Infosys topaz

AI IN RETAIL – OUTLOOK AND TRENDS

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ABSTRACT

Post-pandemic, the retail industry has weathered significant disruptive forces and re-oriented itself for aggressive growth. With new advances in AI, retailers are on the cusp of another wave of change. This paper examines the current business and technological landscape for retailers and identifies the key trends of AI in retail in 2024. It also outlines an implementation approach that will help retailers get the most from their AI transformation journeys.

Introduction

Major retailers today are at the forefront of adopting new technologies, driven largely by customer demand for delightful shopping experiences. During the COVID-19 pandemic, retailers had to overcome the challenges of disrupted supply chains and delivery lines as well as escalating demand for products that enabled connectivity and safety. Further, customers expected mobile-based shopping that felt like in-store experiences with seamless and secure checkouts. Adapting to these challenges and demands required strong strategies and robust technology solutions to create new capabilities within weeks, not months.

Since then, the retail industry has become increasingly resilient by adapting to market disruption. As advances in AI make inroads into all industries, retailers too are assessing how mature AI technologies can help them further optimize operations, reach new markets, and build customer loyalty.

Key Business and Technology Challenges in Retail

Retailers operate in one of the most dynamic industries, where customer satisfaction can make or break a brand. It becomes increasingly challenging to peg what satisfies customers as their preferences and demands are ever-changing. Many expect a seamless buying experience across channels with intuitive services, personalized products, and engaging interactions.

Apart from customer engagement, retailers must contend with a slew of other concerns. The retail market constantly struggles with price competition. Internally, they need to protect against risks like supply-chain disruption and data breaches. Operationally, they struggle with high operating costs even as they endeavor to optimize inventory and adopt the best technologies to improve efficiency. On yet another front, they must stay ahead of ethical and regulatory risks surrounding legal issues, compliance with data protection laws, maintaining public trust, and more.

When it comes to their technology landscape, retailers need to invest in the latest, cutting-edge technologies to make shopping experiences delightful for customers. For instance, customers demand a smooth omnichannel experience, which calls for seamless integration between numerous e-commerce platforms, mobile apps, and brick-and-mortar stores. Moreover, retailers need capabilities for accurate customer segmentation and quick predictive analytics in order to tailor shopping experiences to individual tastes.

As data becomes the foundation for business decisions, retailers need to implement robust data management solutions as well as infrastructure that can scale as data grows. These are critical to provide insights and democratize data across different retail departments. Finally, continuous monitoring is needed for retailers to stay ahead of regulatory risks, safeguard from cybersecurity threats, and protect financial transactions.

Technology in Retail Today

At present, retailers have varying levels of digital maturity. Many already possess capabilities such as data-driven decision-making with predictive analytics, machine learning, and AI solutions. These companies leverage data and AI to get insights into customer behavior, identify patterns, and make better decisions. Machine learning technologies typically include image recognition, recommendation systems, predictive modeling, and natural language processing. Currently, many of these technologies are being implemented in areas such as sales and demand forecasting, out-of-stock predictions, customer segmentation, customer loyalty, and product personalization, to name a few.

However, the landscape remains riddled with challenges that affect the efficiency of existing solutions. Data quality is the most pressing issue. Incomplete datasets, inconsistent data formats, and siloed data systems create poor-quality data that, in turn, lead to inaccurate decisions. Another challenge is data governance. As data privacy regulations grow increasingly stringent, retailers must ensure their data management processes adhere to updated security norms if they are to continue deriving value from their analytics and AI investments.

The use of AI itself comes with several hurdles. On the one hand, the lack of well-defined training data could skew the results from ML algorithms, leading to unfair or discriminatory outcomes. Ensuring fairness is complex and requires attention to data selection, model evaluation, and algorithm design. On the other hand, some AI algorithms such as deep learning and cognitive neural networks are hard to understand. When users do not have transparency into how outcomes are generated, they are wary of the recommendations provided, which in turn hinders AI adoption.

Technology Advances to Look Forward to in 2024

Despite having a lot of challenges to overcome, the retail industry is also the perfect space to test and implement cutting-edge technologies – either established ones that are growing more mature or new ones making inroads into the technology space.

Here are some key trends to look forward to:

Retailers will opt for unified commerce platforms to run their operations

Generative AI can significantly expedite the product prototyping phase by analyzing vast amounts of historical and current data to generate product designs for prototypes. This leads to fewer iterations, ultimately resulting in a faster journey to the final design.

Increasing maturity will encourage retailers to go big on AI

As AI/ML and its subset technologies mature, retailers are growing eager to unlock further potential from their existing investments. This includes optimizing product prices for higher sales and better margins as well as forecasting demand accurately by taking into consideration more variables. In 2024 and beyond, retailers will also be able to curate targeted promotions to reach the right customers, increase conversion, and find new ways to make customer experience more delightful.

IoT to give retailers the right data for continuous improvement

IoT technologies such as RFID tags, sensors, beacons, and even wearables are transforming retail operations across shopping, product delivery, and customer loyalty. The many use cases of IoT in retail will increasingly come into play in 2024 – smart shelves, automated checkout, timely order updates, hyper-personalized alerts through beacons, product offers and discounts based on in-store movements, etc. IoT sensors also give retailers deep visibility into supply chain operations, enabling them to predict disruptions and even analyze vendors and optimize delivery routes.

Retailers will implement new technologies for immersive shopping experiences and efficient operations

In 2024, the retail industry will continue to invest in mature and new technologies. Robotic Process Automation (RPA) will continue to eliminate repetitive tasks and enable leaner, faster, and more accurate processes. Blockchain will bring transparency to product provenance and goods movements, enabling retailers to prevent counterfeiting, delivery delays, and other concerns. Augmented reality/virtual reality (AR/VR) will transform shopping journeys entirely by enabling immersive experiences – where customers can try before they buy from the convenience of their homes.

Retailers will leverage AI-led solutions for talent enablement

The more AI-driven retailers become, the greater their need for AI-savvy talent. Even as AI makes some roles redundant, it will direct talent to newer roles, making upskilling and reskilling a priority. Thus, retailers will lean on AI solutions to quickly upskill and train talent, build a pool with AI/ML expertise that can use AI systems and solutions, interpret the results of ML algorithms, and make sense of insights – all of which will be vital to sustain business growth in the future.

A Solution Framework for AI in Retail

To create a landscape conducive to such transformation, retailers need a strategic and systematic approach that will:

Set the right goals

This includes identifying the business objectives and priorities, choosing the most relevant use cases, and articulating the expected value to be derived. This will ensure clear alignment between business and technology goals.

Assess the scope of transformation

This involves conducting a technology assessment to identify gaps, inefficiencies, and improvement areas. Then, a technology roadmap must be developed and shared with all the stakeholders to cement their buy-in. This will foster collaboration, communication, and shared ownership of the new technology and its associated changes.

Execute and measure

This includes developing a prototype and running a pilot to test success and measure value. This helps reduce risk and validates the feasibility before large-scale implementation. After a successful pilot, the goal should be to implement and scale the solution enterprise-wide. Further, it is crucial to monitor KPIs and track outcomes to determine whether the technologies are delivering the expected value.

Check compliance and security

Any chosen solution must adhere to all relevant regulations and data norms. This improves business processes and enhances cybersecurity coverage while building customer and stakeholder trust that all data is secure.

Infosys Topaz is an applied AI framework that can be used to build an AI-first core, enabling companies across industries to accelerate growth, build secure connected ecosystems, and unlock efficiencies at scale.

Benefits of an AI-First Framework

A future-ready platform such as Infosys Topaz can help retailers adopt AI solutions with ease and enjoy a host of benefits. Some of the benefits are:

Enhanced customer experience
through personalized, immersive shopping journeys, timely maintenance, and intelligent predictions

Technological transformation
aligned with business objectives, thereby ensuring strong adoption of the platform and AI-first processes and systems

Improved operational efficiency
through smarter and faster business processes and accurate business decisions, driven by the power of data

Higher revenue growth
thanks to optimized supply chain processes, faster sales cycles, and higher customer conversion

Sharpened competitive advantage
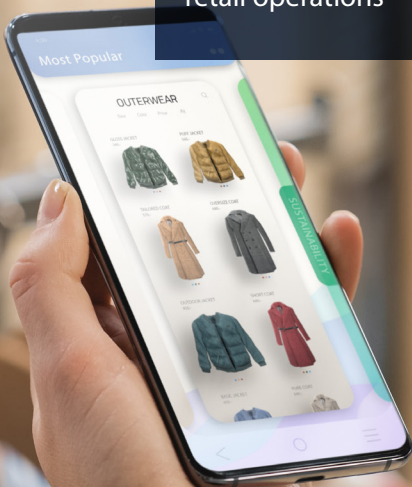of retailers, giving them unique market differentiation through brand presence

Conclusion

In 2024, retailers continue to face a host of business and technological challenges as they try to meet customer expectations for delightful experiences, individualized offers, and personalized products. Data continues to be the primary driver of operations, yet many retail organizations struggle to unlock the power of this resource due to fragmented systems. Looking ahead, retailers will invest in unified commerce platforms and technologies such as advanced analytics, AI, IoT, blockchain, AR/VR, etc. An AI-first framework coupled with a systematic implementation approach will enable retailers to address challenges around data quality, data governance, integration, cybersecurity, and hyper-personalization. This will enable benefits such as improved compliance and customer trust, higher customer conversion and loyalty, and better operational efficiencies for accelerated business growth

Key Retail Challenges

Dynamic customer preferences	Customer demand for omnichannel experiences	Need for better customer engagement and hyper-personalization	Low quality data for analytics and AI
Ethical and regulatory risks due to poor data management	Cybersecurity threats	Poor AI adoption due to low transparency and interpretability of results	

2024 Retail Trends

Opt for unified commerce platforms to run retail operations

Continue investing in mature AI technologies

Leverage IoT for better data and continuous improvements

Focus on immersive shopping experiences

Use AI-led solutions for talent enablement

Infosys Topaz is an AI-first set of services, solutions, and platforms using generative AI technologies. It amplifies the potential of humans, enterprises, and communities to create value. With 12,000+ AI assets, 150+ pre-trained AI models, 10+ AI platforms steered by AI-first specialists and data strategists, and a 'responsible by design' approach, Infosys Topaz helps enterprises accelerate growth, unlock efficiencies at scale, and connected ecosystems.
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