

The background of the entire page is a photograph of a modern, multi-story building interior. The space is characterized by a high ceiling with a series of horizontal glass panels and dark metal structural beams. The walls are also made of dark metal and glass, creating a transparent, industrial feel. People are seen walking on different levels, some sitting on benches, and others standing. The lighting is soft and even, highlighting the architectural details.

Retail in the age of AI: The network powering the experience economy

Analysis of findings from retail respondents in "No time to wait:
The accelerating impact of AI on campus and branch networks"

Introduction

Retail has always been defined by the relentless pursuit of excellent customer experiences. It's a game of precision—the right product, at the right price, in the right place, at the exact moment a customer decides to buy. For decades, the “place” was a physical shelf. Today, the “place” is an omnichannel digital ecosystem, and that precision is now driven by AI, opening possibilities that most networks were never built to support.

The most critical reality uncovered from the recent industry survey of retail IT leaders in April 2026 is unmistakable: AI is not just another tool in the retail kit. It's a fundamental shift in the complexity, opportunity, and potential consequence of how retailers are now operating.

For the 3400 senior IT and networking leaders surveyed (292 in the retail sector), the network is no longer the “plumbing” hidden in the ceiling. It's the operational backbone upon which every AI-powered experience, supply chain insight, and competitive advantage now rests. And for those who invest in it deliberately, it's becoming their most powerful competitive asset. Yet 68% of retail leaders say AI has already introduced blind spots in their security monitoring that they cannot fully see.

The stakes play out across three interconnected realities: the infrastructure AI demands, the security it requires, and the customer experience it promises—but can only deliver if the foundation holds. Get it right, and the result is what retail has always been chasing: a frictionless experience that meets customers exactly where they are.

Everything runs through the network

The race is already underway. 50% of retail leaders are actively upgrading their campus and branch network infrastructure to handle the capacity demands of AI—the third-highest rate across all industries. Another 44% are upgrading specifically to stay ahead of competitors. This isn't just about keeping up. It's about survival.

Modern retail stores are now data centers in disguise. Computer vision for physical inventory management, real-time personalized recommendations, and AI-powered checkout systems generate a data load that is constant, massive, and distributed across every store location.

46% of retail leaders cite bandwidth and capacity demands as their top AI-driven campus and branch network challenge—the highest of any industry.

As one U.S.-based VP of infrastructure noted: “One thing we learned is that bandwidth became an issue in a few locations where edge AI was implemented. We typically maintain a standard bandwidth configuration across most branches, but in locations running these workloads we had to increase capacity to support latency requirements.”

This becomes especially critical during peak retail events—those massive, unpredictable traffic spikes when AI systems are under maximum load. With 76% of retail leaders agreeing that delays in modernization put their AI initiatives at risk, a network that cannot handle the load on a normal Tuesday will not survive Black Friday.

Strategic takeaway

Network modernization is not an IT project. It's a business imperative. Retailers already on this path are treating their campus and branch infrastructure as a strategic asset—scalable, AI-ready, and built for whatever comes next. For those who haven't started, the time to act is now.

Security is more complex than ever

As the network expands to support AI, so does the exposure. The survey shows retail already faces the highest rate of AI-driven security complexity of any industry—48% of leaders cite keeping the network secure as their top operational challenge. The reason is structural. Retail is uniquely distributed. You are not defending a single headquarters. You are defending hundreds or thousands of individual store locations, each connected to point-of-sale systems, IoT devices, logistics infrastructure, and customer data flows.

78%

of retail leaders report that AI has significantly expanded their attack surface in the last year.

68%

say AI workloads have introduced new blind spots in security monitoring.

67%

agree the distributed nature of AI makes it harder to maintain consistent security policies across their entire estate.

The investment signals are telling. 85% of retailers have already implemented additional security controls specifically for AI workloads. Yet 68% say threats are evolving faster than their ability to adapt—and the pace of threat evolution shows no signs of slowing.

"There are way too many different AI tools and models. The issue from a security standpoint is it's hard to create guardrails for every possible AI tool your organization must use."

— VP, infrastructure, network and end-user services

Strategic takeaway

Security can no longer be bolted onto the network. Across thousands of distributed store locations, it needs to be woven into the fabric of the network itself. That means tighter coordination between network and security teams, a clear governance framework for vetting AI tools business units want to deploy, and a zero-trust approach to access—every entity connecting to your network—human or AI agent—must be authenticated and verified without exception.

Investment in monitoring tools that can detect anomalies before end users do is equally critical. A network that is slow or degraded is not just a performance problem—it's a security vulnerability. The threat landscape is not waiting for anyone to catch up.

Customer experience is the defining factor

The business case for AI in retail is built on many pillars—efficiency, differentiation, growth. But it stands or falls on one thing: the customer experience.

AI promises an experience where the technology is invisible—inventory that is always available, effortless checkout, recommendations that turn browsers into buyers. But that promise is only as strong as the network delivering it.

The data is clear. In a time where personalization is now the baseline demand, 72% of retail leaders say their ability to meet customer expectations is at risk if their networks cannot support AI. And 71% agree that failure to modernize could mean missed business opportunities—revenue, loyalty, and market share that once lost, rarely return.

71% of retail leaders say their organizations face reputational risk if AI initiatives fail to deliver.

The impact is already visible. Personalized AI-driven recommendations degraded by network latency are not a technical glitch—they are a failed customer interaction. A checkout system that crashes during a peak retail event is not an IT ticket—it's lost revenue and a frustrated shopper who may not return. In retail, the customer does not distinguish between an AI failure and a brand failure. They are the same thing.

There is another dimension to this. 68% of retail leaders agree that operational efficiency is at risk without AI-capable infrastructure. 62% say falling behind competitors leveraging AI more effectively is a real and growing risk. As one retail infrastructure leader put it plainly: "If the network fails or is too slow, it fails our customers and our business. The network is the most critical aspect of IT."

Strategic takeaway

The experience economy runs on networking infrastructure. Retailers who are winning are those who understand the direct link between campus and branch network investment and customer outcome—recognizing that every dollar spent on AI-ready networking infrastructure is a dollar invested in the customer relationship that hinges on each interaction. An underinvested network rarely fails loudly. It erodes the customer experience quietly—and the business feels it long before the cause is clear.

The time is now

Retail's AI challenge is uniquely broad. You are not managing a single store or a handful of enterprise campuses. You are managing a retail operation that never closes—thousands of physical locations and digital channels that customers expect to work flawlessly.

The retailers who will define the next decade are not waiting for perfect conditions. They are making deliberate campus and branch networking investments now—building networks that are secure, scalable, and ready for whatever AI demands next. In an industry with tight margins and fierce competition, the gap between them and those who are waiting is already widening.

The question is no longer whether AI will transform retail. It already is. And for retailers who invest in the right infrastructure today, the opportunity ahead is as significant as the risk of standing still.

There's no time to wait.

See how AI-ready secure network architecture from Cisco is built for the reality modern retailers face.

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