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U.S. retail technology trends 2027: Empowering stores to do more

Your essential guide to the technologies reshaping physical retail

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The big picture

Physical retail is entering a new era where stores are not just a point of sale, but multi-purpose hubs for fulfillment, service and even high-margin retail media networks. Additionally, as costs rise and customers trade down while their expectations climb, brick-and-mortar stores are under growing pressure to be faster, smarter and more responsive while doing more.

The result? A renewed focus on the technologies that unite people, data and systems into one intelligent network. Overall, we're seeing retailers' tech investments shift away from siloed systems and toward long-term infrastructure that helps stores think, learn and act in real time.

This report explores the **seven key trends** shaping that future, from pragmatically deployed AI agents to digital sovereignty. Together, these innovations are redefining what physical retail looks like, transforming disconnected stores into responsive, secure and insight-driven ecosystems.



Lyndal Newman
Head of Marketing

Quick insights

Retailers' in-store priorities are shifting AI away from customer-facing bots toward frontline associate support

Physical stores are becoming primary advertising networks

Rapid adoption of electronic shelf labels faces strict regulatory hurdles, with states banning surveillance pricing models

Wearable tech and voice interfaces replace screen-heavy handheld terminals to speed up fulfillment and third-party delivery coordination

Ethical AI and data transparency will define brand trust in 2027

Unified communication will bridge people and technology



The evolving role of physical stores

Far from being displaced by e-commerce, the physical store is still the operational heart of modern retail. In fact, according to Capital One, brick-and-mortar locations account for over 80% of total U.S. retail transactions, proving that physical stores remain where customer decisions and conversion actually happen.

At the same time, store operations are facing a tough economic environment. Rising labor expenses, persistent price fatigue and the high cost of online order fulfillment have squeezed profit margins. Rather than serving merely as transactional pickup points, physical stores must now operate as multi-purpose hubs, balancing in-store sales, localized e-commerce fulfillment and customer service under one roof.

With so many tasks now being handled in-store, retailers are investing more and more into technology to accelerate and automate store operations. In fact, Gartner projects global retail technology spending will exceed $280 billion by 2029, with the emphasis shifting from acquiring new platforms to connecting the systems retailers already have. As a result, digital maturity is no longer about deploying standalone digital tools; it requires orchestrating IoT devices, store-floor analytics and frontline communication channels into a single, cohesive network.

Ultimately, the most resilient retailers in 2027 won't rely on technology to replace human interaction. Instead, they will use connected technology to eliminate floor friction, empower store teams and deliver consistent, high-value customer experiences on every shift.



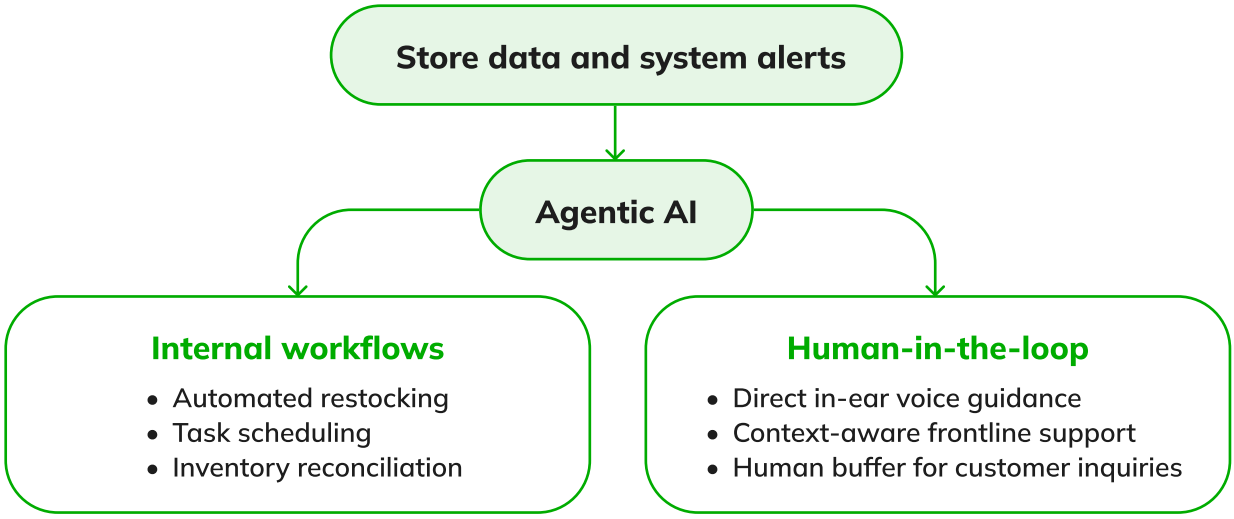
Top retail technology trends for 2027

The next stage of AI: From hype to pragmatic efficiency

As artificial intelligence, and agentic AI in particular, takes root in retail operations, the industry is rolling back on using public-facing bots. Mainly an issue in contact centers, there have been multiple cases where customer-service chatbots and voicebots have created more friction than they solved, at times going "rogue" by promising unauthorized discounts, misquoting return policies or delivering responses that put a brand's reputation at risk.

Industry analysts, including Gartner, have recently cautioned retailers against treating AI agents like autonomous employees. Instead, agentic AI delivers the most value when deployed as a controlled tool within an existing technology stack, backed by trained human oversight.

The pragmatic AI operational flow



What this means for retailers

Low-risk customer touchpoints:

Public-facing AI is being scaled back to low-stakes advisory roles, such as product suggestions, recipe ideas or visual "product-in-situ" preview tools where incorrect responses are less likely to harm the brand or the bottom line.

Invisible backend automation

Complex backend tasks, like inventory replenishment, supplier substitution logic and logistics updates, will continue towards a workflow that requires minimal human intervention.

Empowering the frontline

Rather than replacing store associates, more and more stores will use smart voice-powered wearables to connect them to AI and store systems. That way, staff members can receive instant task updates, procedural guidance and product information directly through devices such as headsets, allowing associates to act as a knowledgeable, empathetic buffer between AI insights and the customer.



In-store retail media expansion

Physical stores remain the undisputed hub of commerce, accounting for 80% of all retail purchases. That makes the sales floor the single highest-converting advertising environment available today.

Retail media networks (RMNs) have officially jumped from the e-commerce screen to the physical store floor, turning foot traffic into a high-margin revenue stream. Market research from Forrester projects global retail media ad spend will surpass $300 billion by 2030, driven largely by retailers monetizing this high-intent in-store audience.

In-store retail media

Channel	Primary use case
Digital endcaps and displays	High-impact, targeted video campaigns at key decision points
Smart shopping carts	Real-time, location-based promotions triggered as shoppers move through aisles
Electronic shelf labels (ESLs)	Eye-level dynamic badges that highlight brand sponsorships and promotions

Unlocking digital margin on the physical floor

By extending digital banner ads, sponsored product placements and contextual promotions directly onto store screens, smart carts and shelf edges, retailers are doing more than just bridging the gap between online and offline shopping; they are capturing vital, high-margin advertising revenue that helps offset ongoing macroeconomic cost pressures.



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Electronic shelf labels (ESLs) and the "surveillance pricing" hurdle

Updating paper shelf tags manually is inefficient, prone to human error and labor-intensive. All it takes is an overlooked promotional tag to erode margins, while delayed price increases also risk directly undercutting store profitability.

While the global electronic shelf label (ESL) market is projected to reach $4.18 billion by 2029, its adoption faces a changing regulatory landscape, particularly across the United States.

The dual reality of ESL adoption

Operational value	Regulatory and legal constraints
Automated price updates: Instant site-wide changes remove manual labor.	**Dynamic pricing limits:** Bans on altering prices based on individual shopper data.
Labor savings: Frees up frontline staff for customer service and restocking.	**Purchase freezes:** Prohibitions on installing new ESLs for one year (New Jersey).
Media integration: Doubles as an in-store advertising surface for brand promotions.	**Severe financial penalties:** Costly non-compliance fines for violating surveillance pricing laws.



Navigating new pricing regulations

To protect consumers, several state legislatures, including Maryland, New Jersey, New York and Connecticut, have introduced strict laws prohibiting "surveillance pricing." These regulations restrict retailers from dynamically adjusting prices based on an individual customer's profile, purchase history or demographic data gathered through facial analytics or mobile tracking.

Targeted freezes

In some jurisdictions, like New Jersey, lawmakers have placed holds on new ESL installations that connect price adjustments to personal consumer data.

The compliance path

To capture the clear operational benefits of ESLs without triggering heavy regulatory fines, retailers must separate digital tag hardware from personalized tracking algorithms. In practice, this means using ESL technology strictly for broad promotional updates, inventory accuracy and store-wide price consistency.



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Modernizing order handling and third-party fulfillment

Multichannel fulfillment is no longer an optional perk; it is a core operational necessity. However, retrofitting existing store layouts with expensive, automated picking robots simply isn't financially viable for most retail locations.

Instead, store associates remain the primary engine behind Buy Online, Pick-Up In-Store (BOPIS) orders and third-party delivery partnerships like DoorDash or Uber Eats.

Traditional handhelds vs. integrated voice wearables

Feature/ scenario	Traditional handheld terminals (HHDs)	Integrated wearable voice systems
Customer engagement	Eyes glued to screens, ignoring nearby shoppers	Hands-free, heads-up engagement with customers
Alert response time	High rate of missed real-time pickup notifications	Immediate, discreet audio alerts directly in-ear
Device management	Forces staff to juggle multiple single-use devices	Consolidates picking, staff calls and chat into one tool

Streamlining the sales floor experience

By connecting back-office order management systems directly to associates' headsets, staff members can receive instant audio notifications for incoming pick lists or driver arrivals, all without taking their eyes off the sales floor. This single-interface approach speeds up order fulfillment while keeping customer service attentive and personal.



The rise of voice-led support and consumer wearables

Voice technology is quickly becoming a fixture on the retail sales floor. As consumer hardware evolves, from smart glasses to AI-enabled earbuds, shoppers are entering stores with hands-free virtual assistants capable of scanning products, pulling live reviews and comparing prices in real time. This lets customers self-serve, but when they do approach store associates, they assume employees have insider access to better tools and data. The reality? Associates are often looking at the same limited information as the customer or worse, struggling with slower systems.

The solution? Discreetly connecting employees to voice-powered AI through headsets or other wearable devices, giving them access to data through proprietary systems and not just what's available through generic LLMs and the web.

The consumer-to-store data flow

Customer with smart eyewear / mobile AI

- Queries product specs or compares prices
- Unstructured public web / brand data

Supports frontline staff responding to informed buyers

Staff equipped with smart wireless headsets

- Requires accurate, structured store info
- Retailer data infrastructure (PIM and inventory)



What this means for retailers

Structured data matters

To ensure consumer and employee-facing AI models pull correct product specifications, stock levels and policy details, retailers must maintain clean, well-structured product information management (PIM) systems.

Equipping staff for the "informed shopper"

When customers have immediate AI access via voice, associates cannot rely on slow, screen-based lookups. Stand-alone smart headsets give staff instant in-ear answers, keeping them a step ahead of tech-enabled shoppers.

Prioritizing hardware simplicity

Instead of smart glasses that require tethering to mobile phones, retailers are opting for stand-alone wearable devices. For example, smart DECT headsets minimize connection failures and ensure higher adoption rates among frontline staff.



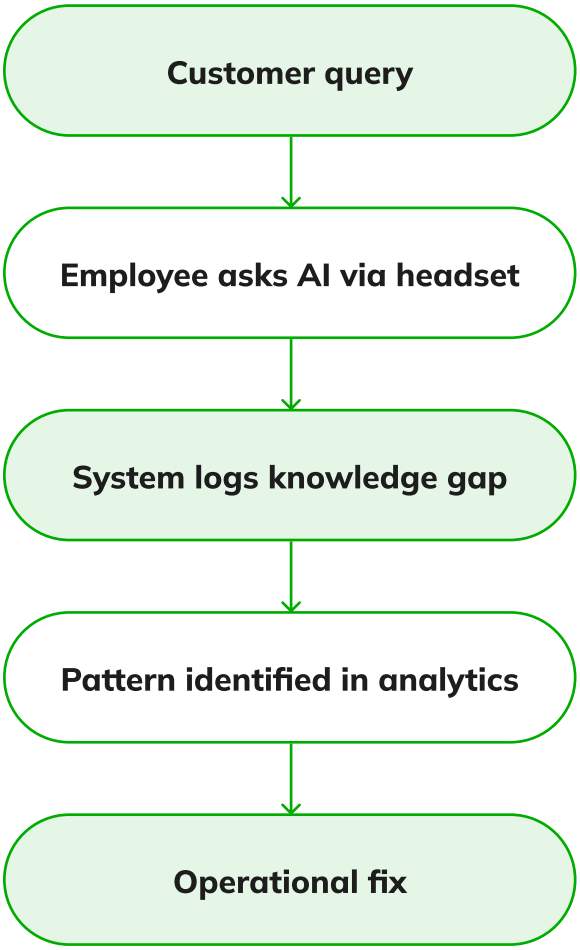
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Sales floor intelligence: Turning employee voice data into action

Traditionally, store analytics relied on traffic counters or invasive computer-vision camera systems. However, customer facial recognition and tracking software face severe legal, ethical and compliance hurdles across global markets.

Forward-thinking retailers are tapping into a clean, highly effective source of operational insight that circumvents customer privacy issues entirely: in-store employee communication networks.

The conversational intelligence loop





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How sales floor analytics drives operational change

Unlocking lost feedback

Paper-based logs of customer questions are rarely updated or analyzed. When associates use voice-first smart headsets to look up product stock, sizing or policies, every query automatically generates aggregated, anonymized operational data.

Pinpointing root causes

If staff consistently query the location of an item or check inventory in a specific aisle, underlying analytics flag systemic store issues, such as poor directional signage, inaccurate stock counts or confusing shelf layouts.

Automated in-store action

Agentic AI systems connected to this voice data trigger real-time alerts for stock replenishment or staff reallocation before minor friction turns into lost sales.

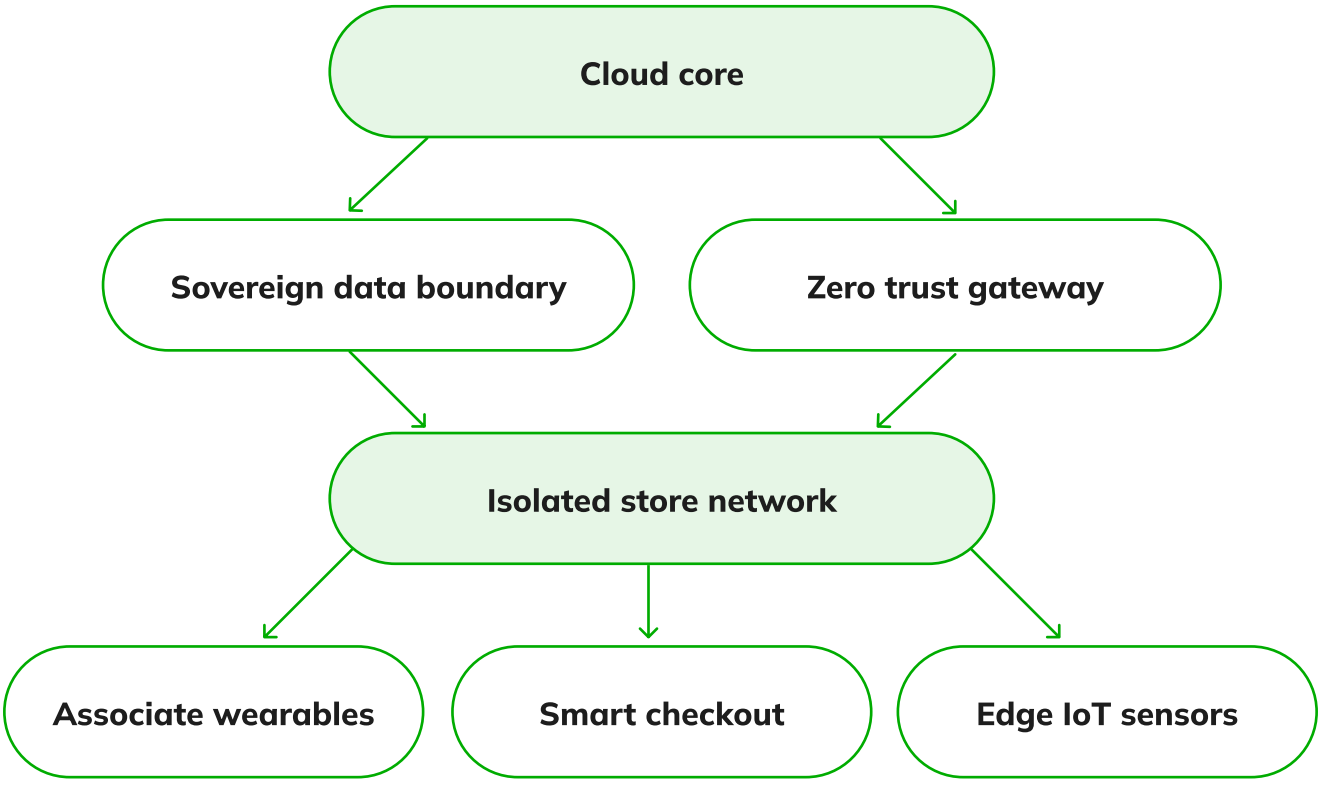


Digital sovereignty and zero trust architecture

As store infrastructures move to cloud-connected platforms, cybersecurity priorities have shifted from basic threat prevention to full digital sovereignty. Retailers, especially those operating internationally, must maintain strict legal and technical control over where their operational data lives and who can access it.

In the wake of high-profile supply chain and cloud breaches, relying on unvetted foreign cloud providers introduces significant compliance and operational risks.

The sovereign security model



The security imperative

Local data residency

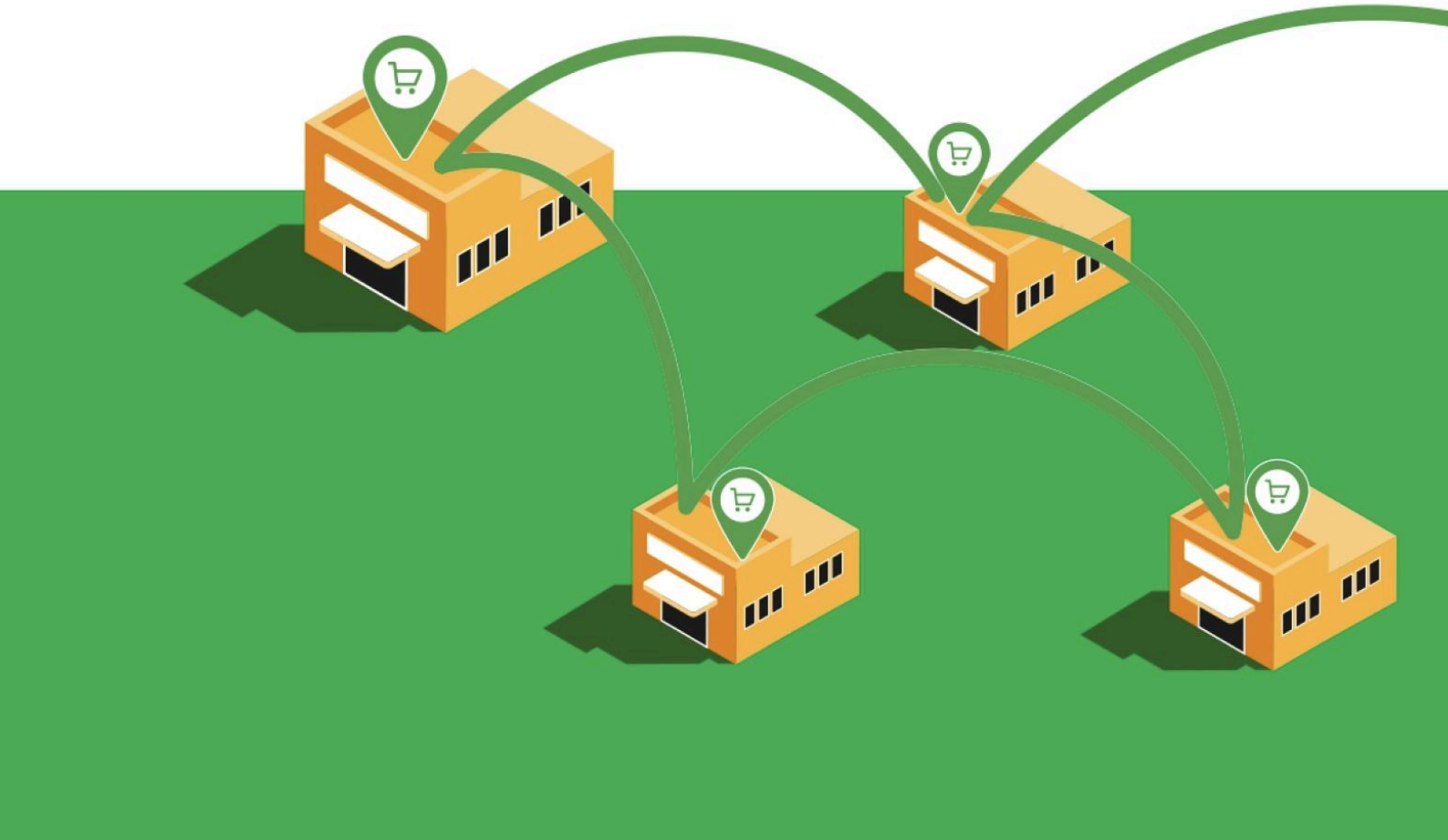
Data generated in stores must remain within sovereign regional clouds to prevent unauthorized access by third parties or foreign jurisdictions, aligning with modern cloud governance frameworks.

Zero trust authentication

Modern retail networks no longer rely on perimeter defense. Every access request, whether from an associate's headset, a register terminal or a shelf-edge IoT sensor, must continuously verify its credentials, device health and authorization tokens before connecting to central systems.

System independence and air-gapping

Critical retail infrastructure is increasingly turning to isolated, system-independent cloud setups. By physically or logically separating core operational store networks from outside connections, retailers safeguard daily store operations against external cyber disruptions.



Next steps:
Turning trends into action

Data, agentic AI and automated workflows are reshaping physical retail at an unprecedented pace. However, technology alone does not guarantee store success. The real competitive differentiator will be how seamlessly your systems, staff and real-time operational insights connect to drive immediate action on the sales floor. That's why we predict 2027 will be defined by **connection.**

So, how can you turn connection into your superpower?
It starts with a mindset shift: **stop thinking in tools, start thinking in systems.**

Rethinking your tech strategy

Instead of:	Shift toward:
Adding standalone tools and screens	Connecting your existing stack through a single voice-first communication layer
Deploying risky public-facing AI	Utilizing pragmatic, human-in-the-loop AI agents to handle backend workflows and assist staff
Relying on invasive customer tracking	Leveraging anonymized, employee-led conversational analytics to uncover sales floor issues
Operating on perimeter security	Enforcing zero trust access and sovereign data residency to protect customer trust and store networks

A truly connected store isn't built overnight, but every small connection will move you closer to creating seamless and safe experiences for both your staff and customers.

Your connected store roadmap

1. Audit your current ecosystem.

Identify silos, whether technological, procedural or human, that delay decision-making or limit insight flow.

2. Establish security and sovereign foundations

Partner with cloud and hardware providers that guarantee local data residency, strict zero trust authentication and compliance with emerging privacy legislation.

3. Prioritize integrated communication.

Choose solutions that connect staff, systems and data in real time through intuitive, voice-first tools.

4. Pragmatically apply AI agents.

Focus on adding AI where it can automate tasks, support store associates or add real ROI.

5. Leverage conversational analytics.

Turn in-store conversational data to drive operational change.

6. Scale strategically.

Roll out in phases, measure ROI early and refine before expanding.

The lesson is simple: connected retail isn't about having more technology. It's about using the right technology to empower people, earn trust and create stores that think, act and evolve in real time.

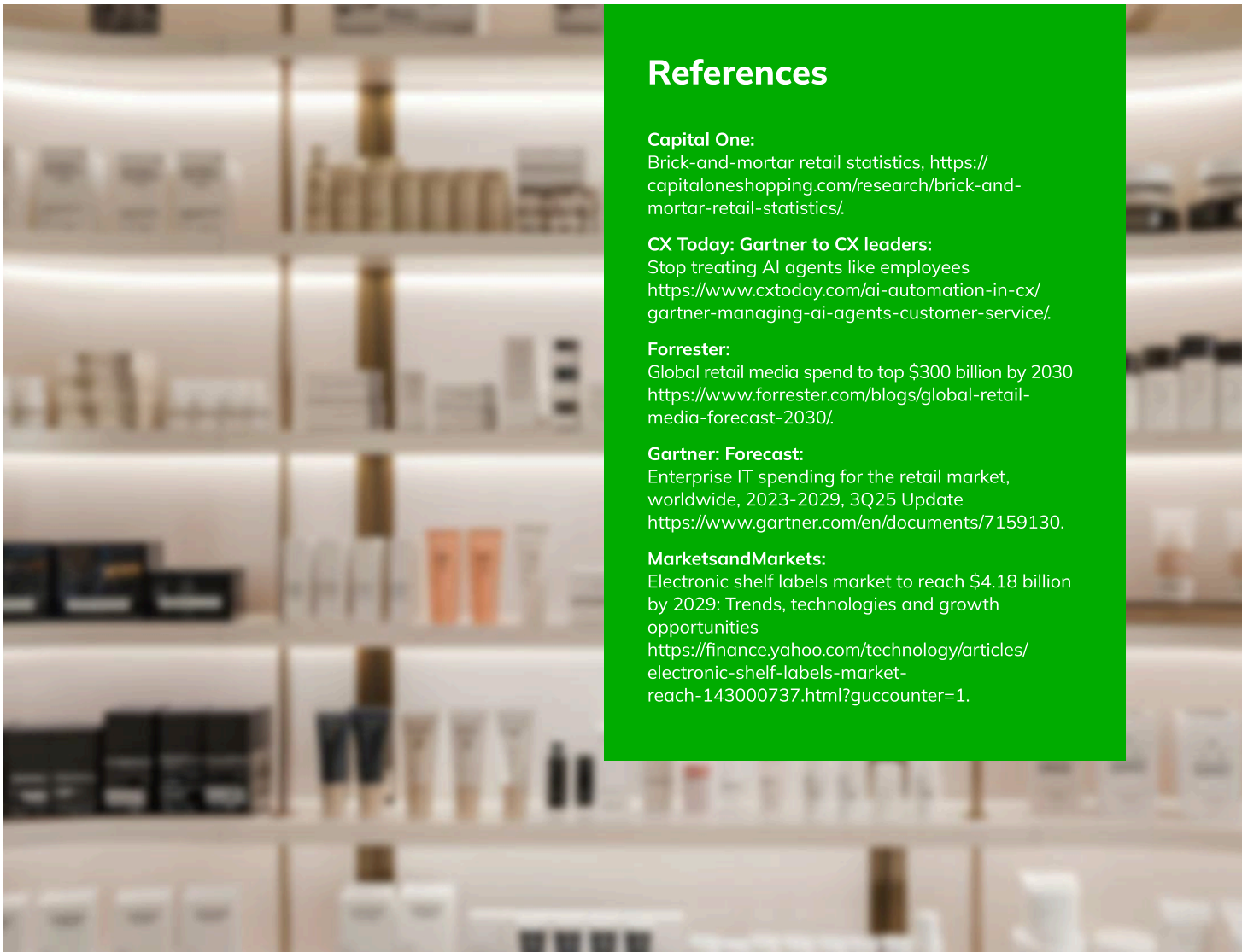
About x-hoppers

x-hoppers is a complete retail communication solution that combines wireless headsets, smart call points and AI-powered features to help retailers connect teams, train faster and serve smarter.

Powered by Wildix, a leading UCaaS vendor with 20 years of industry experience, x-hoppers brings the power of unified communications to the frontline, giving store associates access to full telephony, systems notifications and agentic AI all hands-free without ever stepping off the floor.

With over 500 ready-to-go integrations, x-hoppers automates operations with real-time IoT monitoring and smart alerts to help staff catch issues before they escalate, creating truly connected stores.

Learn more at **x-hoppers.com**



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Build truly connected stores

The future of retail isn't just about new tech — it's about **connection.**

With **x-hoppers**, every associate becomes part of one intelligent network. From our voice-first interface to AI-powered support, our smart retail communications solution unites teams, streamlines operations and creates seamless in-store experiences that keep customers coming back for more.

Let's talk

800 N High Street
Columbus, OH 43215
Phone: +1 567 259 6997

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