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Last-Mile Automation Market Forecasts to 2034 – Global Analysis By Component (Hardware, Software, and Services), Automation Level (Semi-Autonomous Solutions, and Fully Autonomous Solutions), Vehicle Type, Delivery Range, Delivery Mode, Deployment Mode, Application, End User, and By Geography

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Abstracts

According to Stratistics MRC, the Global Last-Mile Automation Market is accounted for $16.8 billion in 2026 and is expected to reach $66.0 billion by 2034 growing at a CAGR of 18.6% during the forecast period. Last-mile automation encompasses the deployment of autonomous technologies including delivery drones, ground robots, and self-driving vehicles to execute the final leg of the supply chain from distribution hubs to end consumers. This market integrates sophisticated hardware, AI-driven software platforms, and specialized services to address escalating e-commerce demands and urban congestion challenges. By replacing traditional delivery methods with automated solutions, the industry aims to reduce delivery times, lower operational costs, and overcome persistent labor shortages while enabling contactless, on-demand fulfillment across food, retail, healthcare, and logistics applications.

Market Dynamics:

Driver:

Growth of on-demand e-commerce and labor constraints

E-commerce now accounts for over 16% of total retail sales, with online volumes reaching unprecedented levels that strain conventional delivery models. Traditional

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human-driver approaches face structural limitations, including driver availability, rising wages, and congestion constraints that make profitable rapid delivery increasingly difficult. Sidewalk robots, autonomous vehicles, and delivery drones offer a practical solution by decoupling marginal delivery costs from driver labor, particularly for short-distance food, grocery, and convenience deliveries concentrated in dense urban areas. Operators can dynamically deploy fleets to match fluctuating demand without recruiting equivalent numbers of human couriers, enabling consistent service during peak periods and adverse weather conditions.

Restraint:

Fragmented regulatory and safety frameworks

Regulatory authorities worldwide implement complex, evolving rules for sidewalk devices, road-going robots, and unmanned aircraft systems that vary dramatically between regions. For drone operations, aviation authorities typically treat commercial delivery as an airline-like service requiring extensive certification and compliance with strict safety, environmental, and airspace regulations. Waivers, rather than standardized frameworks, primarily permit Beyond Visual Line of Sight operations, which are essential for economically viable drone delivery. This mix of rules makes it hard for providers to get quick approvals for new areas or routes, which keeps automation limited to small test projects instead of allowing widespread use.

Opportunity:

Expansion into healthcare and critical supplies

Healthcare applications carry premium pricing potential due to the critical nature of time-sensitive medical payloads, including blood products, vaccines, lab specimens, and home-care medications. Unlike restaurant meals or general e-commerce parcels, these deliveries can justify dedicated infrastructure and premium pricing when automation materially improves access and reliability, particularly for rural or mobility-constrained populations. Drones effectively bypass congestion and difficult terrain to connect hospitals, clinics, pharmacies, and patient homes, while sidewalk robots handle neighborhood-level legs from local pharmacies.

Threat:

Environmental and climate challenges

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Inclement conditions, including high winds, heavy precipitation, and extreme temperatures, can ground drone fleets or compromise ground robot navigation, leading to service interruptions and customer dissatisfaction. Battery performance degrades substantially in temperature extremes, reducing effective range and payload capacity precisely when demand for emergency deliveries may increase during weather-related crises. Climate change intensifies the frequency and severity of severe weather events, potentially limiting operational days and damaging ground infrastructure.

Covid-19 Impact:

The COVID-19 pandemic acted as a powerful catalyst for last-mile automation adoption, accelerating market growth by several years through unprecedented demand for contactless delivery solutions. With lockdowns and social distancing measures in place, consumers and businesses rapidly embraced automated delivery options as essential services rather than experimental novelties. Healthcare systems deployed drones and robots extensively to transport vaccines, test samples, and medical supplies between facilities and to remote communities, demonstrating life-saving applications that permanently shifted perceptions. The pandemic fundamentally transformed consumer expectations around delivery speed and safety, creating sustained demand that persists post-crisis.

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

The hardware segment is expected to account for the largest market share during the forecast period, serving as the foundational cornerstone of last-mile automation deployments. This segment encompasses autonomous robots, delivery drones, autonomous delivery vehicles, and critical sensors and navigation systems, including high-precision LIDAR units, cameras, radar arrays, and control systems. Robotics manufacturers focus on improving hardware because the safety and reliability of vehicles rely heavily on strong physical parts, and now it's common for commercial vehicles to have dual braking systems and multiple sensors working together. The surge in demand for high-performance components is evident through dramatically increased shipments of LIDAR units, motors, and batteries to OEMs and integrators.

The fully autonomous solutions segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the fully autonomous solutions segment is predicted to witness

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the highest growth rate, driven by accelerating technological maturity and expanding operational capabilities. These solutions operate without human intervention, relying on advanced AI algorithms, sophisticated sensor fusion, and real-time decision-making capabilities to navigate complex urban environments independently. As navigation software gets better and rules start to allow operations without supervision, fully autonomous systems can save money by removing the need for drivers and allowing them to operate all day, every day.

Region with largest share:

During the forecast period, the North America region is expected to register the largest market share, driven by strong technological infrastructure and regulatory backing. The region's leadership is anchored by US-based industry pioneers, including Amazon, FedEx, Nuro, and Starship Technologies, deploying thousands of autonomous robots and drones in real-world applications. Major cities and suburban hubs feature smart logistics infrastructure, extensive 5G connectivity, and purpose-built test corridors enabling seamless autonomous operations. Regulatory support remains robust, with aviation authorities approving commercial drone operations across dozens of states and local governments actively piloting sidewalk robot programs.

Region with highest CAGR:

During the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, led by rapid adoption across China, Japan, and India's expanding logistics sectors. China's government-backed initiatives under national strategic plans prioritize automation and AI in logistics, with designated smart transportation hubs enabling large-scale autonomous vehicle deployment. Japan's aging workforce and advanced robotics culture drive increasing utilization of delivery automation for medical supplies and urban logistics. India's digital infrastructure initiatives promote AI-driven logistics innovation supported by expanding startup ecosystems and autonomous vehicle testing guidelines. As e-commerce growth accelerates across the region and infrastructure develops to support autonomous systems, Asia Pacific emerges as the fastest-growing market for last-mile automation services.

Key players in the market

Some of the key players in Last-Mile Automation Market include Amazon.com, Inc., Alphabet Inc., JD.com, Inc., Alibaba Group Holding Limited, FedEx Corporation, United Parcel Service, Inc., DHL Group, Walmart Inc., Ocado Group plc, Nuro, Inc., Starship

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Technologies Inc., Zipline International Inc., Kiwibot, Inc., Locus Robotics Corporation, GreyOrange Pte Ltd., ABB Ltd., KUKA AG, and Boston Dynamics, Inc.

Key Developments:

In February 2026, Just Eat launched pilot trials of robotic delivery dogs in the UK using autonomous robots from Delivers.AI and RIVR, aiming to handle peak demand periods and accelerate automation in food delivery logistics.

In February 2026, Waymo partnered with DoorDash in a U.S. pilot where gig workers assist autonomous robotaxis supporting delivery operations, reflecting hybrid human-automation models in last-mile ecosystems.

In October 2025, Amazon announced new AI-driven robotics and intelligent automation systems designed to speed fulfillment and same-day deliveries, strengthening automation across last-mile logistics workflows.

Components Covered:

- Hardware
- Software
- Services

Automation Levels Covered:

- Semi-Autonomous Solutions
- Fully Autonomous Solutions

Vehicle Types Covered:

- Ground Delivery Robots
- Aerial Delivery Drones

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Autonomous Vans & Trucks

Sidewalk Robots

Delivery Ranges Covered:

Short-Range Deliveries (20 km)

Delivery Modes Covered:

Business-to-Consumer (B2C)

Business-to-Business (B2B)

Customer-to-Customer (C2C)

Deployment Modes Covered:

Cloud-Based

On-Premise

Applications Covered:

E-commerce Order Fulfillment

Food & Grocery Delivery

Parcel & Courier Logistics

Healthcare & Medical Deliveries

Retail Store Replenishment

Industrial & Campus Logistics

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End Users Covered:

- Logistics & 3PL Providers
- E-commerce Platforms
- Retail Chains
- Healthcare Institutions
- Food Service Providers
- Industrial & Enterprise Campuses

Regions Covered:

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - United Kingdom
  - Germany
  - France
  - Italy
  - Spain

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- Netherlands
- Belgium
- Sweden
- Switzerland
- Poland
- Rest of Europe

Asia Pacific

- China
- Japan
- India
- South Korea
- Australia
- Indonesia
- Thailand
- Malaysia
- Singapore
- Vietnam
- Rest of Asia Pacific

South America

- Brazil

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Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

§ Saudi Arabia

§ United Arab Emirates

§ Qatar

§ Israel

§ Rest of Middle East

Africa

§ South Africa

§ Egypt

§ Morocco

§ Rest of Africa

What our report offers:

- Market share assessments for the regional and country-level segments

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- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 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

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

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