Infographic: Artificial Intelligence Use-Case Prism for Retail

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Artificial intelligence (AI) is changing the trajectory of the retail industry. This research evaluates 23 potential use cases based on feasibility and business value to help CIOs target resources on the most beneficial use cases for their organization.

Additional Perspectives

■ Summary Translation: Infographic: Artificial Intelligence Use Case Prism for Retail (26 March 2021)

More on This Topic
This is part of an in-depth collection of research. See the collection:

■ Applying AI in Industries

Figure 1: AI Use-Case Prism for Retail

Use-Case Glossary

The above infographic highlights the following use cases for the retail commerce industry:

■ **Associate Hiring and Training** — Associate hiring and training uses augmented, virtual and mixed reality to enhance associate recruiting and training by creating interactive experiences for individual associates.

■ **Associate Scheduling** — Leverages artificial intelligence (AI) to create a collaborative and predictive scheduling process to support retail store operations and needs of associates.

- **Assortment Management and Optimization** — Leveraging AI to determine items to be stocked, substituted and deleted at touchpoint to maximize sales, margin, inventory and customer satisfaction goals. Data sources can include multichannel transactions, CRM, loyalty, competitors, human intelligence, news, social media and data service providers.

- **Autonomous Delivery** — Autonomous deliveries offer a personless interface for consumers, while reducing costs and increasing flexibility. Drone and robot companies have used the pandemic as an opportunity to gain operational licenses, providing an opportunity for technology and service providers to accelerate adoption.

- **Contextualized, Real-Time Pricing** — Contextualized real-time pricing for retailers refers to the ability to manage and adjust item pricing, personalized for customers in real time, across all channels, leveraging the customer's mobile device. Item pricing can be influenced by a wide variety of considerations including competitive pricing, promotional cadence, and customer loyalty.

- **Conversational Commerce** — Conversational commerce is utilizing chat, messaging and other natural language interfaces to interact with people, brands or services and bots, which may include facilitating a transaction. A key aspect is the enablement of the user to converse in their platform of choice — whether that is messaging platform, SMS, virtual personal assistant (VPA), social or voice.

- **Demand Forecasting** — Leveraging AI to augment predictive demand forecasting for sales and inventory requirements.

- **Distributed Order Management** — Retail distributed order management (DOM) applications orchestrate and optimize the customer order fulfillment process to deliver target service levels in terms of fill rate and accuracy of orders as well as on-time, cost-effective delivery.

- **Fraud/Threat Detection** — Leverages AI to identify anomalies and threats in anticipation of and to prevent loss of revenue, security or assets.

- **Freshness Management and Optimization** — Freshness management uses a wide array of signals and technologies to ensure that fresh products are maximized to reduce waste.

- **Go-Style Smart Check-Out** — Smart check-out converges various digital technologies to recognize selected products, sum up the total basket cost, apply loyalty and promotional benefits, decrement inventory, identify the customer and receive payment, thus eliminating the need to go through the traditional physical check-out lane.

- **In-Store Environmental Management** — In-store environmental management uses a wide array of signals and IoT for facility management, to protect the inventory investment, eliminate wasted electricity, and direct store associates to the pressing issues before problems develop.

- **In-Store On-Shelf Availability** — In-store on-shelf availability means the store leverages an array of technologies such as robotics, image recognition, computer vision, IoT and AI. These must work together to analyze what is happening, identify out of stocks, and recommend prioritized actions in real time.

- **Intelligent Virtual Store Design** — Intelligent virtual store design (IVSD) leverages new digital technologies to accomplish space-planning, including system-generated recommendations and virtual reality, to enhance the effectiveness of store-specific spatial assignment of fixtures, services, robotics and customer pathways, categories and merchandise in a physical store.

- **Leveraging Smart Robots to Augment Humans** — Smart robots learn in short-term intervals from human-supervised training and demonstrations or by their supervised experiences on the job. They sense environmental conditions and recognize and solve problems. Some can interact with humans using voice language, while others have specialized mobile functions used in warehouses and for delivery.

- **Mixed Reality Experiences** — Mixed reality (MR) is an overarching technology, which includes an underlying group of technologies encompassing the spectrum of immersive displays and interactive systems that spans from the digitization of real environments, to augmented reality (AR) and virtual reality (VR).

- **Monitoring Store Activity With IoT** — Real-time store Internet of Things (IoT) platforms monitor, analyze and display store activity through dashboards using a real-time data infrastructure, via signals and alerts from real-time data sources that are available within the retail store.

- **Personalization** — The personalization process creates relevant, individualized interactions between a company and its audiences to enhance the recipient's experience. It uses insight based on unique recipient behavioral data, as well as behavioral data of similar individuals, to deliver an experience to meet specific needs and preferences

- **Price, Promotion and Markdown Optimization** — Technology that uses predictive analytics and optimization capabilities to plan and manage every aspect of pricing (that is, initial, regular, promotion and markdown). This technology can provide improved pricing and promotion planning and management throughout the entire life cycle of the merchandise.

- **Product Selection, Development and Design** — Application of AI to selecting and developing products for sale that align with customer needs. Accomplished by a variety of approaches including voice and natural language processing, digital prototyping, attributing and testing for products, life cycle development.

- **Product Sizing and Fit Assistance** — Leveraging AI to facilitate the customer's decision making capability to improve accurate selection of size to enable satisfaction and reduce return rates.

- **Social Media Monitoring/Sentiment Analysis** — AI is used to monitor social media, categorize inputs, spot trends and work together with other information sources to inform future decisions.

- **Subscription Services** — Leverages AI to develop in depth behavior and style profiles for individual consumers. These are used to track tastes, purchase behavior, usage patterns and to develop personalized order cycles and selections' for individual consumers.

About This Research

Please note: These use cases have been selected and positioned based on an assessment by Gartner analysts and customer feedback. Their applicability may vary across organizations and industries. For detailed customization, use Gartner's prism toolkit (see Toolkit: How to Rank and Prioritize Your Use Cases With a Gartner Prism).

Recommended by the Authors

Preparing for the AI-Based Retail Nervous System

Cool Vendors in AI for Retail

Uncovering Artificial Intelligence Business Opportunities in Over 20 Industries and Business Domains

Toolkit: How to Rank and Prioritize Your Use Cases With a Gartner Prism

The New Retail Scenarios: Digital Acceleration and Consumer Behavior Change the Mission

Hype Cycle for Retail Technologies, 2020

Predicts 2021: Retail — Redefining the Physical to Capitalize on Digital