Catching the AI Wave

Mapping a GenAI Strategy for the Evolving Retail Industry

THE UNIVERSITY OF ARIZONA
Lundgren Retail Collaborative

Generative AI (GenAI), Agentic AI, and Predictive AI are distinct technologies within the broader field of artificial intelligence, each offering unique capabilities and applications. As the retail landscape rapidly evolves, it is critical for both retail leaders and educators to understand how to effectively leverage these tools to stay competitive. That starts with a clear understanding of the different types of AI.

THREE TYPES OF AI[1]

Predictive AI: Often thought of as "traditional AI," predictive AI has been used in retail for over a decade. It recognizes patterns in data to make informed predictions and power specific tasks. Retail examples: calculating customer lifetime value, personalizing marketing based on shopping history and preferences.

Generative AI: GenAI refers to models that generate novel content based on user prompts—like images, copy, video, and more. This form of AI extends beyond the analytic capabilities of traditional AI by leveraging large datasets to create entirely new outputs. Retail examples: creating personalized product descriptions at scale and generating dynamic marketing content.

Agentic AI: Agentic AI is an emerging form of AI made up of autonomous agents that learn, adapt, and take action without constant human input. These systems can make decisions and optimize processes in real time, potentially helping businesses respond faster to complex challenges. Early retail examples: task automation, inventory restocking, and autonomous price optimization.

AI continues to develop rapidly, and additional forms of AI are emerging seemingly daily. At a minimum, understanding and deploying these three types of AI and their capabilities will be essential for retailers to maintain competitive advantage in the coming years.

This white paper focuses on helping retailers leverage generative AI (GenAI), which is used to create new content and generally requires prompting by users to initiate a task. While GenAI has been in development for years, it entered the public spotlight in late 2022 with the release of tools like ChatGPT. Since then, GenAI has rapidly transformed the business landscape.

In the pages ahead, you'll learn how retailers are working to engage with this powerful technology, and how you, as a retail leader, can harness it to drive innovation in your own organization.

Introduction

AI is already reshaping the retail sector. Major retailers like Walmart, Amazon, Macy's, and Procter & Gamble are leveraging all forms of AI to enhance customer experiences, improve operations, and boost employee productivity.

Much of this innovation is driven by large language models (LLMs), machine learning, and reinforcement learning, with recent advances in natural language processing enabling a true explosion of the tech across the business landscape.

However, the most transformative shift in retail today isn't the technology, it's the mindset required to use it strategically.

From maximizing value in Predictive AI to pioneering GenAI, the organizations that will thrive in this moment of change will do so by cultivating an agile mindset; defined by curiosity, experimentation, and cross-disciplinary skillsets. This approach isn't about mastering every new tool. It's about staying flexible, learning continuously, and integrating knowledge across functions.

In the past, organizations cultivated employees with deep expertise in specific verticals such as finance, IT, and marketing. In this new landscape, top employees will need to shift from deep vertical expertise to become masters of integration. The most valuable employees of tomorrow won't just be tool-savvy; they'll be able to connect the dots between business functions, customer needs, and emerging technologies.

To operationalize this mindset, implement AI and drive meaningful change, retail organizations must focus on urgent critical priorities:

First, acquire a comprehensive understanding of how GenAI can fundamentally reshape operations across the entire organization and craft a strategic plan to integrate these transformative capabilities.

Second, develop a GenAI-literate workforce with an agile mindset, prepared to leverage technological advancements while safeguarding the early-career training ground that produces tomorrow's leaders.

Finally, retailers must maintain a clear-eyed appreciation of the risks and challenges associated with this seismic shift and commit to a comprehensive risk management strategy.

Buy vs. Build?
TYPES OF GENAI DEPLOYMENTS

1 GenAI Embedded in Enterprise Solutions

Many retailers already use GenAI through built-in features in major SaaS platforms. These tools integrate GenAI for automation, analytics, and productivity enhancements:

- Salesforce (Einstein AI Assistant), HubSpot (Breeze Agents)
- Microsoft 365/Office Suite: Copilot
- Google: AI-powered search, Gmail writing assistant, Gemini, AI Studio

2 Off-the-Shelf AI Tools

Generative AI funding surged to $25.2 billion in 2024, making GenAI more accessible than ever. Employees can leverage a wide variety of available GenAI tools today such as:

- ChatGPT: Conversational GenAI for writing, problem-solving, and image generation
- DALL·E & Midjourney: AI-generated images from text
- Claude: GenAI assistant for reasoning and automation

3 Proprietary & Semi-Custom GenAI Solutions

Retailers can build AI tools tailored to their specific needs using existing platforms:

- Custom GPTs: AI assistants like Co-CEO
- Microsoft Azure AI: Custom GenAI solutions
- AWS AI Tools: Amazon Connect, Amazon Bedrock
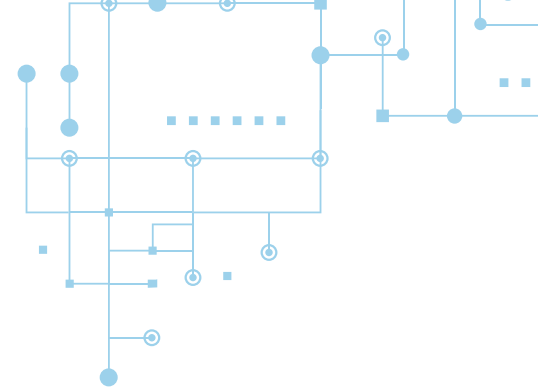
To help retailers across the industry achieve these strategic priorities and chart a path forward, this white paper:

1. Highlights successes, challenges and lessons learned from large retailers working to implement GenAI in their organizations.

2. Offers retail leaders a roadmap, specific use-cases and case-based insights to accelerate GenAI adoption across their organizations.

3. Lays out existing and emerging risks and challenges associated with GenAI adoption, for individuals, organizations and society.

The Road Ahead

While GenAI offers immense potential, the challenge lies in turning that potential into measurable business results.

Many retailers have developed notable expertise implementing traditional (predictive) AI (using it to power personalization, forecast demand, and streamline operations) but GenAI represents a new frontier.

Our conversations reveal that many organizations are still in the experimentation and learning phase with GenAI. Indeed, data suggests that relatively few organizations have been able to translate their initial enthusiasm for GenAI into enterprise-wide strategy, with some reports suggesting only between 5 and 10% of GenAI pilot programs are showing meaningful business outcomes, such as revenue growth, cost savings, or operational efficiency gains.

In fact, a recent MIT Report found that just 5% of integrated AI pilots are extracting millions in value, while the vast majority remain stuck with no measurable P&L impact. While adoption is still in its infancy, momentum is building, but we are still in the early innovation stages of this exciting tech.[2]

Unlocking real value means moving beyond excitement to practical implementation.

Insights from the C Suite

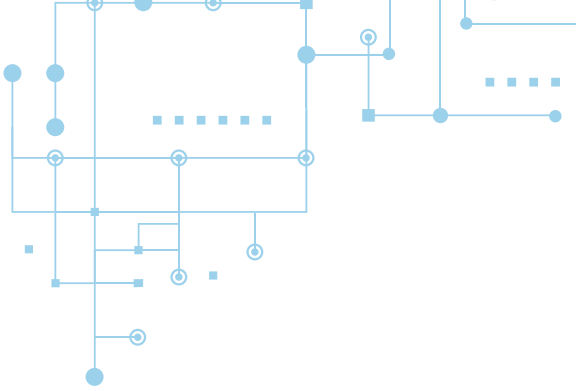### TURNING POTENTIAL INTO PRACTICE

**Terry J. Lundgren
The Terry J. Lundgren Center for Retail, University of Arizona | Columbia Business School Executive in Residence | TJL Advisors, LLC Founder, CEO**

"I have heard many CEOs talk about how AI is 'going to' benefit their companies but few can explain exactly how that is being applied to their business today."

FOCUS ON EXPERIMENTATION & CURIOSITY

Keith Credendino, Chief Information Officer, Macy's Inc.

"Our mindset is one of pragmatic experimentation. Instead of pursuing every possible use case, we focus on identifying and prioritizing opportunities with the highest potential value—those that will lead to significant revenue growth or savings and can be implemented at scale. This targeted approach prevents us from wasting resources on incremental changes, and ensures our efforts are focused on driving material change for the organization."

Step 1: Define the Problem GenAI Can Solve
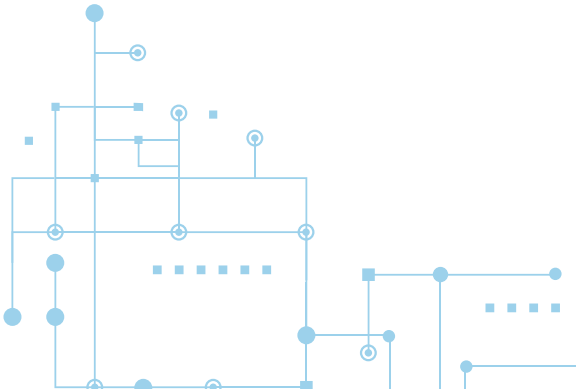
Mapping GenAI Potential Across the Business

To realize meaningful value, retailers must begin by identifying where GenAI is already gaining traction and why.

Among the retailers we interviewed, early signs of success with GenAI are emerging in two key areas: customer experience and employee efficiency.

To identify more transformative wins, think about the long-standing inefficiencies and overlooked pain points in your organization that may have seemed unsolvable until now. With the introduction of GenAI tools, previously ignored or deferred problems can be reexamined through a new lens, revealing opportunities for quick, meaningful improvements that were once out of reach.

GenAI implementation will vary among retailers, however, and should be driven by a strategic analysis of business functions to identify the most valuable areas for integration.

Now is the time to move from ambition to action.

To guide your next steps, use this section to pinpoint high-impact opportunities, establish priorities, and shape a structured AI strategy. The following framework is designed to help leaders explore key questions such as:

- *Where does AI fit into our strategic vision?*

- *How can it support critical functions like marketing, finance, customer service, operations, and beyond?*

By examining real-world case studies from pioneering retailers and highlighting data on challenges to GenAI adoption, this white paper provides the insights needed for informed, organization-wide decisions. With a clear understanding of both potential and risk, leaders can take a proactive, goal-aligned approach to streamline operations, enhance customer experiences, and drive sustainable growth. Use the following framework to identify areas of opportunity within your organization.

Insights from the C Suite

Seeing Old Problems with New Eyes

**Keith Credendino,
Chief Information Officer, Macy's Inc.**

"We all have our 'broken things in the house'—problems we've adapted to because the right tool didn't exist to fix it. Now that we have this new GenAI tool, it's time to reconsider these items. We can now solve them in a new way."

Framework: Pathways to GenAI Experimentation & Impact

Across all categories, GenAI offers automation, personalization, and data-driven content creation enabling retailers to enhance efficiency, innovation, and overall performance.

case study

PROCTER & GAMBLE TURNING RESEARCH INTO RESULTS

Procter & Gamble conducts extensive in-home research to uncover unmet needs and identify product opportunities grounded in real life. To streamline data collection, protect proprietary data, and accelerate the path from insight to product development, the company built an internal GenAI tool called Chat PG.

Chat PG transforms how teams capture and act on consumer insight. Rather than spending weeks manually reviewing in-home interviews, Chat PG records and summarizes qualitative research sessions, eliminating bias and surfacing key themes faster.

The result? A dramatically shorter path from insight to idea. Teams can now generate concepts in days instead of months, allowing more time for testing, iteration, and refinement.
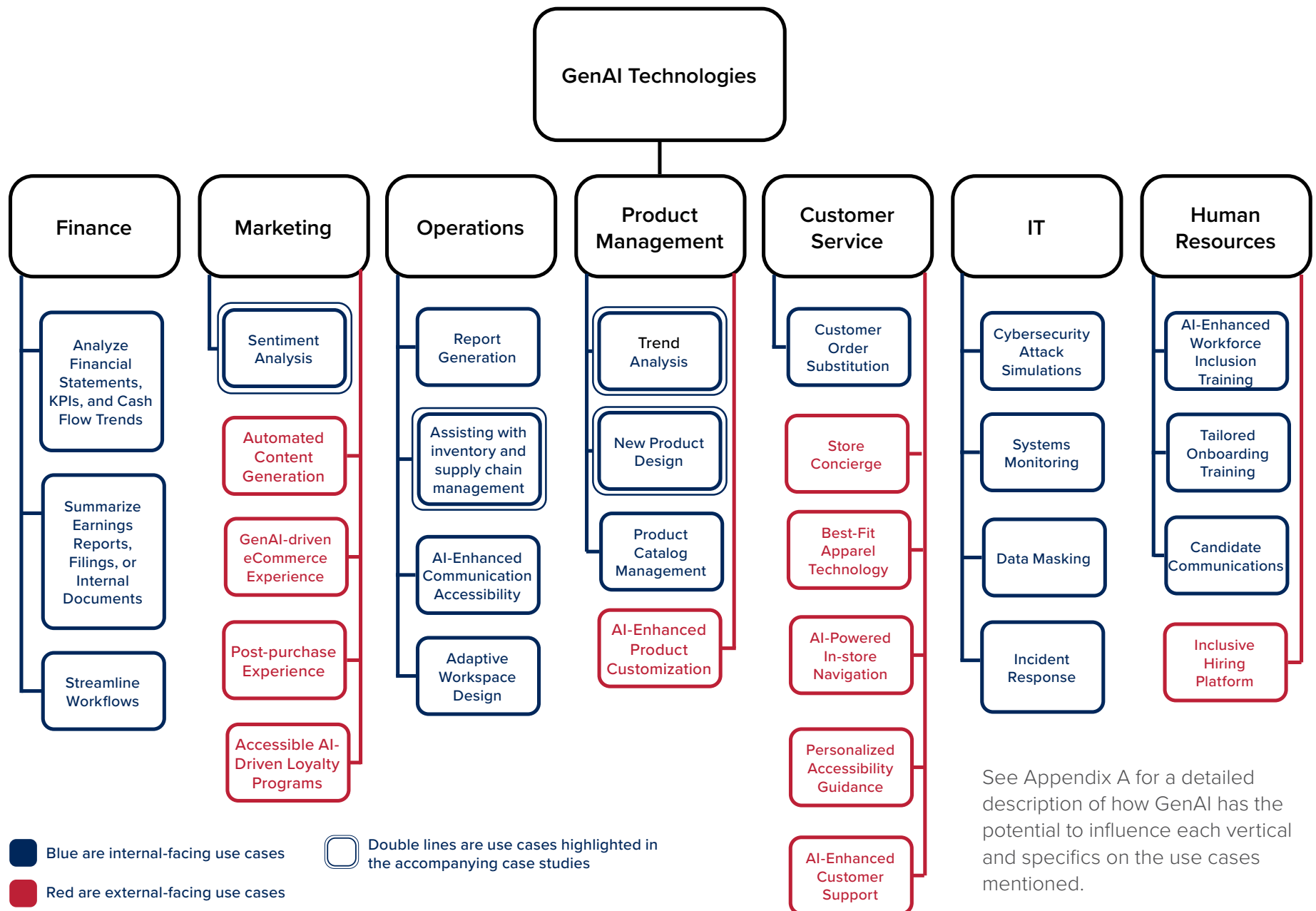
Procter & Gamble uses Chat PG alongside another in-house GenAI tool to evaluate the quality of each new insight against a database built from decades of consumer research. The tool can then

generate improved iterations of the insight to enhance clarity and impact, leading to 10X the number of concepts generated.

The final step in P&G's GenAI-assisted research to output system is AI Studios, a platform that helps evaluate brand concepts with a speed and precision that once seemed impossible. By comparing new ideas against decades of historical performance data, the tool identifies high-potential creative in only a matter of hours. It can even adjust messaging for different demographics and refine wording to better match consumer language in a localized region.

Beyond concepts, AI Studios supports scriptwriting, storyboarding, and ad testing. A process that once cost tens of thousands of dollars and took a month or more now takes just days and can cost as little as a few hundred of dollars.

Key Takeaway: Internal GenAI tools can boost speed and clarity in consumer research workflows. When built on proprietary data and integrated with existing processes, these tools create a strategic advantage while protecting intellectual property.

GenAI Technologies

Finance
- Analyze Financial Statements, KPIs, and Cash Flow Trends
- Summarize Earnings Reports, Filings, or Internal Documents
- Streamline Workflows

Marketing
- Sentiment Analysis
- Automated Content Generation
- GenAI-driven eCommerce Experience
- Post-purchase Experience
- Accessible AI-Driven Loyalty Programs

Operations
- Report Generation
- Assisting with inventory and supply chain management
- AI-Enhanced Communication Accessibility
- Adaptive Workspace Design

Product Management
- Trend Analysis
- New Product Design
- Product Catalog Management
- AI-Enhanced Product Customization

Customer Service
- Customer Order Substitution
- Store Concierge
- Best-Fit Apparel Technology
- AI-Powered In-store Navigation
- Personalized Accessibility Guidance
- AI-Enhanced Customer Support

IT
- Cybersecurity Attack Simulations
- Systems Monitoring
- Data Masking
- Incident Response

Human Resources
- AI-Enhanced Workforce Inclusion Training
- Tailored Onboarding Training
- Candidate Communications
- Inclusive Hiring Platform

Legend:
- ■ Blue are internal-facing use cases
- ■ Red are external-facing use cases
- ▭ Double lines are use cases highlighted in the accompanying case studies

See Appendix A for a detailed description of how GenAI has the potential to influence each vertical and specifics on the use cases mentioned.

See Appendix B for additional use case examples.

case studies

WALMART: FAST TRACKING THE TREND-TO-PRODUCT PIPELINE

GenAI is revolutionizing product development by enabling companies to analyze market trends, assess consumer sentiment, and rapidly generate innovative concepts. By leveraging GenAI, brands can accelerate ideation, enhance product testing accuracy, and bring new offerings to market more efficiently.

For example, Walmart has deployed GenAI in its "trend-to-product pipeline," using large language models to spot social-media trends and image-generative AI models to auto-create apparel concepts. By coupling real-time trend detection with rapid visual prototyping, the retailer transforms early signals of fashion trends into ready-to-manufacture apparel designs in a matter of weeks rather than months.

Through AI-driven insights, companies can refine product strategies, anticipate customer needs, and enhance their competitive edge in an ever-evolving marketplace.[3]

MACY'S REDUCING FRICTION FOR IN-STORE TEAMS WITH COMPUTER VISION AND GENAI

For retailers with a high volume of seasonal items, product turnover can make it difficult to ensure that product descriptions are up to date and contain detailed information about styles and features.

> "
>
> *Starting with the fashion space, we've been able to reduce the amount of time to design, produce, and get new apparel into the hands of our customers from months to weeks.*
>
> Desirée Gosby, Vice President, Emerging Technology Walmart Global Tech

To address this challenge, Macy's implemented a computer vision model capable of analyzing products and automatically extracting key attributes such as lapel style, heel height, dress length, and color of apparel. The system uses visual cues to identify product characteristics to supplement available data and then write updated product descriptions for the database.

This approach has helped reduce the friction experienced by in-store colleagues by improving product accuracy and classification. With better data, employees are better equipped to assist customers, ultimately enhancing the overall in-store experience. In addition, the GenAI solution enhances the ecommerce experiences, allowing online shoppers to access more robust product descriptions.

Macy's GenAI and computer vision solution bridges the gap when upstream data is incomplete or unreliable, empowering front-line teams with more accurate, timely, and actionable product information.

Key Takeaway:

Start by examining existing problems or identifying new opportunities within a targeted vertical (see framework). Choose as many focus areas as your budget and resources allow. With a mindset of curiosity and experimentation, begin piloting GenAI in those areas. Use rapid prototyping and experimentation to test ideas, learn what works, and refine or discard what doesn't.

Scale the successes and learn from the failures, knowing that up to 9 out of 10 pilots may not succeed. What matters most is taking action and embracing the learning process to unlock GenAI's full potential. This kind of strategic experimentation requires the right mindset, culture, and workforce, a topic we explore more deeply in the next section.

Insights from the C Suite

New Tools, New Thinking, New Jobs

Krishnaveni (Krishna) Gnanasekaran, Senior Vice President, Enterprise Data Analytics & Technology, Macy's Inc.

"Unless you're curious, you're going to be left behind.

If we stick to what we've always done just because it worked before, we're going to get left behind. We need to be curious, explore what's coming our way, and understand how it applies to what we do today. In just a few years, every role will look different. AI will transform the way we work by taking on routine tasks, freeing us to spend more time with customers and colleagues, deepen relationships, make better decisions, and focus on critical thinking to anticipate what's ahead."

Keith Credendino, Chief Information Officer, Macy's Inc.

"Every technological shift, from factory automation to the modern warehouse, has proven that while some jobs may change, new opportunities always emerge. We've seen this before: someone has to build, operate, and maintain the new machines and technology. With GenAI, the principle remains the same. New roles will be created to manage, guide, and prompt these tools, not just build them. This evolution is a natural part of progress, and it presents a significant opportunity for new skills and new jobs."

Step 2: Preparing Talent for the GenAI Journey

Once your organization has a plan to pilot GenAI in several key business areas, the next critical component is ensuring the workforce is ready to embrace this approach and navigate the transformation.

Future-ready talent won't be defined solely, or even primarily by technical proficiency. Instead, tomorrow's top talent will excel in their ability to integrate knowledge across disciplines, merging business fundamentals with GenAI fluency to spot new patterns and solve emerging challenges. Success requires a mindset of curiosity and experimentation, agile thinking, and new skills.

Retail leaders should proactively equip employees with GenAI competencies that support immediate operational transitions while considering future needs for long-term strategic advancement. Educators shaping the future workforce must infuse GenAI literacy into foundational curriculum while encouraging students to test, learn, and adapt.

Organizations need to invest in workforce training that builds both GenAI fluency and a culture of curiosity and experimentation across all levels. Research shows that while GenAI adoption is rising, it remains concentrated among C-suite leaders, and broader implementation is limited more by gaps in employee knowledge than by the technology itself. [4, 5]

The Lundgren Retail Collaborative's own research reveals a dual perspective among college students: they're embracing GenAI tools while expressing consistent concern about the technology's impact on their future.

Insight 1:

College Students Believe They Have Strong Knowledge around GenAI

While the public conversation is turning to the need to teach AI skills, the Lundgren Retail Collaborative's survey shows that college students appear to pick up on GenAI tools with little formal instruction. They're already figuring that out instinctively by playing with the tools available to them. The gap is in identifying use cases, responsible integration and business contexts.

Student responses from a 2025 survey suggest a high degree of self-reported confidence and foundational understanding when it comes to GenAI literacy. Almost 90% of respondents agreed or strongly agreed that they feel confident using AI in a school or professional setting (mean score = 4.45), with similarly high agreement levels for understanding GenAI concepts (mean = 4.33) and ethical considerations such as bias, misinformation, and responsible use (mean = 4.36). These responses indicate that students are not only engaging with GenAI tools, they're also becoming aware of the complexities involved in applying them responsibly.

New technology has become so intuitive that it often requires little to no formal training. For example, many toddlers can seamlessly navigate an iPad to find their favorite episode of Bluey. In the same way, teens and college students are picking up AI tools and learning through exploration, experimentation, and trial and error, even without structured instruction.

To rate their agreement level with the statement: I am confident about my ability to use AI in school or professional environment.

1% Strongly Disagree
Somewhat Agree
9%
Agree
33%
56% Strongly Agree
Strongly Agree
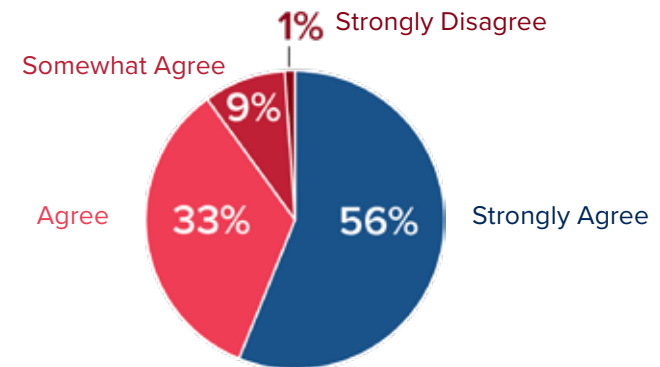
Scale: 1–5 | N=474 for 2025

> "
>
> *AI should only be treated as an extra tool for some things. Many students are overusing it and learning nothing from the college experience and soon won't be able to function in high-level careers.*
>
> Student, University of Arizona
> Eller College of Management

Insight 2:

Technical Confidence is Not Enough

While students are quickly learning to incorporate AI into their lives, technical fluency alone is not sufficient for long-term success. What's needed is integration of tools, insights, and real-world judgment.

NextGen retail employees need to understand what drives consumption, why people buy, and what "jobs" a new product or service is meant to fulfill. Students must grasp the factors behind purchasing decisions–such as quality, design, appearance, packaging, price-value balance, shelf placement, and marketing–so they can apply GenAI not just to automate, but to innovate meaningfully.

They need foundational business education paired with guidance on how to think, i.e. how to approach problems with curiosity, test ideas, and adopt an agile mindset. Without the ability to connect GenAI use with business context and consumer behavior, knowledge remains fragmented.

As GenAI becomes more deeply embedded in professional workflows, continued emphasis on critical thinking, ethical application, and ongoing learning will be essential. These results reinforce the value of building curiosity and experimentation into both classroom experiences and on-the-job training.

Insights from the C Suite

Marc Pritchard, Chief Brand Officer, Procter & Gamble

"I think we need to move from a world of narrow, specialized expertise to one that focuses on integrated brand and product experiences. These are the experiences that connect with consumers or clients across every facet: the product, the packaging, the communication, and the retail execution. It's not just about being a generalist; it's about being deeply integrated."
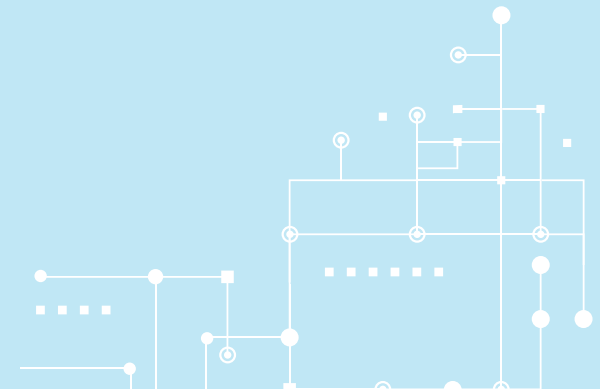
Insight 3:

College students fear AI will replace entry-level jobs, creating an unprecedented level of uncertainty about their career prospects.

Multi-year survey results indicate that worry over GenAI's potential to replace jobs is a persistent concern (See appendix for study design.)

> " AI is already replacing jobs. Lower-level entry/junior positions are already being replaced. Analyst 1 and junior software dev roles are in the process of being replaced... It's not a matter of if, it is a matter of when.
>
> Student, University of Arizona
> Eller College of Management

STUDENTS WERE ASKED:

How concerned are you that AI could potentially replace some retail jobs in the future?

Low Level Concern: 17%
Moderate Level Concern: 42%
High Level Concern: 41%
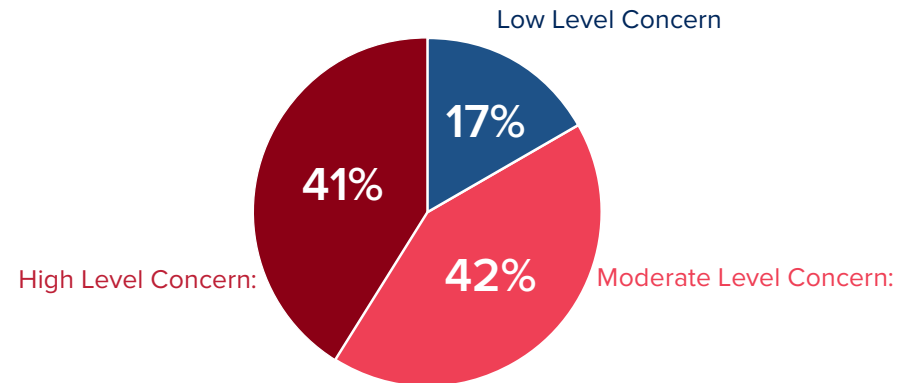
Indeed, these students are right. In a recent New York Times opinion piece Aneesh Raman, chief economic opportunity officer at LinkedIn, noted that "there are growing signs that artificial intelligence poses a real threat to a substantial number of the jobs that normally serve as the first step for each new generation of young workers." An Oxford Economics report echoed that sentiment warning that entry-level roles are already beginning to disappear.[6]

Similar concerns are surfacing inside companies. Employees are increasingly voicing fears that AI adoption will displace their roles. Recent job reports support this view, suggesting that automation may be already undermining entry-level opportunities across industries, including retail. [7, 8]

Beyond the first order loss of entry level job opportunities, there is an even bigger concern. Companies who utilize AI to realize efficiencies among entry level workforce may see short term efficiency gains. However, hiring significantly fewer entry level workers has another important consequence: it disrupts the traditional talent development pipeline. Reduced hiring today means a smaller talent pool to draw from in the coming years. And workers who skip the apprenticeship years on the front lines may develop a sophisticated understanding of AI tools but lack business or customer insight. Experience still remains the gateway to senior-level thinking.

Sound judgment cannot be downloaded or outsourced. It is cultivated through repeated entry-level decisions that build pattern-recognition, contextual awareness, and confidence.

KEY RISK

Efficiencies in low-level work may turn into long-term leadership talent shortages as the number of employees with knowledge and insights gained through hands-on experience decreases over time.

To fully realize the benefits of AI adoption, retail leaders (and the educators and institutions preparing the next generation of talent) must carefully consider their strategic talent development planning. This will allow organizations to ensure the workforce is equipped with both the technical skills and adaptive mindset needed to thrive while also building the structural foundations now for long term future growth.

TAKE ACTION

To turn GenAI potential into real-world progress, retailers must go beyond recognizing opportunity and actively support their workforce in cultivating the mindsets and skillsets needed to act on it.

Create Internal Workforce Development Programs Focused on Data Literacy and AI Proficiency

Both NextGen Workers and current employees need assurance that retail leaders see a role for them in the workforce of the future.

The Microsoft and LinkedIn 2024 Work Trend Index Annual Report showed that only 25% of companies planned to offer training on generative AI. A lack of investment in developing internal talent could be perceived as a lack of commitment for supporting employee's growth as well as a signal that the knowledge and skills of current employees are not valued.

To stay competitive, retailers need to evolve quickly, which will require AI-literacy at every level. In order to maintain historical knowledge of core operating principles while maximizing the benefits of GenAI technology, investment in the developing the skills and knowledge of current employees is paramount.

Partner with Educational Institutions to Create a Pipeline of AI Literate Employees with Foundational Skills

Retailers have an opportunity to help shape the next generation of talent. The foundation isn't tool training. It's mindset development and applied learning.

College students already feel confident using GenAI, but they lack hands-on business experience. As entry-level roles disappear, so do the training grounds where young professionals develop context, judgment, and decision-making skills. Without these, even the best GenAI literacy won't translate into long-term value.

To close this gap, retailers should partner with educational institutions to:

- Ensure retail training programs are aware of and up-to-date on AI tools being used in your business.

- Co-create curriculum that blends GenAI literacy with business fundamentals like consumer behavior, value perception, and product positioning.

- Provide access to real-world challenges and case studies for experimentation.

These partnerships won't just prepare students for the future—they'll strengthen the retail workforce pipeline by cultivating employees who know how to think, not just what to click.
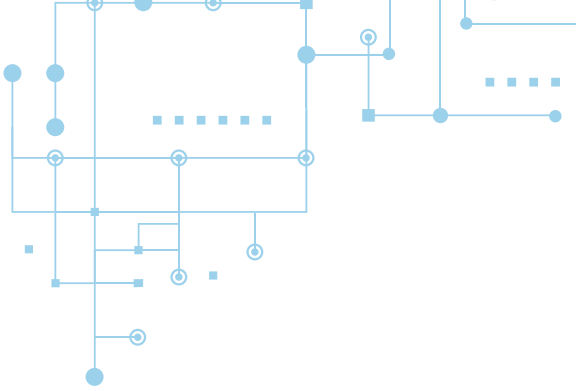
case study

## CANADIAN TIRE INVESTS IN GENAI LITERACY TO EMPOWER EMPLOYEES AND LEADERS

In 2023, Canadian Tire and Microsoft launched a seven-year collaboration to harness Azure AI tools to enhance customer service. A key component of the plan includes AI literacy training programs for board members and employees. In addition, Canadian Tire employees now have access to a custom built chatbot called ChatCTC to summarize documents, generate content, write code and assist with administrative tasks. With more than 4,300 of CTC's corporate employees using ChatCTC, the tool is reported to save users between 30 to 60 minutes a day. [9]

Curiosity and experimentation aren't just attitudes; they're strategic tools.

Step 3: Steering Through Uncertainty & Managing Risk
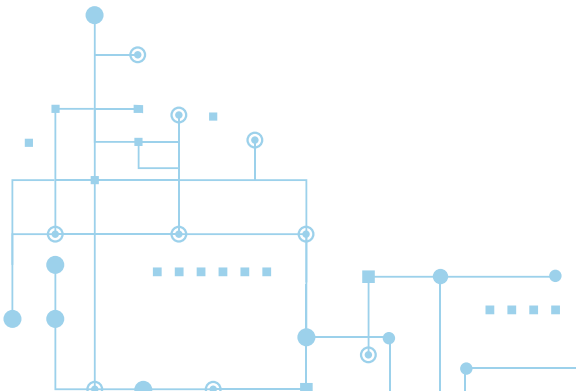
While a coordinated implementation strategy and a GenAI-literate workforce are the fundamental first steps on the GenAI journey, long-term success depends on navigating the risks that lie ahead. The retailers best positioned to lead in this new era will also recognize that bold experimentation must be balanced with careful risk management.

This third step on the GenAI journey is to address a final essential priority: building proactive, organization-wide strategy to navigate the risks associated with GenAI. Some risks have become reasonably well defined in the last few years, and organizations have made great strides in understanding how to handle these potential pitfalls. Other risks are new, and retailers have only begun to define the challenge and understand the scope. Moreover, risks and challenges of AI affect not just retail organizations, but also individuals and even society. No static publication can reasonably delineate all such risks, but in this section the white paper attempts to lay out currently understood challenges. The goal is to invite a clear-eyed, thoughtful conversation, organized around three key areas of risk: workforce impact; environmental, social, and governance (ESG) concerns; and emerging AI-specific risks.

From data privacy and bias to environmental sustainability and workforce displacement, the challenges are complex, but not insurmountable. By anticipating these issues and embedding ethical safeguards into their approach, retailers can innovate with confidence and integrity. This reinforces the long-term value of AI integration while maintaining a clear-eyed appreciation of the risks and challenges associated with this seismic shift.

Insights from the C Suite

Minimizing Exposure with Internal AI Models

Marc Pritchard, Chief Brand Officer, Procter & Gamble

"We made an important decision to use the vast amount of institutional data that we already have and not open up our data to the internet. We'll feed in other data streams as needed, but do so in a way that keeps P&G's data proprietary. Because if we go open, we expose our data."

Safety and Scalability Go Hand in Hand

Desirée Gosby, Vice President, Emerging Technology Walmart Global Tech

"Walmart developed a machine learning platform called Element to enhance its tech capabilities and streamline AI adoption at scale. In-house teams built Element's tech stack from the ground up, guided by Walmart's core principles of leveraging best-of-breed technologies, maximizing speed and scalability, and balancing cost with governance. By building the platform in-house, Walmart protects its data and accelerates implementation. What once took weeks to operationalize can now be deployed in under an hour."

Risks

Workforce Impacts

1. Insufficient Workforce Development: While today's workforce often lacks hands-on training with GenAI tools, the next generation risks losing something just as critical: the chance to build foundational business knowledge through entry-level roles. As AI streamlines tasks traditionally handled by early-career employees, on-the-job learning opportunities shrink, potentially leaving future leaders without the deep understanding needed to guide organizations forward.

2. Workforce Anxiety and Morale Decline: Even when job loss isn't immediate, the fear of being replaced by GenAI can undermine employee confidence and morale. Persistent uncertainty can lead to disengagement, reduced productivity, and resistance to innovation, making it harder for organizations to fully realize the benefits of AI adoption.

3. Unemployment: As GenAI automates more retail tasks, job displacement, especially among low-skilled workers, becomes a growing concern. This shift could have broad socio-economic effects.

Environmental, Social & Governance Concerns

1. Sustainability: Training and operating GenAI models consumes vast amounts of energy and water. This environmental cost presents a major challenge as retailers aim for greener operations.

2. Ethical Concerns: Using GenAI to generate designs or content can blur lines around ownership and originality. Retailers must ensure ethical data sourcing and avoid unintentionally copying independent creators.

3. Data Privacy and Security: Retailers must collect large volumes of customer data to fuel GenAI systems, raising serious concerns about data protection. Mishandling this data can lead to breaches, legal consequences, and loss of consumer trust.

Emerging Risks

1. Loss of Human Touch: Automated systems can't replicate the empathy and creativity of human interaction. Over reliance on GenAI could diminish the personalized experiences customers value most.

2. Autonomous Agents Lacking Oversight: As autonomous agents take over easily automated tasks, the potential for agents to have access to data and the ability to modify existing processes without a company's knowledge increases.

3. Lack of Transparency: It's often difficult to understand how GenAI models make decisions. This lack of clarity can lead to biased outputs, undermine accountability, and erode consumer trust.

4. AI-Generated Disinformation: As GenAI tools become more capable of creating convincing text, images, and videos, the risk of bots spreading false or misleading content across social platforms increases, amplifying disinformation at scale without clear accountability.

Insights from the C Suite
BOTS RUN AMOK

Rogue Agents with the Wrong Data Access

Desirée Gosby, Vice President, Emerging Technology Walmart Global Tech

"What keeps me up at night is really figuring out, how do we make sure that we are operating well in an agentic world? We're moving from services to agents and agents that are potentially autonomous without any human intervention. How do we make sure that we have the right processes, controls security in place for that?

It's not hard to imagine a future scenario where a retailer could have a rogue agent running on somebody's desktop and it could take hours to figure out where it is in the system."

Bot-Boosted Lies with Real-World Consequences

Marc Pritchard, Chief Brand Officer, Procter & Gamble

"My biggest worry—the one that keeps me up at night—is misinformation that can be false or fake. This can easily shape public opinion and cause harm to people, brands, and businesses. We're already in an era where a fake review or inaccurate social post doesn't need to be true to go viral. It just needs bots to like, repost, and flood the algorithm.

What begins as one misleading comment can be amplified in seconds, swaying sentiment and damaging a brand. As brand leaders, we need to be prepared for this and what comes next."

Conclusion: Next Steps on the GenAI Journey

As GenAI reshapes the entire retail industry, success hinges on a strategic, structured approach.

This guide has outlined three critical pillars of AI adoption: first, establishing a coordinated roadmap to integrate GenAI across all aspects of the organization; second, investing in workforce development to ensure employees are equipped to thrive in an AI-driven environment; and third, recognizing and mitigating risks through a proactive, comprehensive risk management strategy. Use this guide to initiate conversations with your leadership team and stakeholders across the organization, asking these key questions:

- *What problems exist that previously could not be solved, but may now have a solution through GenAI?*

- *Where and how are you integrating GenAI?*

- *What is your plan for a GenAI-enabled workforce?*

- *Have you had a pragmatic assessment of the risks of rapid deployment?*

With this foundation in place, leaders must take action to deploy GenAI responsibly and at scale. This means forming a cross-functional GenAI leadership team, assessing organizational readiness, being open to experimentation (and accompanying inevitable failures), launching pilot projects, and building ethical GenAI frameworks that prioritize transparency and accountability.

By embracing GenAI with intention and aligning it with business goals while safeguarding against risks, companies can position themselves for long-term innovation, efficiency, and competitive advantage. GenAI is more than automation; it's a revolution in how we work and think.

Leading this shift will require cultivating talent that thinks holistically.

The leaders and employees who thrive
won't just know how to use AI, they'll know how to apply it
meaningfully across departments, customers, and contexts.

Integration is the new expertise.

APPENDICES

Appendix A

Finance

In the retail industry, Generative AI can streamline financial operations by automating complex reporting tasks including analyzing financial statements, KPIs, and cash flow trends; summarizing earnings reports, filings, and internal documents; and streamlining workflows across departments. By leveraging GenAI, retailers can reduce the risk of financial discrepancies, save costs on manual processing, and gain data-driven insights into important financial decisions that enhance profitability.

Marketing

Generative AI can transform marketing strategies by generating personalized campaigns and creating engaging content tailored to individual customer preferences. In retail, AI can segment customers based on their purchase history and behavior, ensuring that marketing efforts are highly targeted and effective. This personalized approach not only increases customer engagement but also drives higher conversion rates, leading to increased sales and brand loyalty.

Operations

GenAI can enhance retail operations by optimizing supply chain traceability and inventory forecasting. GenAI can predict demand with high accuracy, helping retailers maintain optimal stock levels and avoid overstocking or stockouts, which saves money and reduces waste. Additionally, AI can provide real-time visibility into the supply chain, ensuring that products are sourced and delivered efficiently. This level of operational efficiency translates to significant cost savings and improved customer satisfaction.

Product Management

GenAI can accelerate product management in retail by analyzing market trends, competition, and customer feedback to create new product designs and manage the product lifecycle. Retailers can use AI to generate product concepts that resonate with customers, ensuring a faster time-to-market. Moreover, AI-driven recommendations help retailers keep their product offerings relevant and appealing, ultimately boosting sales and customer loyalty.

Customer Service

In the retail sector, GenAI-powered chatbots and virtual assistants can provide 24/7 customer support, handling inquiries and resolving issues quickly. This improves the overall customer experience by offering immediate assistance and freeing up human agents to focus on more complex customer needs. Enhanced customer service leads to higher satisfaction rates and fosters long-term customer relationships.

Customer Insights

GenAI can help retailers gain deep insights into customer behavior and preferences by analyzing vast amounts of data. These insights enable retailers to tailor their offerings and marketing strategies to meet customer demands more effectively. By understanding customer trends, retailers can make informed decisions that enhance customer satisfaction and drive business growth.

Technology

GenAI can support retail IT operations by monitoring systems for potential issues, managing data efficiently, and aiding in digital transformation efforts. It can significantly accelerate the coding, reviewing, maintaining, and fixing of errors. Additionally, it can act as a real-time security guard to detect data breaches by malicious applications and spam. This ensures that the digital infrastructure remains robust and reliable, which is crucial for maintaining smooth operations and delivering a seamless customer experience. Efficient IT management through GenAI also reduces downtime and operational costs.

Human Resources

GenAI-powered tools are transforming human resources in retail by enhancing workforce inclusion, streamlining hiring, and improving employee communication. GenAI can support tailored onboarding training and create personalized communication for candidates throughout the recruitment process. Inclusive hiring platforms can help reduce bias and identify qualified candidates more effectively. Additionally, AI-enhanced workforce inclusion training fosters a more equitable workplace, ensuring employees are equipped to thrive in diverse, dynamic environments.

Appendix B: Use Cases

Finance

Vendor Negotiations: Transforming retail vendor negotiations, Walmart utilizes AI-powered chatbots, driven by GenAI, to enhance efficiency and cost-effectiveness by analyzing historical trends, competitor pricing, and material costs for fair terms.

Fraud Detection with GenAI: Retailers are using GenAI to safeguard against unauthorized purchases, deceptive returns, and the infiltration of counterfeit products or unauthorized sellers in online marketplaces.

Marketing

Sentiment Analysis: Retailers are using GenAI to analyze customer sentiment, gain insights into preferences, and generate personalized recommendations and content for a more targeted shopping experience.

GenAI-driven eCommerce Experience: A digital store was designed, created, and managed entirely by Generative AI. Implemented by LumiWink, the initiative successfully produced and sold hundreds of AI-generated clothing items, including 600 shirts and 100 skirts, in just two months.

Automated Content Generation: Retailers can use AI to create descriptions for their products, promotional content for social media, blog posts, and other content that improves SEO and drives customer engagement.

Virtual Inclusive Events: Companies are hosting virtual events supported by GenAI, incorporating features such as live transcription and sign language interpretation to ensure accessibility. GenAI is also being used to fully host live-streamed product reviews.

Diverse Representation in Marketing: GenAI tools are being applied to review and enhance marketing content, ensuring it reflects diverse and inclusive representation that resonates with a broad audience.

Inclusive Digital Content: Retailers are using GenAI to develop accessible digital content, websites, and apps, providing a seamless experience for customers with a range of abilities.

Accessible AI-Driven Loyalty Programs: GenAI is being used to develop inclusive loyalty programs that adapt rewards, communication channels, and features to meet diverse customer preferences and needs.

Cart Abandonment Emails: Retailers are using AI-powered cart recovery tools that recommend visually similar products and styling suggestions tailored to each shopper's style profile, making cart recovery more compelling and effective.

Operations

Report Generation: Retailers are using GenAI to generate summaries of operational data, including daily, weekly, or monthly reports on stock levels and sales trends.

Adaptive Workspace Design: Companies are implementing GenAI to design office layouts that accommodate a wide range of employee needs, promoting accessibility and comfort.

AI-Enhanced Communication Accessibility: Retailers are deploying GenAI to improve internal communication through real-time translation and text-to-speech tools.

Assisting with Inventory and Supply Chain Management: Retailers are applying GenAI to simulate market conditions, stress-test supply chains, and generate synthetic data for better training and decision-making.

Category Recommendation: GenAI tools are being used to generate key metrics and insights that assist category managers in making strategic decisions.

Foot Traffic Patterns: Retailers are using GenAI to analyze video footage and summarize customer movement patterns in stores, informing layout and merchandising strategies.

Product Management

Product Catalog Management: Retailers are automating the creation of product descriptions, tags, and titles by analyzing images and product specs using GenAI.

Product Development: GenAI is transforming product development by helping companies analyze trends, understand consumer sentiment, and quickly generate new concepts. This accelerates ideation, improves testing, and speeds time to market.

AI Powered Product Placement: Transform store layouts and displays with generative AI, using insights from customer data to boost appeal, efficiency, and sales. This involves strategic placement based on heat maps, personalized displays, and innovative technologies like AR and proximity marketing for an enriched customer experience.

AI-Enhanced Product Customization: Brands are deploying GenAI platforms that enable customers to personalize products, such as cosmetics or clothing, based on individual preferences, including accessibility considerations.

Customer Service

Store Concierge: Retailers are using GenAI-powered chatbots to assist store associates by recommending next-best actions, summarizing customer feedback, and providing access to standard operating procedures.

AI-Powered Accessibility App: Retailers are offering GenAI-driven apps that provide in-store accessibility information for customers with disabilities.

Inclusive Shopping Assistant: GenAI shopping assistants are being implemented to provide personalized product suggestions based on individual needs and preferences.

GenAI in Virtual Try Ons: Retailers are using GenAI to power in-store virtual try-on tools, allowing customers to visualize products before purchasing.

AI-Enhanced Customer Support: Retailers are integrating GenAI chatbots and virtual assistants capable of addressing diverse customer needs, including those with disabilities.

Personalized Accessibility Recommendations: GenAI is being used to suggest accessible products and services tailored to individual customer profiles.

AI-Powered In-store Navigation: Retailers are employing GenAI to analyze layouts and guide customers through stores based on real-time data and personal preferences.

Best-Fit Apparel Technology: Companies are using GenAI image analysis tools to help customers choose clothing that fits their body shape and preferences, reducing returns and improving satisfaction.

Customer Order Substitution: GenAI is being used to recommend the best alternative products when desired items are out of stock, helping to retain sales and meet expectations.

Technology

Data Management: IT teams are leveraging GenAI to automate data classification and organization, improving accuracy, compliance, and access to insights.

Systems Monitoring: Retailers are using GenAI to monitor system performance and detect anomalies in real time, helping prevent downtime and improve resource allocation.

Security Monitoring: GenAI is being used to detect cybersecurity threats, analyze unusual access patterns, and mitigate vulnerabilities before they become breaches.

Enhancing Infrastructure Reliability and Performance: Companies are applying GenAI to predict hardware failures, automate maintenance, and optimize IT performance and uptime.

Human Resources

AI-Enhanced Workforce Inclusion Training: Organizations are using GenAI to develop inclusion and diversity training modules that educate employees on accommodation and equitable practices.

Inclusive Hiring Platform: HR departments are adopting AI-powered platforms to promote inclusive hiring by matching candidates to suitable roles and suggesting environment adaptations.

Real-time Accessibility Advisor: Companies are deploying GenAI tools that offer real-time accessibility support for internal events, meetings, and workplace navigation.

Employee Well-being Monitor: HR teams are using GenAI to track employee well-being and detect early signs of stress or burnout, triggering proactive support.

Virtual Reality Inclusion Training: Organizations are incorporating GenAI into VR-based training programs that simulate inclusive workplace scenarios.

Personalized Work Adjustments: GenAI tools are being used to suggest tailored work accommodations based on individual employee needs, promoting a more inclusive and productive environment.

Appendix C

Study Design

We conducted a multi-phase study of students at the University of Arizona about their knowledge of and comfort with AI technology.

Part One was a multi-year survey designed to explore student attitudes towards GenAI. Wave 1 was administered between February and April 2024 to N=398 students of Eller College at University of Arizona. Wave 2 used similar questions and was administered in March and April 2025 to N=474 students of Eller College at University of Arizona.

Part Two consisted of four qualitative structured in-depth interviews conducted with industry leaders between April and August 2025.

The Lundgren Retail Collaborative analyzed the data using qualitative and quantitative methodologies. We identified the three insights and three implementation recommendations summarized in the white paper.

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