

Lenovo Hybrid AI Advantage™
with NVIDIA

Unleash agentic AI value in retail operations

Discover a faster, smarter
path to innovation



Smarter
technology
for all

Lenovo



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Retail is charging full speed into the AI era



In an inherently competitive industry, retail organizations are always searching to gain an edge — a way to do things better, faster, or more efficiently that sets them apart and keeps them top of mind with their customers and a step ahead of the competition. Retail organizations are discovering that AI holds immense potential to evolutionize iterations through streamlined processes, accelerated insights, and improved outcomes.

According to **NVIDIA's State of AI in Retail and CPG report:**



of retail organizations are using AI in some capacity.¹



are using AI for supply chain.¹



are using AI in their operations.¹



predict their investment in AI will grow in the next year.¹

But implementing AI at the enterprise scale is a complex proposition. New retail applications are being implemented from computer vision-enabled loss prevention solutions to supply chain and inventory management to personalized shopping experiences and often powered by the rich transaction datasets retailers are armed with. With the accelerated rate of change and continuous evolution of AI technology, it can be difficult for retail organizations to know where to start.

Without a strategic approach, an optimized infrastructure, and very specialized skills in place, retail organizations run the risk of budget uncertainty, project delays, lost productivity, and the potential for reduced or negative ROI.



57% of retail organizations have questions about the cost to implement generative AI.¹

Defining a new path to smarter retail

To effectively deploy new agentic AI solutions on a scale, retail organizations need the right expertise to implement and manage the applications, the right data preparation, and the right infrastructure to handle the workloads.



Constructing the right hybrid AI factory

When it comes to hybrid AI factory platforms, many retail organizations face challenges with legacy systems, outdated software, underpowered technology and management tools, extended networks of stores, and data silos. Enterprise AI implementations need an AI-optimized infrastructure where models can be trained, tested, and deployed quickly and efficiently.

69%

69% of retail organizations say their AI workloads will be primarily on-prem or hybrid cloud.³

Finding the right expertise

A key ingredient in effectively deploying AI strategies is having the right expert with not only the experience but the ecosystem of partners with tailored and vetted solutions unique to retailing.

88%

88% of IT decision-makers have engaged with at least one new vendor in the past year due to the expansion of AI-enabled technology.²

As businesses across every sector continue to embrace AI, the demand for IT talent proficient in AI will only increase, making finding and retaining top talent even more difficult, which makes choosing the right partner extremely important.

Optimizing data readiness

From customer databases and call centers to suppliers, website traffic, and more, retail AI applications must access and coordinate vast amounts of data. This data can come in structured, unstructured, and semi-structured forms, all of which require efficient ingestion, pre-processing, and storage. That's what makes optimized data orchestration critical to fully leveraging the power of AI.

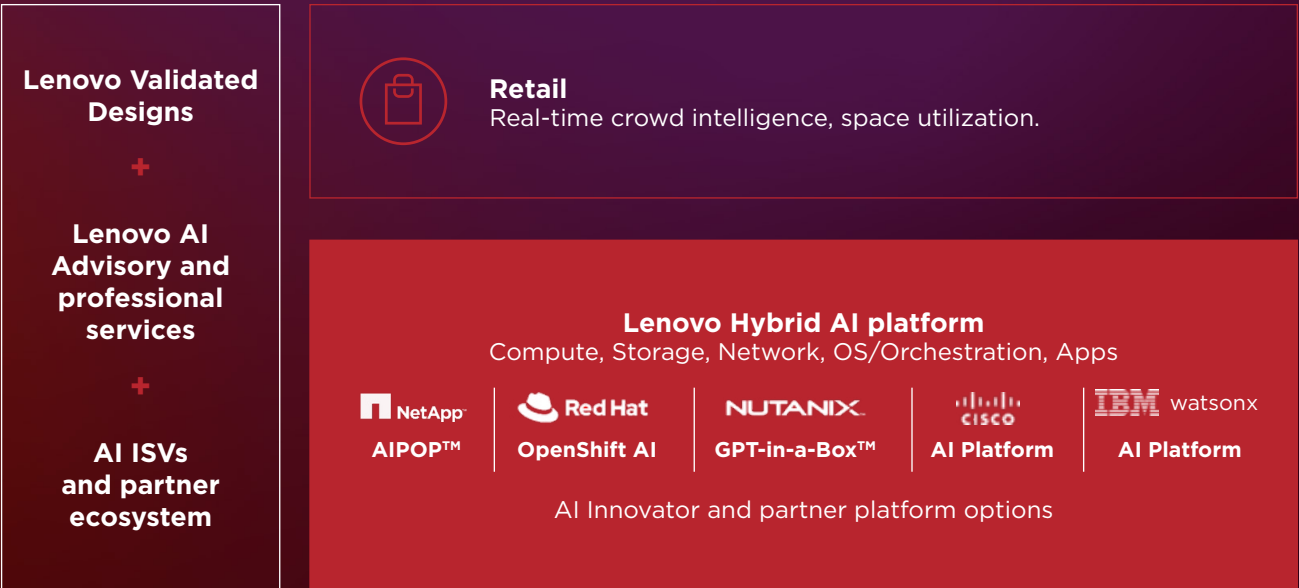
72%

72% view their organization's proprietary data as key to unlocking the value of generative AI.⁶

Retail IT organizations need to ensure data is qualified, organized, and available to ensure the predictability and accuracy of the insights and actions of an AI agent.

Unlocking AI ROI in retail

Lenovo Hybrid AI Advantage™ with NVIDIA enables retail organizations to efficiently deploy scalable AI solutions that drive meaningful enterprise-wide results.



Lenovo’s full stack solutions combine **NVIDIA AI Enterprise** software, including **NVIDIA NIM** AI models with Lenovo Validated Designs to create a versatile, modular platform. Lenovo AI Services experts help guide retailers to scale AI implementations with efficiency and reliability while preparing for a new era of agentic AI with minimal complexity.



Lenovo and NVIDIA bring years of partnership, collaboration, and engineering to meet customers where they are on their AI journey with speed, ease, and expertise.

- **Increase productivity**
Enable retail teams to achieve more quickly with role-specific and vertical-specific AI agents, solutions, and personalized experiences, delivering value across locations.
- **Optimize agility**
Build and scale AI operations with ease to drive retailing efficiencies with modern AI-optimized infrastructure, models, and services.
- **Innovate with trust**
Achieve trusted, compliant, and responsible AI by managing and protecting valuable customer and transaction data with Lenovo expertise and integrated, validated solutions across the enterprise.



Streamline efforts with pre-validated solutions

Building the right hybrid platform for AI workloads takes a strategic approach to hardware, software, and ongoing support for optimal operation.

Lenovo Retail Solutions offers a complete portfolio of AI devices, infrastructure, software solutions, and services optimized with NVIDIA that support a variety of retail use cases from loss prevention to inventory management. Drawing from Lenovo's technology leadership, retail organizations accelerate agility and maximize efficiencies with ease while reducing technical debt.

Pre-configured, best-in-class technology for agentic AI

The fast pace of retailing demands accelerated delivery of infrastructure. Lenovo Hybrid AI Advantage™ with NVIDIA solutions tap into Lenovo Validated Designs (LVDs), which provide comprehensive reference architectures for flexible and scalable hybrid AI infrastructures.

Pre-tested, turnkey solutions include the configuration of compute and storage servers organized as scale-out structures for specific AI workloads needed to deliver intelligent stores and enhanced retail experiences.



Accelerate retail transformation

Lenovo and NVIDIA provide a suite of ready-to-customize use case accelerators and agent tools that retail organizations can leverage to deploy agentic AI quickly and easily. Lenovo AI Library provides pre-designed agents that address a variety of use cases:

Lenovo Knowledge Assistant can draw from product catalogues, training manuals, and store information to provide frontline personnel with quick access to information.

Lenovo Customer Service agents can more rapidly ingest and respond to customer requests and provide more personalized support.

Lenovo Content Creation can deliver more personalized and rapid messaging, and promotional content can be generated.

These pre-tested AI agents provide flexibility for customers to choose from a range of locations, deployment methods, and managed services options aligned to the specific needs of their business.

For instances where pre-validated use cases are not yet available, the Lenovo's agentic AI platform provides a broad array of pre-configured APIs, software development kits, and NVIDIA blueprint templates to streamline development. And, with Lenovo AI Fast Start service, you can prove business value in under 90 days using your own data, with use cases tailored to your industry and workflow needs.

Some of the use cases retail organizations are leveraging include:

Omnichannel

- **Marketing and advertising** – Marketing teams are utilizing content creation agents and modeling to streamline development, personalize messaging, and optimize media spend.
- **AI-Powered Product Tagging** – Retailers are using next-generation computer vision to recognize image attributes and automatically generate meta-tagging and cataloging and improve search and personalizing recommendations.
- **Multi-modal shopping assistants:** These highly skilled AI shopping assistants can understand text- and image-based prompts, search for multiple items simultaneously, complete complicated tasks, and answer contextual questions.
- When combined with predictive analytics on the back end, they can deliver personalized responses to complex queries.

Accelerate retail transformation

Stores

Manage high inquiry volumes, ensure consistency across service channels, and scale operations without straining budgets.

- ✓ **Customer experience:** In-store experiences come to life guided by AI ambassadors that streamline shopping experiences with dynamic digital signage serving as store guide and customer service concierge.
- ✓ **Checkout optimization:** Remove checkout friction with computer- and sensor-enabled product tracking and identification. Speeds checkout with product recognition (no scanned barcodes or weights) and automated digital payment processing.
- ✓ **Loss prevention:** AI agents can continuously monitor data from multiple sources, including POS transactions, security cameras, RFID systems, and inventory records to identify anomalies in real time.
 - Systems can learn over time to spot nuanced behaviors like “sweethearting,” organized crime patterns, or internal shrinkage.
 - Beyond detection, agentic AI can automatically initiate responses reducing customer friction, delay, and human error.
- ✓ **Lenovo Retail Solutions** empowers more than 10K retail stores with end-to-end turnkey AI solutions to help retailers surpass customer expectations, operate more efficiently, and explore new revenue streams.

Supply Chain and Inventory

AI-powered content agents offer organizations an effective way to establish themselves as leaders in content creation by keeping pace with production demands and aligning closely with market needs.

- ✓ **Intelligent Warehouses** – AI enabled automation, inventory tracking, and digital twins streamlining inventory management, stocking/picking, and workflows.
 - Lenovo’s **Warehouse Execution System** helps unlock the new possibilities with AI, increasing productivity by up to 30%.
- ✓ **Supply chain management:** Among retail organizations surveyed, 59% reported supply chain challenges over the last year.¹ AI holds the potential to improve visibility and efficiency throughout the supply chain, including demand forecasting and inventory allocation to ensure retailers can meet customer expectations.
 - **72%** of retailers are using AI for stockout and inventory management.¹
 - AI-powered simulations and digital twins provide powerful options for modeling warehouse operations.
- ✓ Lenovo created its own AI-powered solution called **Supply Chain Intelligence (SCI)** which has reduced logistics costs by ~20% and reduced order-to-delivery lead time.⁷



Kroger Grocery

Kroger has been steadily expanding use of self-service checkouts (SCOs) at locations across the country — and is constantly looking for ways to improve the experience.

Using high-resolution cameras and a unique combination of computer vision and artificial intelligence (AI) developed on NVIDIA’s Accelerated Computing Platform to shape shopper and associate behavior at SCOs and staffed lanes by intelligently intervening when errors occur.

- **Rapid, reliable analysis of unstructured video data**
- **One Lenovo server processes data from up to 20 high-res cameras in real time**
- **Over 75% of self-checkout errors corrected without employee intervention**
- **Reduces retail shrink and maximizes inventory availability**

Innovate for growth with AI expertise

To meet evolving challenges in the market today, retail organizations must keep their data and AI platforms secure and compliant across locations and ecosystems while also ensuring workloads and resources can adapt to meet changing business needs and maintain sustainable innovation for continued growth.

Flexible access to Lenovo's AI expertise and proven tools helps organizations make faster, more informed decisions so they can find innovative ways to improve operations.

Fast-track AI utilization

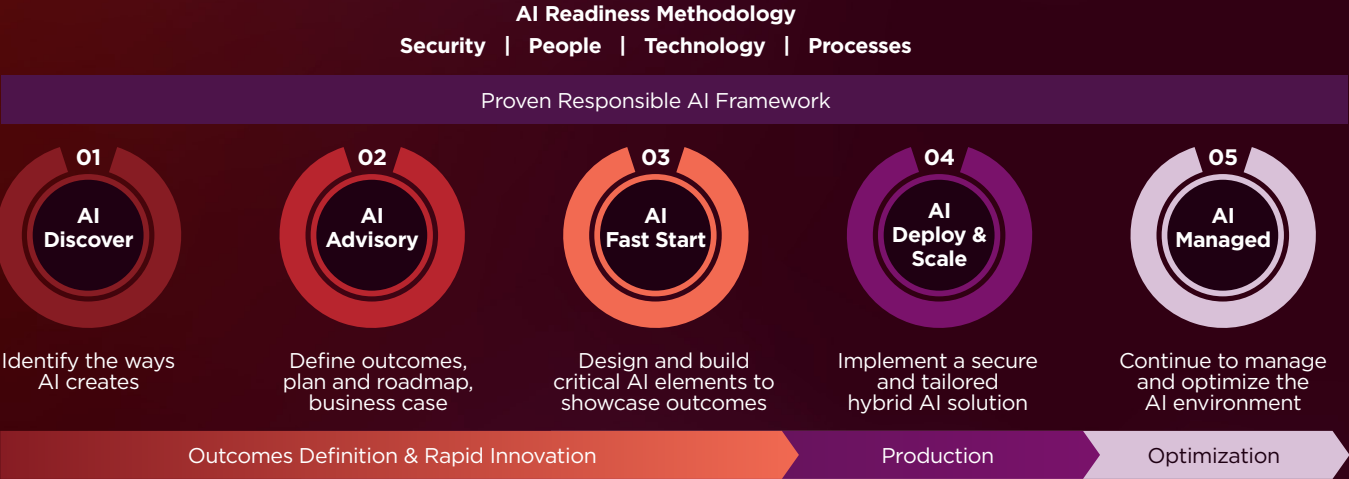
Even as AI adoption surges, half of employees say they're only getting moderate support when it comes to AI training⁸ — leaving a major gap that can slow progress and delay return on investment. Lenovo AI Adoption and Change Management Services is designed to close that gap by helping organizations gauge their AI readiness, upskill teams, drive stronger engagement, and get the most out of their enterprise systems. All backed by proven best practices and persona-based change management strategies.

Getting started safely and responsibly

Lenovo AI Services can help retailers accelerate delivery when resources are tight and expertise is scarce.

Lenovo AI Services: Solutions for every stage of your AI Journey

We meet you where you are and help you rapidly define, deploy, and drive value from AI use cases.



Lenovo provides a roadmap with defined next steps tailored to a retailer's unique needs and desired pace.

Starting with **AI Discover**, experts survey your store operations, interview shoppers, frontline employees, and IT teams to understand their pain points, needs, and designs.

With **AI Advisory**, the Lenovo team tailors a package solution that addresses these pain points.

AI Fast Start - allows retailers to build critical AI elements to showcase outcomes using:

- NVIDIA AI Enterprise Software
- NVIDIA AI Blueprints
- NVIDIA Inference Microservices (NIM)

AI Deploy and Scale assists retailers in implementing and scaling the Lenovo and NVIDIA AI solution.

Lenovo continues to support organizations providing **AI Managed** services to remove operational workloads and ensure continued performance.

Lenovo experts identify gaps that could slow progress and provide clear recommendations to address them.

Ensuring safe, compliant, and AI-ready data

Managing and securing valuable data for efficient AI use is one of the most challenging and sensitive aspects of implementing AI solutions, especially with retailers. Retailers collect enormous amounts of customer and transaction data that can be critical to the predictability and effectiveness of an AI agent.

Lenovo and NVIDIA have collaborated with [Centrific AI Data Foundry](#) to provide a pre-tested, scalable solution. Built with **Lenovo Validated Design**, this offering fuses **Lenovo ThinkSystem** servers and NVIDIA accelerated computing technology to conquer data complexity and accelerate insights.



Leveraging **NVIDIA Metropolis, NeMo™ Retriever**, and **NVIDIA NIM**, Centrific's AI data foundry transforms data into actionable insights.



Improved security and compliance come from enterprise-grade security features, **data privacy mechanisms**, and compliance frameworks.



The solution manages large-scale AI deployments, handles diverse data types, and provides real-time insights for industries like retail and public safety.



Organizations can create a **"data flywheel"** where continuous data collection, analysis, and application lead to ongoing improvements in the outcomes. More data leads to more value, which leads to the ability to collect even more data.

Increased agility on demand

Lenovo and NVIDIA solutions are also available through Lenovo TruScale, a convenient pay-as-you-go model that enables seamless scalability to meet rapidly increasing demands in processing power and capacity.



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**Lenovo Hybrid AI Advantage™
with NVIDIA**

Gain your AI-powered competitive edge faster

Consumers today expect more from retailers – more choices, more personalized experiences, and more responsive support. **Lenovo Hybrid AI Advantage™ with NVIDIA** solutions brings AI solutions to where it makes the most impact – empowering retail teams across your organization to be more productive. Our AI experts are ready to help you bring these next-generation solutions to life securely, efficiently, and responsibly.

**Discover what your organization can accomplish with
Lenovo Hybrid AI Advantage™ with NVIDIA solutions today.**

Visit [Lenovo.com/hybridai](https://lenovo.com/hybridai) to learn more.

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