

AI in Retail Market Forecasts to 2034 – Global Analysis By Component (Solutions, and Services), Technology, Deployment Mode, Sales Channel, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global AI in Retail Market is accounted for \$16.5 billion in 2026 and is expected to reach \$105.9 billion by 2034 growing at a CAGR of 26.1% during the forecast period. AI in retail involves the use of advanced technologies such as machine learning, data analytics, and computer vision to enhance operations and customer experiences. It enables retailers to analyze large volumes of data for demand forecasting, personalized recommendations, inventory management, and dynamic pricing. By automating processes and generating real-time insights, it improves decision-making, boosts efficiency, and supports seamless omnichannel interactions, helping businesses better understand customer behavior and optimize overall retail performance.

Market Dynamics:

Driver:

Rapid expansion of e-commerce and omnichannel retailing

The exponential growth of online shopping and the integration of physical and digital sales channels are forcing retailers to adopt AI for real-time inventory synchronization and personalized customer engagement. AI-driven recommendation engines analyze browsing history and purchase patterns to boost conversion rates, while chatbots handle high-volume inquiries instantly. Additionally, dynamic pricing algorithms adjust product costs based on demand fluctuations and competitor actions. As consumers

expect seamless experiences across mobile apps, websites, and brick-and-mortar stores, retailers increasingly rely on AI to unify data streams, forecast stock needs, and automate fulfillment processes. This operational necessity is a primary driver accelerating AI adoption across the retail ecosystem.

Restraint:

High implementation and data integration costs

Deploying AI solutions in retail requires substantial investment in cloud infrastructure, data warehousing, and skilled personnel such as data scientists and ML engineers. Many small and mid-sized retailers struggle to afford these upfront costs, especially when integrating AI with legacy point-of-sale and enterprise resource planning systems. Data silos across warehouses, online platforms, and physical stores further complicate implementation, as cleaning and standardizing diverse datasets is time-consuming and expensive. Additionally, ongoing expenses for model retraining, software updates, and cybersecurity measures add financial pressure. Without clear short-term ROI, many traditional retailers delay AI adoption, restraining market growth despite long-term efficiency benefits.

Opportunity:

Growth of cashierless stores and smart checkout systems

The emergence of autonomous retail formats, including cashierless stores and just-walk-out technology, presents a significant growth opportunity for AI in retail. Computer vision sensors, shelf weight detectors, and deep learning algorithms track customer selections and automatically charge digital wallets upon exit. This eliminates checkout queues and reduces labor costs. Major retailers and startups are testing these systems in convenience stores and campus shops. Furthermore, smart checkout kiosks equipped with AI-powered object recognition accelerate payment processing in quick-service restaurants and supermarkets. As consumer preference shifts toward frictionless shopping experiences, investment in vision-based AI and edge computing will expand, creating new revenue streams for technology providers.

Threat:

Data privacy concerns and regulatory compliance risks

AI systems in retail rely heavily on collecting and analyzing customer behavioral data, purchase histories, and biometric information (e.g., facial expressions in cashierless stores). This raises serious privacy concerns, especially under regulations like GDPR in Europe and CCPA in California. Retailers face potential lawsuits and heavy fines if AI models inadvertently expose sensitive data or use it without transparent consent. Additionally, cyberattacks targeting AI databases can lead to large-scale identity theft. Consumer backlash over intrusive tracking—such as in-store facial recognition—can damage brand reputation. These compliance and trust challenges threaten AI deployment, forcing retailers to invest heavily in privacy-preserving technologies like federated learning and anonymization tools.

Covid-19 Impact:

The COVID-19 pandemic drastically accelerated AI adoption in retail as lockdowns shuttered physical stores and shifted consumer behavior toward contactless shopping. Retailers rapidly deployed AI-powered chatbots to handle surge in online customer queries, while demand forecasting models helped manage disrupted supply chains and panic buying. Cashierless checkout and curbside pickup systems gained traction to minimize human contact. However, budget constraints delayed some AI projects for smaller retailers. As economies reopened, hybrid shopping models remained, with AI driving personalized promotions and inventory visibility. The pandemic permanently changed retail expectations, making AI investment a strategic priority rather than an experimental luxury.

The solutions segment is expected to be the largest during the forecast period

The solutions segment is expected to account for the largest market share during the forecast period. This includes customer service platforms, inventory management tools, pricing optimization engines, fraud detection systems, and recommendation algorithms. Retailers prioritize purchasing ready-to-deploy AI solutions to address immediate operational challenges such as overstocking, cart abandonment, and returns processing. Solutions offer measurable ROI through sales lift and cost reduction. Additionally, cloud-based solution subscriptions lower entry barriers for mid-sized retailers.

The machine learning & deep learning segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the machine learning & deep learning segment is predicted to

witness the highest growth rate. These technologies power demand forecasting, personalized recommendations, dynamic pricing, and fraud detection by identifying complex patterns in transaction and inventory data. Deep learning models, especially recurrent neural networks, excel at time-series analysis for supply chain optimization. Advances in automated machine learning (AutoML) allow non-experts to deploy models.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, driven by the presence of major AI technology vendors such as IBM, Microsoft, Google, and Amazon Web Services. The region has a mature retail landscape with early adoption of cashierless stores, AI-powered recommendation engines, and automated warehouses. Strong venture capital funding for retail AI startups in the US and Canada accelerates innovation. Additionally, large retailers like Walmart, Target, and Costco continuously invest in AI for supply chain resilience and personalized marketing, solidifying North America's leadership.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, fueled by rapid digitalization of retail in China, India, and Southeast Asia. Massive populations, rising smartphone penetration, and government support for AI development drive adoption. Alibaba and JD.com lead in AI-powered logistics and virtual try-on technologies. Additionally, cashierless store formats are expanding rapidly in Japan and South Korea. Growing middle-class disposable income increases demand for personalized shopping.

Key players in the market

Some of the key players in AI in Retail Market include Amazon Web Services, Microsoft Corporation, Google LLC, IBM Corporation, Oracle Corporation, SAP SE, Salesforce, Inc., NVIDIA Corporation, Intel Corporation, Accenture plc, Capgemini SE, Infosys Limited, Tata Consultancy Services, Wipro Limited, and SymphonyAI.

Key Developments:

In March 2026, Oracle announced the latest updates to Oracle AI Agent Studio for Fusion Applications, a complete development platform for building, connecting, and running AI automation and agentic applications. The latest updates to Oracle AI Agent

Studio include a new agentic applications builder as well as new capabilities that support workflow orchestration, content intelligence, contextual memory, and ROI measurement.

In April 2026, IBM announced a strategic collaboration with Arm to develop new dual?architecture hardware that helps enterprises run future AI and data intensive workloads with greater flexibility, reliability, and security. IBM's leadership in system design, from silicon to software and security, has helped enterprises adopt emerging technologies with the scale and reliability required for mission?critical workloads.

Components Covered:

Solutions

Services

Technologies Covered:

Machine Learning & Deep Learning

Natural Language Processing (NLP)

Chatbots & Virtual Assistants

Image & Video Analytics

Swarm Intelligence

Deployment Modes Covered:

Cloud-based

On-Premise

Sales Channels Covered:

Omnichannel Retail

Brick-and-Mortar Stores

Pure-play Online Retailers

Applications Covered:

Customer Relationship Management (CRM)

Supply Chain & Logistics

Inventory Management & Demand Forecasting

Product Optimization & Merchandising

In-store Navigation & Smart Shelves

Payment, Pricing & Checkout Analytics

Fraud Detection & Loss Prevention

Virtual Assistants & Chatbots

End Users Covered:

Supermarkets & Hypermarkets

Specialty Stores

Convenience Stores

Department Stores

E-commerce Retailers

Regions Covered:**North America**

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL AI IN RETAIL MARKET, BY COMPONENT

- 5.1 Solutions
 - 5.1.1 Customer Service Solutions
 - 5.1.2 Inventory Management Solutions
 - 5.1.3 Pricing Optimization Solutions
 - 5.1.4 Fraud Detection Solutions
 - 5.1.5 Recommendation Engines
- 5.2 Services
 - 5.2.1 Professional Services
 - 5.2.2 Managed Services

6 GLOBAL AI IN RETAIL MARKET, BY TECHNOLOGY

- 6.1 Machine Learning & Deep Learning
- 6.2 Natural Language Processing (NLP)
- 6.3 Chatbots & Virtual Assistants
- 6.4 Image & Video Analytics
- 6.5 Swarm Intelligence

7 GLOBAL AI IN RETAIL MARKET, BY DEPLOYMENT MODE

- 7.1 Cloud-based
- 7.2 On-Premise

8 GLOBAL AI IN RETAIL MARKET, BY SALES CHANNEL

- 8.1 Omnichannel Retail
- 8.2 Brick-and-Mortar Stores
- 8.3 Pure-play Online Retailers

9 GLOBAL AI IN RETAIL MARKET, BY APPLICATION

- 9.1 Customer Relationship Management (CRM)
- 9.2 Supply Chain & Logistics

- 9.3 Inventory Management & Demand Forecasting
- 9.4 Product Optimization & Merchandising
- 9.5 In-store Navigation & Smart Shelves
- 9.6 Payment, Pricing & Checkout Analytics
- 9.7 Fraud Detection & Loss Prevention
- 9.8 Virtual Assistants & Chatbots

10 GLOBAL AI IN RETAIL MARKET, BY END USER

- 10.1 Supermarkets & Hypermarkets
- 10.2 Specialty Stores
- 10.3 Convenience Stores
- 10.4 Department Stores
- 10.5 E-commerce Retailers

11 GLOBAL AI IN RETAIL MARKET, BY GEOGRAPHY

- 11.1 North America
 - 11.1.1 United States
 - 11.1.2 Canada
 - 11.1.3 Mexico
- 11.2 Europe
 - 11.2.1 United Kingdom
 - 11.2.2 Germany
 - 11.2.3 France
 - 11.2.4 Italy
 - 11.2.5 Spain
 - 11.2.6 Netherlands
 - 11.2.7 Belgium
 - 11.2.8 Sweden
 - 11.2.9 Switzerland
 - 11.2.10 Poland
 - 11.2.11 Rest of Europe
- 11.3 Asia Pacific
 - 11.3.1 China
 - 11.3.2 Japan
 - 11.3.3 India
 - 11.3.4 South Korea
 - 11.3.5 Australia

- 11.3.6 Indonesia
- 11.3.7 Thailand
- 11.3.8 Malaysia
- 11.3.9 Singapore
- 11.3.10 Vietnam
- 11.3.11 Rest of Asia Pacific
- 11.4 South America
 - 11.4.1 Brazil
 - 11.4.2 Argentina
 - 11.4.3 Colombia
 - 11.4.4 Chile
 - 11.4.5 Peru
 - 11.4.6 Rest of South America
- 11.5 Rest of the World (RoW)
 - 11.5.1 Middle East
 - 11.5.1.1 Saudi Arabia
 - 11.5.1.2 United Arab Emirates
 - 11.5.1.3 Qatar
 - 11.5.1.4 Israel
 - 11.5.1.5 Rest of Middle East
 - 11.5.2 Africa
 - 11.5.2.1 South Africa
 - 11.5.2.2 Egypt
 - 11.5.2.3 Morocco
 - 11.5.2.4 Rest of Africa

12 STRATEGIC MARKET INTELLIGENCE

- 12.1 Industry Value Network and Supply Chain Assessment
- 12.2 White-Space and Opportunity Mapping
- 12.3 Product Evolution and Market Life Cycle Analysis
- 12.4 Channel, Distributor, and Go-to-Market Assessment

13 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

- 13.1 Mergers and Acquisitions
- 13.2 Partnerships, Alliances, and Joint Ventures
- 13.3 New Product Launches and Certifications
- 13.4 Capacity Expansion and Investments

13.5 Other Strategic Initiatives

14 COMPANY PROFILES

14.1 Amazon Web Services

14.2 Microsoft Corporation

14.3 Google LLC

14.4 IBM Corporation

14.5 Oracle Corporation

14.6 SAP SE

14.7 Salesforce, Inc.

14.8 NVIDIA Corporation

14.9 Intel Corporation

14.10 Accenture plc

14.11 Capgemini SE

14.12 Infosys Limited

14.13 Tata Consultancy Services

14.14 Wipro Limited

14.15 SymphonyAI

List Of Tables

LIST OF TABLES

- Table 1 Global AI in Retail Market Outlook, By Region (2023-2034) (\$MN)
- Table 2 Global AI in Retail Market Outlook, By Component (2023-2034) (\$MN)
- Table 3 Global AI in Retail Market Outlook, By Solutions (2023-2034) (\$MN)
- Table 4 Global AI in Retail Market Outlook, By Customer Service Solutions (2023-2034) (\$MN)
- Table 5 Global AI in Retail Market Outlook, By Inventory Management Solutions (2023-2034) (\$MN)
- Table 6 Global AI in Retail Market Outlook, By Pricing Optimization Solutions (2023-2034) (\$MN)
- Table 7 Global AI in Retail Market Outlook, By Fraud Detection Solutions (2023-2034) (\$MN)
- Table 8 Global AI in Retail Market Outlook, By Recommendation Engines (2023-2034) (\$MN)
- Table 9 Global AI in Retail Market Outlook, By Services (2023-2034) (\$MN)
- Table 10 Global AI in Retail Market Outlook, By Professional Services (2023-2034) (\$MN)
- Table 11 Global AI in Retail Market Outlook, By Managed Services (2023-2034) (\$MN)
- Table 12 Global AI in Retail Market Outlook, By Technology (2023-2034) (\$MN)
- Table 13 Global AI in Retail Market Outlook, By Machine Learning & Deep Learning (2023-2034) (\$MN)
- Table 14 Global AI in Retail Market Outlook, By Natural Language Processing (NLP) (2023-2034) (\$MN)
- Table 15 Global AI in Retail Market Outlook, By Chatbots & Virtual Assistants (2023-2034) (\$MN)
- Table 16 Global AI in Retail Market Outlook, By Image & Video Analytics (2023-2034) (\$MN)
- Table 17 Global AI in Retail Market Outlook, By Swarm Intelligence (2023-2034) (\$MN)
- Table 18 Global AI in Retail Market Outlook, By Deployment Mode (2023-2034) (\$MN)
- Table 19 Global AI in Retail Market Outlook, By Cloud-based (2023-2034) (\$MN)
- Table 20 Global AI in Retail Market Outlook, By On-Premise (2023-2034) (\$MN)
- Table 21 Global AI in Retail Market Outlook, By Sales Channel (2023-2034) (\$MN)
- Table 22 Global AI in Retail Market Outlook, By Omnichannel Retail (2023-2034) (\$MN)
- Table 23 Global AI in Retail Market Outlook, By Brick-and-Mortar Stores (2023-2034) (\$MN)
- Table 24 Global AI in Retail Market Outlook, By Pure-play Online Retailers (2023-2034)

(\$MN)

Table 25 Global AI in Retail Market Outlook, By Application (2023-2034) (\$MN)

Table 26 Global AI in Retail Market Outlook, By Customer Relationship Management (CRM) (2023-2034) (\$MN)

Table 27 Global AI in Retail Market Outlook, By Supply Chain & Logistics (2023-2034) (\$MN)

Table 28 Global AI in Retail Market Outlook, By Inventory Management & Demand Forecasting (2023-2034) (\$MN)

Table 29 Global AI in Retail Market Outlook, By Product Optimization & Merchandising (2023-2034) (\$MN)

Table 30 Global AI in Retail Market Outlook, By In-store Navigation & Smart Shelves (2023-2034) (\$MN)

Table 31 Global AI in Retail Market Outlook, By Payment, Pricing & Checkout Analytics (2023-2034) (\$MN)

Table 32 Global AI in Retail Market Outlook, By Fraud Detection & Loss Prevention (2023-2034) (\$MN)

Table 33 Global AI in Retail Market Outlook, By Virtual Assistants & Chatbots (2023-2034) (\$MN)

Table 34 Global AI in Retail Market Outlook, By End User (2023-2034) (\$MN)

Table 35 Global AI in Retail Market Outlook, By Supermarkets & Hypermarkets (2023-2034) (\$MN)

Table 36 Global AI in Retail Market Outlook, By Specialty Stores (2023-2034) (\$MN)

Table 37 Global AI in Retail Market Outlook, By Convenience Stores (2023-2034) (\$MN)

Table 38 Global AI in Retail Market Outlook, By Department Stores (2023-2034) (\$MN)

Table 39 Global AI in Retail Market Outlook, By E-commerce Retailers (2023-2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) are also represented in the same manner as above.

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