience use cases to start. Product data will overlap product descriptions, image generation, content curation, and product assortment selection, classification, and association. Customer support use cases will span capabilities such as chatbots, internal customer support routing, predictive customer service playbooks, and customer service knowledge management including training and data. Customer experience use cases will influence hyper-personalization, recommender systems, and marketing content that matches customer needs with customer relevancy. Specific characteristics of GenAI, such as generative capability, multimodal generation, human-machine interfaces, data grounding, an enormous body of knowledge, and the ability to auto-associate unstructured data will play an important role in adoption of GenAI. Business-driven outcomes including increased efficiency and cost reduction will offer first-generation GenAI retail applications added value beyond just applying a GenAI use case.

#### Associated Drivers

- **The digital business imperative** – Competitiveness and outcomes
- **AI everywhere** – Generative AI takes the spotlight
- **The drive to automate** – Maximizing efficiency and new opportunities

#### IT Impact

- Initially GenAI technology will require compute resources, which are expected to decrease over time due to higher levels of competition, more narrow AI application, and continued improvement in prompt engineering and maturity.
- GenAI will require expertise and GenAI-specific understanding of prompts, as well as implications of data science and analytics based on the specific problem use cases that are solved.
- Process mechanisms such as portfolio management, stage-gate project evaluation, and program management must be in place to enable effective flow-through of GenAI initiatives from design to experimentation phase and prototype deployments.

#### Guidance

- Expand GenAI experimentation through pilots, POCs, and deployed GenAI applications to validate realizable value objectives such as sales, margins, or customer satisfaction.
- Execute GenAI and evaluate results across different types of retail applications within the organization, without limiting opportunities.

- Build ROI readiness by ensuring that infrastructure and data are accessible, accurate, and sufficient for GenAI systems to drive appropriate decisions and recommendations. This means clean, relevant, actionable data sets and related AI training up front.

### ***Prediction 2: By 2025, 40% of Top-Tier Retailers Will Lean into Decentralized Infrastructure to Put Data at the Edge to Reduce Costs and Attain Better Security and Operational Control***

As retailers face significant challenges in moving to the more agile and resilient operations needed to remain competitive amid changing customer expectations and business conditions, there will be concerted new digital infrastructure investments to better deliver seamless omni-channel retail. Lack of technology scalability is the top internal challenge cited by retailers globally as they strive to reach their priority business goals of greater customer/employee experience and faster innovation. More than half of retailers plan to boost their physical infrastructure investments in 2024, making infrastructure the number 1 area for planned investments (source: IDC's *Global Retail Survey*, July 2023).

Along with the increase in infrastructure investments, *retailers are rethinking the optimal balance of cloud and edge/on-prem* to best support technologies such as mobile applications, advanced data analytics/AI, and computer vision, while ensuring agility and ability to deliver frictionless, secure omni-channel experiences. This year, 80% of retailers said they are considering or have deployed decentralized on-prem IT or edge computing. The top benefits retailers said they are seeking from edge implementations include greater visibility and control, better security, and cost reductions yielded from analyzing data closer to its source.

To optimize the mix of IT centralization/decentralization, retailers are pursuing multiple strategies, with 50%+ of retailers seeking to decrease dependence on public cloud providers, customizing their IT infrastructure to achieve cost reductions and implementing a hybrid delivery model, not due to legacy infrastructure but as a deliberate strategy (source: IDC's *Global Retail Survey*, July 2023). For example, more retailers striving to gain faster data insights for personalized promotions and targeted digital signage plan to deploy AI/ML or analytics workloads at the edge (source: IDC's *Worldwide Industry CloudPath Survey*, April 2023).

#### **Associated Drivers**

- **Cybersecurity and risk** – Building resilience against multiplying threats
- **The digital business imperative** – Competitiveness and outcomes

#### **IT Impact**

- IT should fully assess the balance of applications running on cloud or on edge/on-prem (if they have not already) to determine ways to optimize the mix for better experiences while achieving reduced costs.
- IT should also assess the benefits of moving specific priority retail applications back from cloud to on-prem or vice versa if the expected benefits from the initial placement are not realized, despite investment.

#### **Guidance**

- Achieve a more optimal balance between cloud and edge/on-prem to drive additional benefits beyond reducing costs and more seamless omni-channel operations, including better offline/back-up resiliency and greater scalability during business spikes such as holiday periods.

- Consider the mix of cloud and edge on a continuum; as needs and operations change, new adjustments to the optimal mix may be necessary.

### ***Prediction 3: By 2025, 75% of Retailers Will Enable Clienteling, Inventory/Fulfillment Processes, Queue Busting, Mobile POS, and Employee Self-Service by Deploying Mobile Devices, Wearables, and BYOD Programs***

Stores want – and need – to digitize, automate, and streamline omni-channel consumer experiences with mobility, IoT, digital signs, and computer vision and to engage the workforce by providing mobile data-driven search, tasks, scheduling, community, customer support, clienteling, and HR self-service. Of the 840 retailers surveyed in August 2023, 42% reported that the top tech investment priority for stores is mobile devices and wearables for store associates for clienteling, inventory/fulfillment information, queue busting, mobile POS, and employee self-service (source: IDC's *Global Retail Survey*, July 2023; global n = 840).

In the past year we have seen the retailer's appetite for capital-intense retail tech investment waning, but business optimism is returning, and with that comes the desire to be more future oriented. IT and the line-of-business teams agree – they must prioritize the digitization of business for both customers and employees. Inside stores and warehouses, digitization requires engaging with constituents through mobile devices and wearables.

Challenges abound: 42% of retailers worldwide are concerned that connectivity is too unreliable or slow to support in-store technology. But retailers plan to correct connectivity issues by boosting physical infrastructure investments in 2024, including networks, devices, and storage to conquer the current challenges in scalability, connectivity, and usability.

By 2025, most will have made investments in mobile devices and wearables or will have turned on BYOD programs to give more employees access to mobile applications and services.

#### **Associated Drivers**

- **The digital business imperative** – Competitiveness and outcomes
- **The drive to automate** – Maximizing efficiency and new opportunities
- **Dynamic work and skills requirements** – New work mode era

#### **IT Impact**

- IT should prepare for broad, distributed workforce mobility programs by improving connectivity to stores and distribution centers.
- IT should work with the merchandising, marketing, supply chain, and HR teams to build a business case for investment in mobile devices and wearables.
- IT should lead in the analysis of subsidized BYOD as an employee benefit.

#### **Guidance**

- Create seamless, frictionless customer experiences by embracing the way people live and work, bringing digital applications to customers on the store floor to help them find, buy, and take home what they want.
- Reduce labor costs and increase employee retention by mobilizing and automating workforce engagement.
- Prepare for the future by empowering the workforce today because mobile apps will unlock shelf-level information and connect employees to shoppers in the extremely near future.

## **Prediction 4: By 2028, 50% of Retailers Will Offer AI-Enabled Contextualized Recommendations to Enhance Customer Engagement, Increasing Real-Time Interactions by 30% and Overall Conversion Rate by 20%**

In past years, personalized product recommendations (i.e., suggested alternatives to what shoppers are browsing, complementary/related products) have proven to be a key tool for retailers to increase ecommerce revenues by driving higher sales conversions and average order value. These recommendations have been largely employed to stimulate online customer engagement and enhance online customer experience through a more convenient product discovery process. This trend is confirmed by IDC's August 2023 *Global Retail Survey*, which shows that 40% of retailers are investing, and will continue to invest, in the implementation of personalized product recommendations in the next three years. However, the traditional rule-based recommendations, which are seldom grounded in previous customer purchasing behavior and patterns, market trends, or a single person's preferences, are likely to lose efficiency and appeal for today's personalization-demanding consumers.

Retailers will increasingly rely on AI-driven product recommendations engines to predict customer intent by factoring zero- and first-party data about each customer profile and its dynamic state based on what is happening, needed, and expected in the "now." In addition, by integrating with stock information, inventory availability, and purchasing data across channels, AI algorithms will enhance the current omni-channel engagement strategies of retailers, and they will be leveraged by store associates and digital agents to engage, assist, and/or recognize loyal customers in real time. Today, retailers such as Zalando and IKEA have already adopted recommendation algorithms to streamline customers' browsing experience across their complex and wide ecommerce product catalog. In the future, IDC expects that the ferment around generative AI will complement and push further the adoption of AI-driven product recommendations thanks to GenAI's ability to generate content such as dynamic ecommerce layouts and personalized recommendations widgets.

### **Associated Drivers**

- **AI everywhere** – Generative AI takes the spotlight
- **The digital business imperative** – Competitiveness and outcomes
- **Dynamic work and skills requirements** – New work mode era

### **IT Impact**

- IT should coordinate with and involve the line of businesses to develop an enterprisewide CX focused on a customer-led culture transformation.
- IT needs to embed AI and ML analytics as the foundations for content personalization, contextualized experiences, shopper assistance, and products inspiration – ensuring consistency across interfaces.
- IT should provide employees and store associates with the skills necessary to best leverage AI via clienteling tools and mobile interfaces.

### **Guidance**

- Allow full visibility of customer data and inventory to reduce out of stock and improve CX-enabled micro-merchandising strategies.
- Leverage AI across enterprisewide customer experience business processes to integrate back end with the front end.
- Train talent in a digital retail business environment to accelerate repetitive tasks while focusing more on customer needs and expectations, adding the human touch to personalization.



## ***Prediction 5: By 2028, 55% of Grocery Supply Chains Will Deploy Intelligent IoT to Track the Condition of Perishables, Reducing Food Waste by 25% and Inventories by 15% and Improving Quality by 40%***

Today's global supply chains are complex and subject to a multitude of disruptions from end to end. Disruptions range from weather events and labor shortages to supply chain partners that don't know each other to asset-specific issues such as truck breakdowns and equipment failures. These challenges present even greater risk to perishables – which also includes pharmaceuticals and flowers – because of the need for continuous temperature control to preserve freshness and product safety at all points along the journey. This need extends all the way back to boat, farm, and field. The perishables supply chain is further compromised by global warming; for example, rising ocean temperatures are reducing seafood populations and changing the "starting" condition of seafood. These challenges contribute to massive food waste. 30-40% of the food supply in the United States is thrown away annually, according to the USFDA. This happens at every stage of food production, distribution, and post-purchase, with food as the single-largest category of material placed in municipal landfills.

To build a supply chain that is sustainable, trustworthy, and fresh – one that is profitable for all stakeholders and that also delights the consumer – requires visibility into product condition at all times throughout its journey, including insight into "blind spots" where freshness is often lost as product transitions from boat to processor, from field to shed, from truck to warehouse, in the warehouse, or on the loading dock. When we consider the total available "shelf life" of perishables, time spent in less-than-optimal conditions quickly degrades product freshness and limits the time span over which food is saleable. Consumer 24 x 7 online buying habits throw even more uncertainty into the equation, with third-party, last-mile delivery partners throwing in another opportunity for product degradation. IoT/RFID and other sensor technologies that offer continuous end-to-end supply chain tracking can solve this problem by enabling retailers to gain insight into the condition of the product at every stage of its life cycle. In addition, AI will grow in importance to gain further insights from aggregated data to enable better decisions, such as which suppliers provide fresher product or how differences in temperature even within compliance range can lead to fresher product.

According to IDC's 2023 *Global Retail Survey*, 34.6% of retailers are planning to invest in IoT/RFID technology in the coming three years to support tracking and tracing. When perishables' data can be tracked in real time by business process or custody owner and shared among partners, the opportunities to improve business processes and food freshness abound, extending to better improved quality and freshness, inventory management, risk mitigation, consistency and trust among partners, scenario modeling, scorecarding, improved forecasting, better decision making, enhanced brand reputation, and increased consumer trust and loyalty.

### **Associated Drivers**

- **The drive to automate** – Maximizing efficiency and new opportunities
- **Global supply chain resiliency** – Push for diversification
- **AI everywhere** – Generative AI takes the spotlight

### **IT Impact**

- IT must facilitate the transfer and translation of data from IoT and other sensors to edge technologies that can collect data, process it onsite where necessary, and send it to systems in real time to enable visibility and insight into current conditions.
- IT needs to enable the sharing of data collected by different business entities/custody owners across the end-to-end perishables supply chain in a secure environment.



- IT needs to provide analytical tools to gain insights from data that can be used to modify and improve processes across the perishables supply chain journey.

## Guidance

- Use IoT sensors on perishables to directly and continuously measure and track and trace temperature, humidity, and other conditions in real time across the end-to-end supply chain to ensure freshness, quality, and sustainability.
- Analyze data in the aggregate to glean insights about where product falls out of compliance or encounters other problems.
- Use insights from analysis to change processes and operations to preserve freshness optimally, as well as to make determinations about when a product's freshness cannot be preserved well enough throughout its journey to be worth the cost and resources involved in bringing it to market.

### ***Prediction 6: By 2024, 40% of Retailers Will Adopt a Multilevel Loyalty Strategy, Leveraging a Unified View of the Customer, to Increase Retention Rate by 20% and Net Promoter Score by 35%***

Personalization and experience are vital today to successfully engage and retain customers through relevant loyalty programs. In a continuously evolving retail landscape, characterized by growing competition and economic uncertainty, consumers are becoming more inclined to switch brands. Meanwhile, the traditional points- or promotions-based notions of loyalty are losing their effectiveness, both because of the lack of differentiation from the competition and because of the low appeal and value from the customer's perspective. However, especially now that consumer privacy regulations are more stringent and big tech platforms restrict the use of third-party cookies, the success of retailers' loyalty strategies becomes fundamental to collect first-party customer data. IDC's 2023 *Global Retail Survey* shows that 35% of worldwide retailers plan to implement multilevel loyalty programs in the next three years, aiming at reinventing and evolving their current loyalty strategies.

With multilevel loyalty strategies that are grounded in zero- and first- party customer data such as purchase history and channel preferences, and operationalized by AI and ML algorithms, retailers will be able to achieve higher levels of personalization, enhancing the effectiveness and relevance of their current loyalty strategies. Furthermore, IDC predicts that retailers will increasingly rely on immersive technologies and embed them into their current loyalty strategies to deliver contextually rich experiences that appeal to the customer of the future (i.e., Alpha and Gen Z). For example, Web3 can support numerous use cases related to loyalty and community building such as token-gating experiences, events, lounges, and exclusive product releases. Retailers such as Ralph Lauren and Lacoste have already adopted Web3 digital relationship management tools (i.e., Digital Product Passport) that, though NFT-backed physical products issued upon purchase, create a new channel of communication and engagement with the brand, as well as a stream of zero-party data to be used for personalization. Multilevel loyalty strategies will help retailers embed personalization and experience into their loyalty programs, enhancing their ability to deliver experiences that are tailored to the customers' needs and therefore more relevant to them, significantly improving KPIs such as customer retention rate and customer lifetime value (CLV).

## Associated Drivers

- **The digital business imperative** – Competitiveness and outcomes
- **AI everywhere** – Generative AI takes the spotlight

## IT Impact

- IT should create the equivalent of a data clean room that requires a stronger collaboration between sellers, brands, and suppliers even beyond zero- and first-party data.
- IT should implement a modular IT infrastructure that allows the integration of loyalty solutions and the introduction of NTFs in combination with the requirement of the Digital Product Passport.
- IT needs to embed AI and GenAI to manage customer profiles and automatically and proactively suggest the adequate loyalty program.

## Guidance

- Have a 360-degree view of the customer to deliver a consistent and unified customer engagement strategy, recognize loyal customers, and personalize their customers' experiences throughout their shopping journey.
- Modernize and integrate existing loyalty programs, delivering immersive experiences that are easy to use and attractive across customer segments and especially relevant to new generations' values and shopping behaviors.
- Enhance customers' advocacy and trusted relationships with preferred brands via diversified loyalty offerings that span the points-values rewards continuum.

### ***Prediction 7: By 2025, 50% of Retailers Will Boost Next-Gen Security Technology Spending by 20%+ to Address Key Pain Points Including Revenue Loss from Fraud/Theft and More Sophisticated Cyberattacks***

Security issues remain a top pain point for retailers as the threat landscape continues to worsen across both digital and physical retail. Retailers globally cited security/cybersecurity risks as one of their top external challenges for staying competitive in today's retail environment, especially amid growing sophistication in organized retail crime (ORC) activity and evolving cyberattack techniques impacting retailers' bottom line (source: IDC's *Global Retail Survey*, July 2023). Ransomware attacks remain a key area of concern after attacks spiked dramatically in 2022. While the ransomware attack rate has gone down a bit in 2023, likely due to more proactive prevention techniques and security investments, still more than half of retailers reported experiencing a ransomware attack within the past 12 months. NRF's 2022 *Retail Security Survey* found that retail crimes of all varieties continue to rise, including theft, loss, cybercrimes, and fraud across all channels.

Retailers are reacting accordingly by protecting security spending and boosting omni-channel security investments. Security/risk/compliance investment is the number 1 IT spending area that retailers cite as most immune to budget reduction regardless of the economic environment; and 35% of retailers said that reacting to major cybersecurity events/mandates is most likely to force significant changes to their digital infrastructure strategy over the next 18 months (source: IDC's *Future Enterprise Resiliency and Spending Survey, Wave 7*, August 2023).

The quickly evolving threat landscape (with more sophisticated attack methods impacting today's omni-channel retail environment) requires new modes of prevention and protection. At the same time, many retailers are grappling with IT staff and skill shortages that prevent putting optimal security in place. Next-generation security technologies offer better defenses, with greater automation, by integrating threat data from various points in central warehouses and increasing employment of AI for more predictive and preventative insights. Retailers are increasingly looking to these more information-based, predictive defenses for countering the full range of digital and physical threats.

## Associated Drivers

- **AI everywhere** – Generative AI takes the spotlight
- **Cybersecurity and risk** – Building resilience against multiplying threats

## IT Impact

- IT should review a range of next-gen security technologies that offer more integrated security data and AI/analytics to assess which solution investments will be most worthwhile to address their biggest security pain points across channels and to optimize defenses against current and emerging threats.
- IT should consider managed security services or solutions offering greater automation to address any gaps in IT skills or staffing.

## Guidance

- Consider both customer and employee experience when choosing next-gen security; opt for a solution that provides the utmost protection without creating undue friction.
- Stay aware and prepare for the new security risks that will come with the AI-driven solutions retailers are embracing for enhanced customer experience and personalized marketing.

### ***Prediction 8: By 2027, Over 65% of Retailers Will Use AI to Provide Contextual Ad Targeting to Power Next-Gen Retail Media Networks to Monetize Zero-Party and First-Party Data Business Models***

Zero-party and first-party data models have become critical intellectual property for retailers, especially in the context of retail media networks (RMNs). Collected directly from the customer through loyalty programs and self-service opportunities, up-to-date customer and product information is captured by retailers at the time of purchase. Contextual ads that enable more targeted personalization are data heavy. Challenges exist in managing such enormous amounts of data as more and more retailers adopt retail media networks specifically for contextual ads. Retailers are counting on rapid growth for RMNs. Over half of retailers in IDC's 2023 *Global Retail Media Survey* see or expect to see double-digit growth in RMN revenue this coming year, with over 92% expecting over 5% growth.

Rapid growth and reliance on data means much more managed data in the retailer's business model. AI tools will be critical in powering and managing contextual ad targeting, especially for larger retailers, such as H&M or Target, with over 100 million members in their loyalty programs. Monetizing ads will continue to require a variety of tools to leverage RMNs, and as evolution to programmatic buying continues, predictive AI technology will be the only reasonable mechanism to manage the depth and breadth of ad placement across properties, sites, and customers.

## Associated Drivers

- **AI everywhere** – Generative AI takes the spotlight
- **The drive to automate** – Maximizing efficiency and new opportunities
- **Everything as a service intensifies** – Transforming models to drive change

## IT Impact

- Retailers will continue to adopt RMNs at a rapid clip. Multiple consortiums will consolidate smaller retailers into larger buying groups to manage ads more effectively using technology solutions.

- Retailers will resort to ad agency support for initial RMN launches but will attempt to shift IT development, SaaS-based management, and ownership of the RMNs internally to capture higher revenue value from advertiser relationships.
- IT teams will leverage demand-side platforms (DSPs) and supply-side platforms (SSPs) as intermediate steps to eventually build programmatic buying capabilities. DSPs and SSPs will increase third-party relevancy as retailers launch their RMN programs, but eventually, these will be customized for the retailer.
- Digital in-store advertising will be the most significant impact technically, as retailers seek new ways to drive ad revenue inside one of their most valuable assets – retail stores – driving IT support and maintenance requirements.

## Guidance

- Invest in AI tools, infrastructure, marketing expertise with AI, and third-party support through agencies, consultancies, ISVs, and SIs to help build and educate an effective RMN delivery workforce.
- Develop automated and AI-powered methods to make it easier to engage with advertisers on their terms, preferably using standards or simplified ad structures to incorporate into already existing ad buying tools, such as DSPs.
- Build and experiment with expanding more than just offsite advertising, such as in-store advertising and digitizing ads within all relevant touch points. Ensure your retail media data systems are up-to-date and secure.

## ***Prediction 9: By 2027, 40% of Retailers Will Move to Product Experience Management SaaS Platforms for Consistency in Product Experience, Boosting Customer Satisfaction Score by 20%***

Customer centricity is a key element in the strategy of successful retailers. With growing operational complexity and competition, product focus is becoming essential for differentiation. Therefore, retailers are starting to consider product experience (PX) to be as important as customer experience in their strategic thinking. Great CX depends on and relates to equally great PX, which is crucial for increasing customer satisfaction, engagement, and loyalty. Retailers need to ensure consistent product journeys across the value chain, which has become increasingly complex as touch points with customers proliferate and consumer expectations evolve.

Retailers need to adopt tools to manage product information and life cycle. According to IDC Retail Insights' 2023 *Global Retail Survey*, some 36% of retailers worldwide plan to implement product experience management (PXM)/PIM in the next two years. IDC predicts that this adoption will grow further in the following years, with a conservative estimate of 40% of global retailers using PMX SaaS platforms by 2027. By adopting and integrating PXM and PIM systems into their technology stack, retailers can gain significant benefits such as streamlining data management, improving data accuracy, and supporting omni-channel commerce, which should lead to better customer experience. PXM/PIM systems are vital tools for modern retailers that want to remain competitive in a more data-driven and digital retail environment.

## Associated Drivers

- **The digital business imperative** – Competitiveness and outcomes
- **Everything as a service intensifies** – Transforming models to drive change
- **The drive to automate** – Maximizing efficiency and new opportunities

## IT Impact

- IT should integrate PXM/PIM systems seamlessly with the whole retail technology stack, improving product data access and distribution.
- IT teams should establish strong data management practices to handle and keep product information consistent across different platforms and channels, ensuring accuracy and reliability.
- IT should create a single location for all product data to form a single source of truth that feeds product information to various channels.

## Guidance

- Ensure seamless integration of the PXM/PIM solution with your company's technology architecture by working with technology partners and solution providers.
- Define data management practices by collaborating with relevant executives within your organization and involve stakeholders across the whole organization to ensure product data accuracy and consistency.
- Manage product data and ensure consistent product information across channels by collaborating with partners among brand manufacturers and suppliers.

### ***Prediction 10: By 2026, One-Third of Retailers Will Use Computer Vision to Make Self-Checkout 75% Less Riddled by Shrink and BOPIS and Curbside Service 25% Less Time Consuming***

Rapidly developing AI technologies have lit a fire under retail decision makers, offering new ways to meet customer expectations and drive down operational costs and losses due to shrink. One AI technology that is well positioned to help retailers drive growth by capturing new, rich threads of data; personalizing customer engagement; improving employee experience; and reducing shrink is computer vision. Checkout automation and shrink reduction have dominated retail discussions about the value of leveraging computer vision in retail stores in 2023. IDC's 2023 *Global Retail Survey* revealed that over the next three years, 35% of retailers plan to invest in computer vision for frictionless shelf-checkout or automated checkout, 34% for fraud and loss prevention, and 37% for traffic intelligence and queue management.

One of the most commonly thought-of use cases for computer vision is automated checkout, in which the system tracks what a shopper selects using cameras and then facilitates payment via app, kiosk, or gated entry without the need to scan individual items to leave the store; but this example is the toughest use case to justify and deploy. Computer vision at self-checkout to reduce shrink or speed up transactions or implemented at curbside to see shoppers arriving for a pickup are simpler use cases to tackle. Computer vision AI at self-checkout integrates with a retailer's POS systems and identifies customer behavior associated with theft and loss (such as missed scans, basket-based loss, product switching), nudges and prompts customer actions at the kiosk to discourage theft, and alerts associates about actions that can be taken to prevent loss. The technology also validates item identification on the scale, reducing the number of manual searches, alerts, and interventions required, improving the self-checkout experience for customers and associates, and allowing shoppers to move through checkout faster.

As self-checkout becomes a dominant strategy to battle the high cost and scarcity of labor in stores, computer vision will likely be one tool among an arsenal of technologies and approaches that retailers employ to fight shrink and improve customer satisfaction at checkout. With shrink eating away at profits, the cost justification is getting easier. The NRF estimates retail losses from theft will exceed

\$100 billion this year, and the losses are starting to show up on retailers' balance sheets. Retailers including Target, Dick's Sporting Goods, Kohl's, Dollar Tree, Home Depot, and Ulta have noted in investor presentations that theft is affecting profit. When CV is applied, significant benefits can be identified. IDC believes that by 2026, one-third of retailers will use computer vision to make self-checkout 75% less riddled by shrink.

### Associated Drivers

- **The drive to automate** – Maximizing efficiency and new opportunities
- **Dynamic work and skills requirements** – New work mode era
- **The digital business imperative** – Competitiveness and outcomes

### IT Impact

- IT should consider CV investments (near or long term) when making decisions about hybrid edge and cloud deployment because many AI-driven workloads require on-premises capacity.
- IT should find CV platforms that simplify data management and sharing across use cases, even when starting the deployment of the first CV use case for the organization because use cases for CV and the data will expand and grow.

### Guidance

- Invest in computer vision to improve customer experience, reduce shrink, and capture data that may otherwise remain invisible.
- Test CV in stores to make the business case clear; the investment in CV implementation can be cost-prohibitive for some retailers, as can the investment in retrofitting stores and reengineering processes.
- Consider which AI computer vision solutions are most relevant to stores and customers, given the current state of organizational readiness. The most talked-about use case may not be the most relevant for your store.

## ADVICE FOR TECHNOLOGY BUYERS

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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, and 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, 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. Build community by using technology to connect people and share information. Invest in training, inventory awareness, and mobile-first tools. Empower associates to succeed.
- **Automate processes, but don't overdo workforce reductions.** Stores in particular need people to support your customer's 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.
- **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

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### AI Everywhere – Generative AI Takes the Spotlight

- **Description:** With intelligence becoming the primary source of value creation, we are on the verge of the "Intelligence Revolution," in which artificial intelligence (AI) and automation-oriented technology will be the main accelerators of business change. In the realm of "AI everywhere," generative AI (GenAI) emerges as a transformative force, potentially revolutionizing the future. This branch of artificial intelligence enables a machine-driven autonomous creation of new content, from images to music to even written text, with remarkable accuracy. Early applications of GenAI have showcased its potential in fields such as creative arts, content and code generation, and personalized recommendations. However, it also raises concerns regarding bias and privacy: AI algorithms can inadvertently perpetuate biases and pose threats to personal data. As a result, regulation becomes crucial to ensure responsible and ethical use of GenAI. Despite these challenges, the possibilities are vast, ranging from improved customer experiences to innovative problem solving. Harnessing the power of GenAI and navigating its associated complexities have the potential to shape the future of industries and drive advancements in the AI-driven world.
- **Context:** Businesses are already jumping to get a piece of the AI pie, afraid to miss out on the opportunities it presents. Although we are in the early days, monetization and scale of AI solutions are expected to evolve rapidly. However, this comes during a time of relative economic uncertainty and increasingly constrained IT budgets. Furthermore, AI is not without risks, especially when it comes to ethical AI and data privacy, and companies need to carefully consider the best use cases in order to implement AI effectively.

### The Drive to Automate – Maximizing Efficiency and New Opportunities

- **Description:** Broader automation use cases – beyond just generative AI – are now ubiquitous. Now that data is embedded in the core of strategic capability for every organization,



automation is critical to scaling a digital business and is evident in three domains: IT automation, process automation, and value stream automation – leading to autonomous operations, digital value engineering, and innovation velocity. Industrial organizations have spent the past few years evolving toward the Fourth Industrial Revolution (Industry 4.0) through the use of industrial automation and intelligence. Thoughtful implementation is more important than ever as data becomes embedded in the strategic core of every organization. Automation technologies such as robots and drones are being used increasingly in the military and healthcare sectors. Given this boost in automation, data is increasingly precious, and privacy must be prioritized and security enhanced. In some cases, automation has also led to concerns over the future of work – whether it will enhance or take away.

- **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 improving customer experience (CX) in digital banking. IT will need to continue to assess new technologies and approach automation investments strategically, both within the walls of the organization and in the field. Among industrial organizations, IT/OT convergence will necessitate shared responsibility across teams for automation priorities and implementations.

## Global Supply Chain Resiliency – Push for Diversification

- **Description:** Despite gradual easing of supply, supply chain disruptions overall continue to impact most markets and resiliency remains a top priority. Whether due to geopolitical issues (Russia-Ukraine War-driven energy supply scenario, semiconductor chains shifting due to China-Taiwan dynamics, etc.), broader economic concerns, or the impact of demand volatility on raw material costs (e.g., access to key components for tech products), the global supply chain remains at a critical inflection point. Furthermore, national economic security, inflation and interest rates, data sovereignty, cybersecurity, and climate change are critical factors in determining how to approach the future of supply chains. Many of the old methods have proven ineffective, so companies are looking for new approaches to improve resilience. These include multisource orchestration and multi-scenario adaptation, better visibility and agility, and business process automation. The global supply chain will persist, and it always does, but policymakers and business leaders are looking to better balance global, regional, and local solutions, shortening supply chains where possible and diversifying to reduce risk.
- **Context:** The IT supply chain is especially affected by global supply chain policy and volatility. Given the excitement around generative AI especially, GPUs, semiconductors, and other silicon-based technologies are more crucial than ever. As key components for technology products are limited in supply and subject to volatility, businesses will need to continue to strategize to build resilience and diversification.

## Cybersecurity and Risk – Building Resilience 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 has led to a broader vulnerability to cyberattacks. Ransomware attacks have multiplied exponentially, the dark web is teeming with low-cost, high-quality hacking services, and generative AI is threatening with more believable, humanlike phishing and pretexting attempts. A shortage of skilled cybersecurity professionals presents a continuous challenge for organizations to respond effectively. 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.

- **Context:** An organization that is unprepared for cyberattacks may suffer various consequences, including data loss, financial implications, harm to the organization's brand reputation, decreased employee morale, and loss of customers. Cyber-resilience – the ability of an organization to anticipate, withstand, recover from, and adapt to any threats to its resources – is key for an organization to not only defend against cyberattacks but also prepare for swift response and recovery to attacks.

## The Digital Business Imperative – Competitiveness and Outcomes

- **Description:** A digital business sees value creation based on the use of digital technologies for both internal and external processes, including customer engagement, employee experience, and product and services development. Building and leading a digital business is imperative for organizations to be competitive. While certain operational aspects may always have a nondigital component, digital businesses prioritize a digital-first strategy that aligns all parts of the business and IT landscape with digital workflows to drive value and growth. The development strategies for both digital and nondigital assets now require leveraging multiple channels for the digital business to obtain support or funding. This places a strong emphasis on providing digital experiences for customers and citizens, employees, and partners and necessitates a shift toward fully digital operating models and resilient supply structures enabled by digital technology. The focus of a digital business is increasingly on delivering measurable outcomes. Businesses that have recognized the value of digital anticipate maintaining or even increasing their investment in technology, even in times of economic uncertainty.
- **Context:** As more and more enterprises embrace digital strategies and technology, they prioritize technology investments that drive innovation or allow for competitive differentiation. Technology is no longer viewed as a tool to keep the business running, but it is the foundation for building new revenue-generating experiences and products. Laggards will need to adapt quickly and develop their digital road maps and embrace a digital business platform. Identifying top digital revenue opportunities that deliver value will be crucial for overall business success and implementation of organizational digital-first strategies.

## Everything as a Service Intensifies – Transforming Models to Drive Change

- **Description:** The concept of "everything as a service" ("XaaS") is driving change across all sectors and ecosystems, affecting both the supply side and the demand side of businesses. Organizations are adopting as-a-service models at different speeds out of necessity, but the complex delivery strategies make requirements more complicated and the impacts less predictable. The shorter decision cycles enabled by on-demand services allow industry leaders to approach things differently, but the commitment models are fundamentally changing. On the supply side, there is a rising demand and higher customer expectations. As a result, suppliers are compelled to convert and enable their offerings more quickly using a secure services-based model. Buyers are now making decisions based on commitments to measured outcomes in terms of optimization, reliance, and financial models. Architecture and solution strategies are now critical to the service provider, where proprietary systems that are being maintained or migrated can materially impact the efficacy of the as-a-service solution. Leaders face the challenge of finding new financial, operational, and governance models that support a successful transition to an as-a-service approach. Critical factors for organizations to thrive through the as-a-service change landscape include solution control, contractual clarity on roles and responsibility, and accountability alignment including geoeconomic assurance and data.

- **Context:** To deliver optimally, companies are looking to better manage their as-a-service offerings. They're changing product design, delivery, and pricing alongside adjusting management and operations to best optimize as-a-service technology. This is the new model for the tech industry, and suppliers and buyers will need to adapt accordingly. This includes developing cloud-based control to manage provisioning, continuous usage tracking, and architectural efficiency.

## Dynamic Work and Skills Requirements – New Work Mode Era

- **Description:** In the wake of COVID-19 pandemic-driven accelerated work transformation, enterprises continue to face dynamic work conditions. These range from lack of skilled employees to codifying more flexible ways of working that rely on a broad range of technologies and services. In some regions, most notably in Asia/Pacific, organizations are focused on building more secure and technically sophisticated office environments. In North America, remote and more flexible work models are driving investments in technologies that support collaboration across and within disparate work environments. Across this spectrum of work models, organizations are investing in infrastructure, hardware, software, and services to enable and manage increasingly automated ways of working. These include automated remote onboarding, learning in the flow of work, and use of AI and generative AI to facilitate basic tasks and workflows. While the pandemic drew much needed attention to the employee experience, enterprises have shifted to aligning employee requirements more plainly to strategic business goals. The key challenge around the globe has been to find or upskill/cross-skill employees to scale and meet the demands of complex, automated work processes. Flexible work models continue to change to become even more agile, with digital workspaces highlighting skills, workforce management, automation, changing demographics, and as-a-service talent resourcing.
- **Context:** New modes of working are now intrinsic to leadership and organizational resilience and go well beyond traditional staff planning methods. They are also having an impact on frontline workers who have historically been neglected in favor of higher-paid front- and back-office peers. New work models require agile cross-functional teams – including HR, IT, LOB, finance, facilities management, and operations – to engage top talent and meet client brand expectations. While headlines debate the fate of environmental, social, and corporate governance (ESG) initiatives, it's clear that environmental concerns will be an embedded element of workplace design and implementation of flexible work models. C-suite leaders and their teams must collaborate to recalibrate work culture, augmentation, and space/place planning to enable more secure, dynamic, and refined work models of the future.

## LEARN MORE

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### Related Research

- *Critical External Drivers Shaping Global IT and Business Planning, 2024* (IDC #US51057623, September 2023)
- *Achieving ROI With GenAI* (IDC #US49316123, September 2023)
- *IDC PeerScape: Retail Intelligence Practices to Apply GenAI Across Use Cases* (IDC #US51224222, September 2023)
- *Global Retail Survey, 2023: Findings and Implications* (IDC #EUR151198923, September 2023)

- *IDC's Worldwide Digital Transformation Use Case Taxonomy, 2023: Experiential Retail* (IDC #US50023223, August 2023)
- *IDC Retail Media Network Survey* (IDC #US50985922, June 2023)
- *The Key Digital Infrastructure Takeaways from NRF 2023* (IDC #US50441923, March 2023)

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