How Hybrid AI Platforms Supercharge the Journey to AI-Fueled, Data-Driven Retailing

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In this InfoBrief

Retailers need to embrace AI to leverage their volumes of valuable data to compete effectively amid fast-evolving challenges and new expectations, but they need to understand the best approach to accelerate AI deployments and fully reap the benefits.

This IDC InfoBrief explores the important benefits of a unified, hybrid-AI, enterprise-edge approach to the infrastructure/data foundation supporting the move to AI-fueled, data-driven retailing:

Data optimization that enables unified, synchronized omnichannel data in real time

Ensuring data security for reduced risk

Increased automation for increased efficiency

Greater scalability that facilitates ongoing AI innovation

Retailers face a complex web of challenges and pressures from multiple competing factors in today's fast-evolving environment

The pace of retail is accelerating amid fast-changing macroeconomic trends, increasing disruption from volatile tariffs and economic conditions, new market threats, and variable shopper behaviors.

Fast-evolving macroeconomic trends

- Growing economic volatility/ uncertainty and ongoing tariff wars
- Changing supply chain dynamics and supply chain disruptions
- Labor shortages for IT skills and store employees

Mounting external challenges

- Influx of new, more nimble/digitally savvy, cloud-native competitors
- Disruption to customer relationships due to the rise in GenAI shopping services (i.e., Perplexity, ChatGPT)
- Growing shrink, fraud, and loss
- Increasing cybersecurity/cybercrime

Changing shopper behaviors

- Heightened shopper expectations for seamless, personalized omnichannel shopping
- Diminished loyalty for brands unable to meet new expectations
- Returns culture explosion, with over-ordering and returning cutting into profitability

Fast-changing demands and challenges drive the need for AI-fueled, data-driven retailing

Retailers realize the benefits of AI for leveraging their vast amount of retail data for the real-time, intelligent decision-making/insights they need to react quickly to changing market conditions and expectations.

Nearly two-thirds of retailers globally plan to increase AI/automation investments in the next year.

Retailers cite AI/analytics as the number 1 area of IT investment most immune to budget reduction in the next year.

Retailers are investing in AI to reach their top business priorities:

- Optimize operations.
- Enhance customer experience.
- Strengthen fraud detection and security.

What is most driving your organization's investments in AI everywhere/automation as a strategic business priority?

Optimize operations	44%
Enhance customer experience	39%
Strengthen fraud detection and security	35%
Strengthen employee productivity	35%
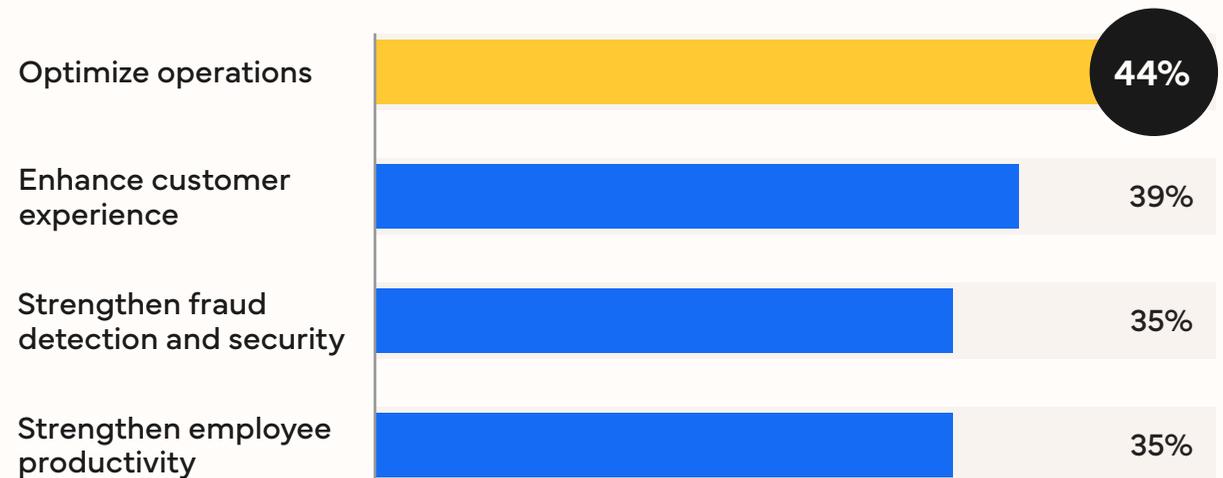
n = 912; Source: IDC's *Industry Intelligence — Retail Survey 2025,* April 2025

Retailers seek the benefits from AI to compete effectively but face roadblocks

Legacy/disconnected systems:
Without modernized systems, retailers are stymied by data silos and a lack of accessible/visible data to fuel AI.

Infrastructure/data:
Lack of enterprise-to-edge architecture/technologies, digital infrastructure, or modern data management and governance limits the ability to access data in real time while increasing data security/compliance risks.

Lack of an AI/ROI road map:
Without a clear AI strategy or ROI road map, retailers may not have sufficient budget to optimize AI projects.

Shortage of digital skills/talent:
The lack of AI skills/talent inhibits new AI initiatives from even starting.

What is the primary issue holding your organization back from pivoting to AI more quickly?

Need to modernize first	23%
Infrastructure issues	21%
Not enough budget	20%
Not the right talent	17%
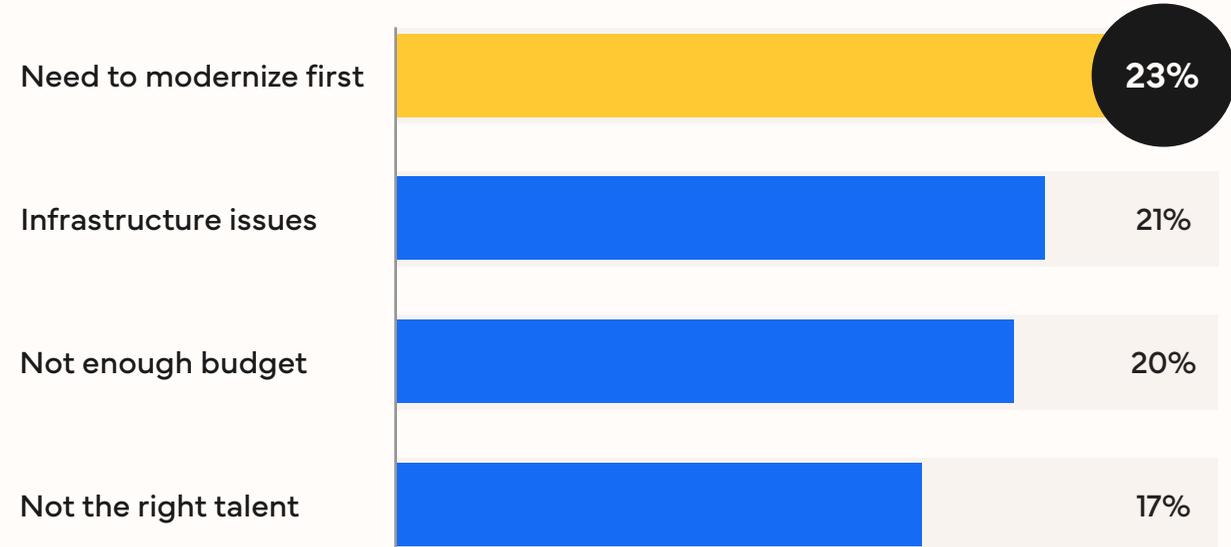
n = 95; Source: IDC's *Syndicated Survey 2025: AI-Wave 1*

How hybrid AI platform solutions help overcome roadblocks and drive a faster path to AI success

Hybrid AI platform solutions provide a comprehensive ecosystem that empowers AI initiatives, providing a scalable and adaptable foundation supporting growth from edge to datacenter. As needs evolve, these platforms enable full-stack expansion and ease the addition of new use cases.

→ **Improved customer engagement:** Unified, synchronized omnichannel data access and edge-enabled real-time processing with AI enhances personalization, such as real-time promotions/recommendations.

→ **Greater efficiency/productivity:** Eliminating legacy infrastructure issues with a cloud and edge foundation enables increased automation and more efficient and agile operations.

→ **Improved fraud and loss prevention:** Access to real-time monitoring and alerting enhances the ability to avoid fraud and loss.

→ **Reduced risk:** Managing and securing all internal/external data across operations reduces risk.

→ **Greater scalability:** Greater ease in expanding/adding new AI use cases as they become available allows companies to compete effectively against more nimble competitors.

Hybrid AI platform solutions

Complete solutions encompass hardware, software, and services for unified AI strategies across edge, datacenter, and cloud while supporting a range of AI models/agents and delivery/deployment technologies for reduced complexity and optimized results for AI deployments.

How hybrid AI platform solutions help overcome roadblocks and drive a faster path to AI success (continued)

How hybrid AI platform solutions help retailers beat today's biggest challenges across operations, supply chain, checkout, and omnichannel customer experience

Economic volatility/uncertainty/ongoing tariff wars:

Unified, real-time data and AI enable accurate predictive forecasting and faster and more productive reactions to changing tariffs/conditions.

Changing supply chain dynamics/disruptions:

Increased data visibility and an integrated view across operations for AI-driven analytics improve decision-making, forecasting, and agility to better navigate uncertainty and disruption.

Labor shortages:

Leveraging AI-powered automation reduces manual, repetitive tasks.

Rising fraud and loss:

Enabling computer vision/advanced AI analytics allows real-time monitoring and alerting.

Heightened shopper expectations:

Unifying omnichannel data and AI creates seamless customer journeys.

Returns culture explosion:

Utilizing real-time 360 customer data and AI analytics enables intelligent decision-making on returns.

# Overcoming key AI challenges and building for the future

As retailers continue their AI journey, moving more deliberately from exploration to production, they must prioritize strategies that align with tech modernization, skills development, and business objectives.

→ Companies are **investing significantly in AI infrastructure,** with spending projected to grow to over $860 billion by 2029.

→ At the same time, only a small percentage of companies report successful AI deployments; **70% of retailers said AI investments did not meet or only partially met** their business objectives.

→ While spending on AI initiatives is strong, retailers must focus on maximizing their investments, with a keen focus on readiness, planning, and tight alignment with **business, technology, and operational initiatives** to build more successful AI projects.

→ Professional services can provide readiness testing, infrastructure/operational planning, and design that enable retailers to accelerate their AI maturity.

Common barriers to AI success:

Design/deployment issues

Inadequate infrastructure

Skills gaps

Unexpected costs

To what extent has your company met the business objectives of its investments in AI/automation?

|	
Unmet	18%
Partially met	52%
Fully met	25%
Exceeded	4%
Significantly exceed	1%
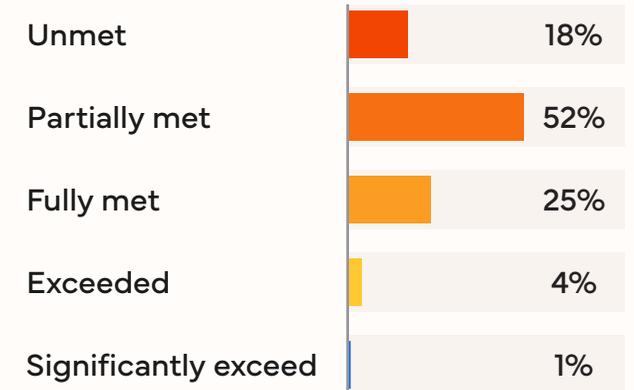
n = 980; Source: IDC's *Syndicated Survay 2025: Retail Technologies and Business Processes Trends*

Moving from exploration to enterprise AI adoption, retailers prioritize AI platforms, workforce, strategy, and infrastructure
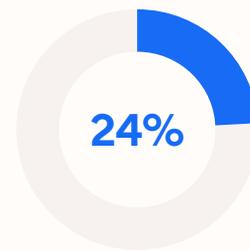
To accelerate the maturity of each dimension, retailers may leverage professional services expertise to move forward with their adoption of AI.
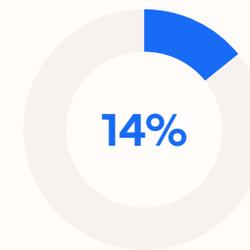
**Retailers' top strategic priorities in moving from GenAI exploration to broad, enterprise AI adoption:**

24%
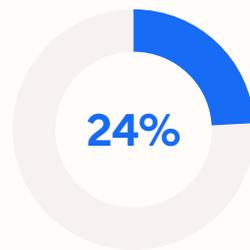
AI platforms: enabling the use of diverse, scalable, well-governed, and cost-effective models

24%

AI-ready workforce: creating a developer/ general workforce that uses AI assistants, advisors, and agents to boost business success

14%

AI strategy: creating a prioritized use-case road map tied to key business objectives

9%
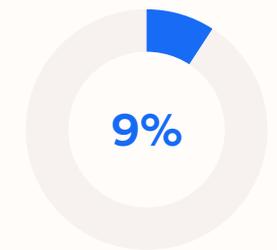
AI infrastructure: optimizing compute, storage, network, and cloud resources to support secure AI workloads cost-effectively

n = 69; Source: IDC's *FERS Wave 1 (Retail),* February 2025

Services accelerate AI/GenAI/agentic initiatives to enable retailers to maximize their infrastructure investments

To ensure that organizations maximize their AI infrastructure investments, IDC believes that they must expertly design, architect, and implement their infrastructure to capitalize on their AI aspirations.

→ With the incredibly fast pace at which new AI technologies and paradigms are coming to market, it can become untenable for IT teams to keep up while trying to keep the lights on.

→ Professional services ensure that retail IT teams can realize true business benefits. The top benefits that retailers gain by utilizing professional services include improved employee productivity, increased revenues, and cost reductions.

How retailers leverage services to accelerate IT objectives

34% Improved employee productivity

32% Increased revenues

25% Improved employee retention and satisfaction

25% Achieved cost reduction goals

25% Improved customer relationships

Source: IDC's *Services Path*, 2024

Highlighting key AI use cases for retail

Retailers that have executed these AI/GenAI/agentic AI use cases are already seeing real benefits, including reduced shrink, increased employee productivity, and more engaged customers.

Omnichannel customer experience

- **Shopping assistants:** supporting product search, personalized recommendations, and contextual answers to questions for online or in-store shoppers to boost customer experience and loyalty

- **Digital floor assistants:** in-store navigation for streamlined, personalized shopping experiences

- **Customer support:** call center agents analyzing data in real time for faster and more personalized support

Checkout optimization

- **Self-checkout:** edge-enabled AI for processing visual/sensor data, such as product recognition, for reduced wait times and streamlined checkout for enhanced customer experience

- **Loss prevention:** AI-enabled edge-based surveillance solutions monitoring data streams in real time to flag anomalies and deliver on-the-spot alerts to prevent loss before it happens

- **Fraud detection:** AI-enabled real-time data analytics to detect/prevent credit card fraud

Supply chain excellence

- **Intelligent warehouses:** using AI-enabled automation and robotics for improved employee efficiency and greater warehouse productivity

- **Supply chain intelligence:** leveraging AI for intelligent, real-time visibility into product movement to predict potential disruptions and optimize logistics to ensure timely delivery and reduce costs

- **Sales forecasting:** using AI and real-time data analytics to more accurately and quickly predict future sales

Highlighting key AI use cases for retail — self-checkout

One of the largest high-end Canadian grocery chains, with more than 950 stores, has been expanding self-service checkouts to enhance the end-user shopping experience. However, it found that **issues with missed scans and barcode recognition were affecting customer experience and profitability.**

→ **To address these issues, the grocer implemented Everseen's Vision AI.**

Everseen's Vision AI uses high-resolution cameras and AI on NVIDIA's Accelerated Computing platform that runs on Lenovo's Edge AI servers.
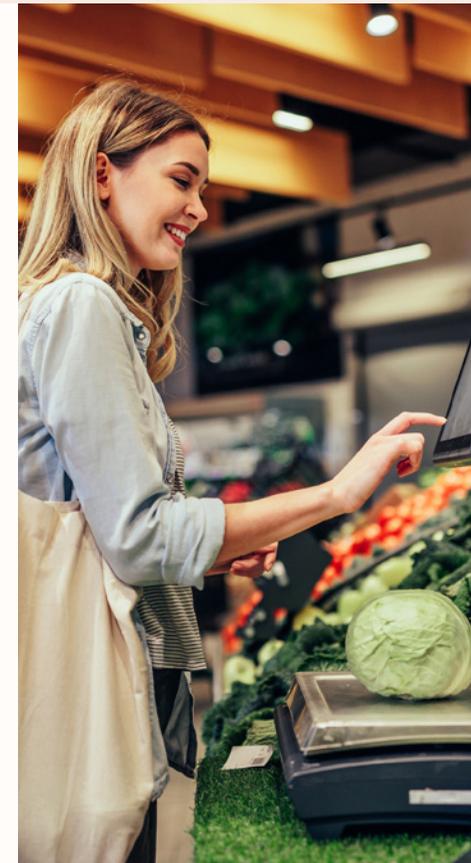
The platform analyzes video footage in real time to recognize regular processes and intelligently intervenes when issues arise, such as mis-scans or product switching. The system gives shoppers the ability to self-correct first and then alerts associates if needed.

Benefits:

Reduced customer friction
Reduced shrink

Source: *Lenovo and NVIDIA's Retail Customer Case Study,* 2025

Essential guidance/key takeaways

Fast-changing demands and expectations and the accelerated pace of retail make it essential for retailers to leverage the benefits of real-time data and AI to boost agility and efficiency or risk falling behind AI-optimized competitors.

To optimize AI efforts and ensure success, consider:

Hybrid AI platforms to provide a secure, flexible foundation to get started on priority AI use cases while helping retailers overcome common roadblocks in AI implementations, including a lack of modernized infrastructure and disconnected/inaccessible data.

Prioritize flexible platforms that support AI strategies across edge, cloud, and datacenter and offer a range of AI models/AI agents and delivery/deployment technologies to facilitate scalability and optimized results.

Consider the benefits of AI professional services to ensure successful AI implementations with a fast road map to ROI. Deploying AI can be quite complex and difficult, and many AI initiatives are not successful. Maximize AI benefits, with a keen focus on readiness, planning, and tight alignment with business, technology, and operational initiatives.

Work with experienced partners that can provide proven reference architectures with validated designs for retail that deliver technical expertise, best practices, reduced configuration errors, and faster time to market for AI initiatives.

About the IDC analysts

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Margot Juros is a research director for IDC Retail Insights and is responsible for the Retail Technology Strategies research program. Juros's core research focuses on best practices, trends, market conditions, business concerns, and vendor offerings to provide authoritative advice on investment, life-cycle management, and the use of technologies for modern IT infrastructure. Her research will cover key technologies in retail transformation, including IT modernization, cloud/edge/5G, security, payments, mobile platforms, and network management.

More about Margot Juros →

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Leslie Rosenberg is research vice president for IDC's Network Life-Cycle Services and Infrastructure Services programs, examining professional services trends and market dynamics for the enterprise. Rosenberg's research coverage spans life-cycle services portfolio development across network, server, and storage infrastructure technologies, encompassing the dynamics of software-defined infrastructure, automation, service delivery platforms, new consumption models, and the evolution of services impacting people, processes, tools, and methodologies around the globe. Rosenberg's research evaluates services that technology manufacturers, global systems integrators, and telcos deliver as they look to compete more effectively in the enterprise market.

More about Leslie Rosenberg →

Message from the sponsor

Lenovo | **NVIDIA**

Lenovo's Hybrid AI Advantage with NVIDIA is a co-engineered enterprise-ready full-stack platform that unifies hybrid AI infrastructure & devices, data, models and software, and validated solutions to streamline deployment and maximize ROI. Built on Lenovo's hybrid AI infrastructure portfolio and supported by Lenovo Validated Designs—comprehensive outcomes blueprints—together with NVIDIA's energy-efficient accelerated computing and NVIDIA-Certified systems, these offerings ensure fast, reliable, and low-risk implementation for businesses embracing next-generation AI.

The Lenovo AI Library features scalable agentic AI solutions such as knowledge assistants, customer service agents, and content generation agents, along with specialized applications for quality inspection, hospitality, and workplace security. These use cases are supported by flexible configurations and deployment options that enable both horizontal and vertical scaling, ensuring reliable performance and streamlined implementation for organizations of any size.

To learn more about Lenovo Hybrid AI Advantage with NVIDIA, visit www.lenovo.com/hybridai