SPOTLIGHT
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This Spotlight explores the importance of leveraging data, AI, and advanced analytics to meet the new demands of retail and the strategic benefits of unified omni-channel commerce platforms to enable data-driven retailing to compete successfully in today's environment.

The Time Is Now for Retailers to Modernize Tech to Achieve AI-Fueled, Data-Driven Retail Success

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Introduction

Retailers can no longer afford to delay digital modernization. The pace of change in customer behavior, operational demands, and competitive pressure has accelerated to a point where legacy systems are actively limiting growth — and in many cases, risking competitiveness.

AT A GLANCE

KEY TAKEAWAY

Adopting a super platform approach can help enable seamless omni-channel retailing and real-time, data-driven insights that can drive competitive success in today's environment.

Today's Retailers Face Complex Challenges

Shoppers now expect real-time inventory, personalized engagements, and frictionless transactions across all channels, and they are willing to walk away from retailers that don't meet their expectations. Retailers unable to deliver these experiences are falling behind those that can. According to IDC's June 2024 *Consumer Sentiment Survey*:

- 45% of shoppers globally want their retailers to provide personalized promotions/offers.
- 50% of shoppers expect accurate, real-time inventory information across all channels.
- About 45% of shoppers are willing to walk away from a retailer that does not offer their preferred payment or buy now, pay later (BNPL) type.

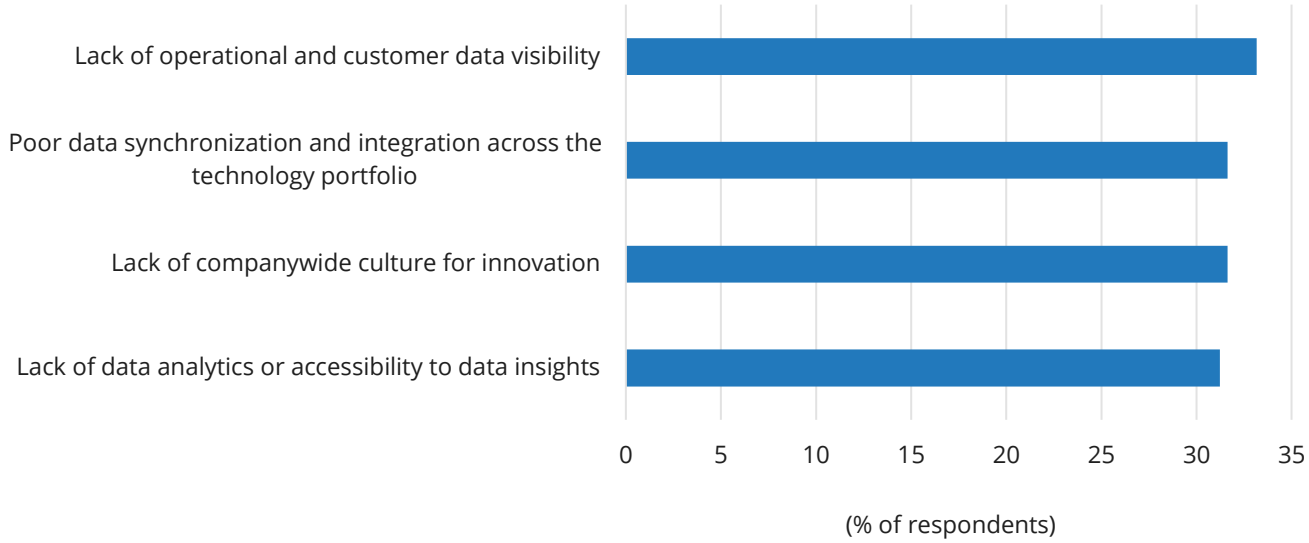
At the same time, internal and external pressures are intensifying. Labor shortages, rising shrink, and compressed margins are making manual, disconnected, and reactive operations unsustainable.

Yet many retailers are hampered in addressing the industry's new needs due to legacy IT challenges including siloed systems, monolithic/inflexible platforms, and the lack of data visibility and real-time data access (see Figure 1). These factors make it nearly impossible to fully leverage real-time, data-driven AI.

Retailers that delay modernization risk falling further behind as competitors turn to composable, AI-enabled platforms to adapt faster, serve better, and operate smarter. The urgency is accelerating as the gap between those organizations acting now and those holding back widens.

FIGURE 1: ***Top Internal Challenges to Staying Competitive***

Q *What Holds Retailers Back?*



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Source: IDC's Global Retail Survey, June 2024

Why the "Super Platform" Framework Is Critical for Success in Retail

To stay competitive, retailers with legacy platforms and technologies must move up to a whole new mindset for success in today's retail environment.

A new foundation is needed to overcome hurdles and execute the seamless, AI-fueled, and data-driven retailing that is essential now and in the future. IDC calls this the *super platform* concept, a fully integrated, composable, and unified commerce platform built on essential layers of functionality, including cloud and edge, data integration, and AI/analytics capabilities (see Figure 2). This modern framework enables retailers to address pressing challenges and compete successfully by integrating various aspects of omni-channel retail operations, enabling the real-time data insights, automation, and supporting functions needed to seamlessly execute this approach. Retailers that leverage technology advancements and AI-fueled data insights gain the advantage of innovating and iterating quickly to gain a competitive edge.

The key components of the super platform framework include:

- **A unified and composable platform:** This makes it easier and faster to implement new applications and technologies to optimize omni-channel operations with a unified, data-informed view across operations, enabling agility, flexibility, and innovation.
- **Accessible and unified data:** Data is the fuel enabling seamless omni-channel retailing, and having unified data is imperative for intelligent decision-making based on accessible integrated data (e.g., customer, loyalty, point of sale [POS], inventory, IoT), with real-time data processing at the edge to drive competitive differentiation.

» **AI acceleration:** The right foundation is essential for retailers to leverage the benefits of AI, generative AI (GenAI), and agentic AI. Without it, retailers will be unable to apply AI to data across applications, drive intelligent insights (such as creating new business revenue streams or efficiencies), and enable differentiated solutions (such as hyper-personalized customer engagement or accurate, real-time omni-channel inventory insights).

Retailers need this modern foundation to become agile, AI-fueled, and data-driven organizations; meet the new demands of today's shopping environment; and compete effectively. The super platform is essentially a model to get to the ideal state of executing seamless, intelligent, and unified omni-channel commerce. Retailers do not need to make this transition all at once, but those that begin to adopt the principles of the super platform concept are better positioned to adapt to change, improve performance, and support ongoing innovation. The shift to a cloud-based, composable, and omni-channel commerce platform is not just a technology upgrade, but it is also a strategic enabler for meeting the new demands of modern retail.

FIGURE 2: ***The Super Platform Framework***

Source: IDC, 2025

Retailers that continue to rely on fragmented or legacy systems may face increasing challenges when integrating AI and automation into their store operations. Without unified architecture, it becomes difficult to convert insights into coordinated action — resulting in delayed responses, limited scalability, and inconsistent execution. Over time, these constraints can drive up operational costs, inhibit innovation, and hinder the delivery of timely, context-aware customer experiences.

Benefits: Unlocking Retail Success

The adoption of an AI-powered, cloud- and edge-enabled unified platform that is composable and leverages operational and customer data offers numerous benefits for retailers seeking to thrive in a dynamic and competitive market landscape. These benefits include:

- **Improved data visibility and synchronization:** The integration of real-time data and AI creates a unified, real-time view across all systems, from customer interactions to store operations, enabling retailers to operate from a single source of truth. This transforms how the entire organization experiences and acts on information. When all teams work from the same real-time, accurate data, decision-making becomes more informed and consistent across the enterprise. For example, when shopper behavior data is synchronized across touch points, retailers can trigger timely, personalized promotions as customers move through the store or adjust staffing based on emerging traffic patterns. This synchronized data ecosystem enables store managers to see inventory levels, alongside real-time sales velocity, marketing teams to understand promotion performance as it happens, and executives to access comprehensive performance metrics without reconciling different systems. The result is a fundamentally different operational experience where every decision is based on shared, accurate, and up-to-the-minute information, leading to improved customer engagement, operational efficiency, and business agility.

- **Enhanced customer experience and loyalty**: Leveraging customer data and real-time processing for AI-driven insights greatly enhances the ability to provide personalized and seamless shopping experiences. This results in increased satisfaction and loyalty, as customers receive tailored recommendations and promotions that resonate with their preferences and purchase history. Personalized marketing campaigns based on customer data can improve engagement, drive repeat business, and foster loyalty.

- **Increased operational efficiency:** The integration of data and AI streamlines operations and reduces costs by enabling automation and real-time insights. Retailers can optimize their processes, leading to improved decision-making and resource allocation. Managers can quickly identify and address inefficiencies, ensuring that operations run smoothly. For example, AI-powered dynamic pricing systems can automatically adjust prices of perishable items based on expiration dates and current inventory levels, significantly reducing food waste while optimizing margins. Similarly, biometric authentication systems can enable secure unlocking of high-value merchandise cabinets or shelves, improving both security and customer experience by eliminating the need for staff assistance while maintaining protection for premium products. These cutting-edge applications represent the next generation of operational efficiency improvements enabled by unified data and AI platforms.

- **Improved loss and fraud prevention:** The super platform concept enables retailers to take security to the next level through contextual intelligence. By integrating data across all systems, AI can deliver targeted, risk-based security recommendations that apply the right level of scrutiny to the right people at the right time. For example, under this model, retailers can correlate real-time video analytics with transaction data, loyalty information, and historical patterns to identify suspicious activities. This intelligent approach reduces false positives and enables new capabilities like dynamic resource allocation for security staff, personalized verification processes based on risk profiles, and adaptive security measures that automatically adjust to changing conditions. Beyond basic anomaly detection, the super platform enables a comprehensive security ecosystem that balances loss prevention with customer experience, something disconnected point solutions cannot achieve.

- **New revenue streams and growth opportunities:** The super platform model can enable innovative growth opportunities that weren't possible with traditional retail systems. By analyzing real-time customer behavior through computer vision, retailers can now create highly personalized in-moment experiences that drive increased basket size and customer lifetime value. For example, the platform can identify a shopper's path through the store, analyze what's in the shopper's basket, and trigger personalized electronic shelf labels (ESLs) that light up with tailored promotions as they approach specific sections. Similarly, the platform can enable new service models like custom product design based on individual preferences, AI-powered personal shopping assistants that offer recommendations throughout the shopping journey, and dynamic loyalty rewards that respond to customer behavioral insights rather than just purchase history. These sophisticated applications represent a significant evolution beyond traditional subscription or omni-channel models, delivering both incremental revenue growth and new revenue streams that were unattainable without the unified data and contextual intelligence provided by a super platform.

By integrating data, AI, and both cloud and edge computing in the super platform model, retailers can unlock a comprehensive range of benefits that drive success and growth. Improved data visibility and synchronization, enhanced customer experience and loyalty, increased operational efficiency, exploration of new revenue streams, and competitive advantage are all achievable through the adoption of a unified platform. What truly sets the super platform apart is its capacity to enable real-time contextual intelligence. This means processing massive volumes of unstructured, real-time data to make immediate decisions, such as recognizing a 4:00 p.m. rush of dinner shoppers, understanding who they are and their loyalty status, what they're buying, and then responding accordingly. This might mean adjusting staff and inventory on the fly or personalizing the shopping experience in real time. Such real-time contextual responsiveness is essential for retailers to remain competitive in today's dynamic marketplace.

Trends

The retail industry is experiencing significant transformations driven by technological advancements and changing consumer behaviors. Key trends occurring in retail underscore the need for a modernized, composable, and unified platform such as the super platform concept to enable success. In detail:

- **Data and AI and advanced analytics:** There is growing recognition of the importance of leveraging data and new AI/analytics to optimize retail operations and customer experience and uncover new business models and opportunities. Retailers are actively pursuing new AI initiatives, with nearly 60% saying they're looking for third-party support in building AI/machine learning (ML) solutions within the next two years.
  - **Example:** AI-driven virtual assistants for personalized customer experience and predictive analytics for inventory management and demand forecasting
- **Customer expectations:** Shoppers have heightened expectations for personalized and seamless omni-channel shopping experiences, with many willing to switch retailers if their needs/preferences are not met. Integrated/unified data and AI are essential to enabling greater levels of personalization and improved experiences.
  - **Example:** Personalized product recommendations and marketing campaigns based on browsing and purchase history
- **Operational efficiency:** Retailers are leveraging technology to streamline operations, reduce costs, and improve operational efficiency through automation, AI, and data-driven insights.

- **Example:** Automated checkout systems that reduce wait times and improve customer satisfaction

Considering Toshiba Global Commerce Solutions

A unified commerce platform that reflects the core principles of the super platform — composability, cloud and edge enablement, centralized data, and AI integration — can enable retailers to manage operations with greater agility and precision. The platform allows retailers to compose and orchestrate diverse functions across the store, improving consistency, responsiveness, and long-term scalability.

Toshiba provides hardware, software, and services designed to support retailers worldwide that are operating in complex, omni-channel environments. Central to its software and solutions portfolio is the ELERA Commerce Platform, a unified platform designed to modernize retail operations and support the development and deployment of intelligent, data-driven solutions across store formats and geographies. The ELERA platform offers a tangible example of how super platform concepts can be embedded into retail operations.

Toshiba's ELERA platform demonstrates how these super platform concepts can be applied in practice. Designed to support modular deployment, interoperability with existing systems, and edge-based execution, the platform provides a flexible framework for unifying operations, automating decision-making, and acting on real-time signals at scale across the store and omni-channel environment. By leveraging a modern, unified commerce platform that embodies the core principles of the super platform, retailers can seamlessly compose various aspects of their operations for a cohesive, efficient, and flexible approach to managing their business.

The ELERA Commerce Platform

ELERA is a platform built on a modular, composable, and API-first architecture. It is designed to support real-time processing at the edge, seamless integration with in-store devices, and localized real-time intelligence. The platform's foundational intelligence layers include dedicated IoT and edge device enablement and management, as well as centralized data and AI capabilities, enabling functions such as computer vision, machine learning, and support for emerging technologies including generative AI and agentic AI. ELERA enables retailers to digitize processes, modernize commerce operations, and coordinate customer engagement, store operations, and fulfillment workflows. It allows for configuration and management of core retail functions, such as loss prevention, loyalty, point of sale, and returns without requiring full system replacement.

Key capabilities include:

- Support for modular solution development and composable deployment across store systems
- Cloud-agnostic and edge-enabled infrastructure for flexibility across diverse retail environments
- Built-in intelligence layer with embedded AI capabilities for real-time decisioning, in-store automation, computer vision, and contextual action — supported by edge-native deployment
- Composable architecture, self-enablement tools, and interfaces that allow Toshiba and third-party applications to plug-in, interoperate, and share data that can support iterative development, collaboration, and scale across internal teams and partners — support for cohesive operations and data-driven decision-making with orchestration, real-time synchronization, and unified data across core retail systems

Toshiba offers a portfolio of solutions built on ELERA, including its:

- **IoT and Security Suite** that leverages smart IoT devices — such as cameras, sensors, and shelf-edge technology — combined with edge computing and AI to deliver real-time visibility across the store (It supports use cases such as shrink detection, loss prevention, product recognition, and in-store behavior analysis.)
- **Commerce Suite** that supports POS, self-checkout, mobile checkout, and order orchestration, with real-time data processing and transaction consistency across channels
- **Payments Suite** that facilitates secure flexible payments across channels with integration to multiple processors
- **Marketing Suite** that enables dynamic engagement through real-time loyalty and promotion tools based on customer behavior and context

The platform's direction aligns with the broader market shift toward adaptive, AI-native retail infrastructure. ELERA aims to help retailers continuously innovate without disruptions by supporting them with:

- Iterative development, testing, and deployment of new retail use cases whether these are done internally or codeveloped using ELERA's configuration tools and low-code capabilities
- Coexistence with legacy systems to modernize capabilities without requiring wholesale replacement
- Coordination of localized intelligence and enterprisewide orchestration through integrated data and AI services

Through its composable design and embedded AI capabilities, ELERA can support a more flexible and responsive approach to retail modernization, helping retailers develop, deploy, and refine use cases in alignment with evolving operational and strategic priorities.

Challenges

When adopting a platform like Toshiba's ELERA, retailers face a strategic decision about their transformation approach. The primary consideration is determining the scope, scale, and pace of transformation that aligns with their business objectives, organizational readiness, and competitive landscape.

Retailers must assess which deployment model (on premises, SaaS, or hybrid) best supports their transformation goals. While on-premises deployments may align with existing infrastructure investments or specific compliance requirements, they may limit access to some advanced AI capabilities that benefit from cloud-scale data processing. SaaS and hybrid models offer greater agility and access to real-time services but require retailers to consider how these environments will coexist with legacy systems.

The implementation challenge lies in determining the right starting point and expansion path. ELERA's composable architecture allows retailers to begin with specific priorities, such as modernizing core transaction systems, enhancing customer loyalty programs, or implementing AI-based advanced loss prevention. From there they can scale toward broader deployments to support unified operations across their infrastructure. This phased approach allows retailers to manage the scope of transformation based on their priorities and capacity for change.

For retailers with strong in-house technical resources, ELERA's self-enablement tools can facilitate faster implementation cycles, allowing them to configure, extend, and deploy components independently. For organizations with limited

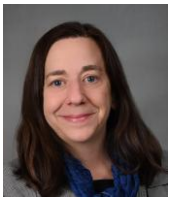
resources or those pursuing more comprehensive transformation, Toshiba offers implementation support ranging from technical guidance to full solution development. Ultimately, the core challenge of transformation for retailers is not about technical integration complexity. It is about making strategic decisions about how to plan and structure the journey and then developing a change management plan to support it. Success depends on aligning the platform implementation with well-defined business outcomes and ensuring the organization is prepared for the operational changes that follow. A strong starting point is identifying and implementing high-value use cases that deliver quick returns while building toward retailers' long-term vision for unified commerce.

Conclusion

The global retail environment is rapidly evolving, bringing a host of new demands and challenges. Retailers that have not modernized their technology foundations risk falling behind competitors. Data and AI are crucial in modern retail operations to drive agility, meet new and changing customer expectations, and boost operational efficiency. Adopting a super platform approach can help enable seamless omni-channel retailing and real-time, data-driven insights that can drive competitive success in today's environment.

Retailers that have not modernized their technology foundations risk falling behind competitors.

About the Analysts



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MESSAGE FROM THE SPONSOR

Toshiba Global Commerce Solutions empowers retail to thrive and prosper through a dynamic ecosystem of smarter, more agile solutions and services that enable retailers to resiliently evolve with generations of consumers and adapt to market conditions. As an early innovator and leader, Toshiba continues to deliver on the promise of the super platform framework through integrated, data-driven solutions that unify applications, data, and edge intelligence across the store. Supported by a global organization of devoted employees and partners, retailers gain more visibility and control over operations while enjoying the flexibility to build, scale, and transform retail experiences that anticipate and fulfill consumers' ever-changing needs.

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