

Mobile Robots Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

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Abstracts

The Global Mobile Robots Market was valued at USD 15.5 billion in 2024 and is estimated to grow at a CAGR of 14.7% to reach USD 61 billion by 2034, driven by the global shortage of skilled labor, especially in manufacturing and logistics. This shortage encourages businesses to adopt robotic solutions for handling repetitive tasks, order fulfillment, and material handling. The imposition of tariffs on robotic components during the Trump administration led to a spike in manufacturing costs for U.S. companies, which slowed the adoption of autonomous mobile robots (AMRs) and automated guided vehicles (AGVs) in small and medium-sized enterprises (SME).

As a result, manufacturers diversified their supply chains, shifted production to other regions, and restored manufacturing activities. In the long run, these strategies helped strengthen supply chain resilience by establishing regional hubs to mitigate trade risks. The adoption of mobile robots is further bolstered by rising minimum wages in developed economies, justifying the return on investment for robotic solutions. Industries like e-commerce, which experience seasonal demand surges, rely on mobile robots for scalability, a trend seen particularly in aging societies like Japan and Germany, where the labor gap is a growing concern.

The fully autonomous mobile robot segment was valued at USD 9 billion in 2024 and remains a dominant segment. These robots, which leverage AI and machine learning, can make real-time decisions without human input, making them ideal for dynamic environments like warehouses and hospitals. They navigate complex spaces using advanced sensors and SLAM (Simultaneous Localization and Mapping) technology. The rise of fully automated facilities, known as lights-out warehouses, accelerated the adoption of AMRs, particularly in Asia-Pacific and North America. However, challenges remain in applications requiring human-like dexterity, driving investments in advanced

technologies like computer vision and adaptive grippers.

The mobile robots market with a payload capacity of 50–500 kg segment was valued at USD 7.4 billion in 2024, reflecting their widespread application in various industries. These robots are essential for material handling in warehouses, facilitating the transport of heavy components in manufacturing environments, and moving large equipment in hospitals. The versatility of these robots in handling mid-range payloads makes them a critical link between lightweight robots used for smaller tasks and heavy-duty robots designed for more industrial-scale operations. As automation continues to expand in industrial sectors, this category of mobile robots is playing an increasingly vital role in streamlining operations and improving efficiency.

United States Mobile Robot Market reached USD 3.4 billion in 2024, driven by a combination of labor shortages, rising minimum wages, and growing interest in automation technologies across sectors such as logistics, healthcare, and retail. With high labor costs and an increasing need for operational efficiency, industries use mobile robots to optimize their supply chain and material handling processes. The U.S. market has also benefited from government initiatives and policies that foster innovation in robotics, helping companies improve productivity and reduce reliance on human labor.

Some leading players in the Global Mobile Robots Industry include KUKA AG, ABB, Hikrobot Co., Ltd., Teradyne Inc., and Geek+. To strengthen their market position, companies in the mobile robots industry are focusing on several strategies. One key approach is expanding their product portfolio by integrating cutting-edge technologies such as AI, machine learning, and advanced sensors into their robotic solutions. Companies are also increasingly localizing their manufacturing operations to mitigate trade risks and reduce reliance on international supply chains. Additionally, many partners with industry leaders in logistics, e-commerce, and manufacturing to tailor their robots to specific industry needs. Investment in R&D is another essential strategy, enabling companies to stay ahead of the curve with innovations in autonomous navigation, dexterity, and human-robot interaction.

Companies Mentioned

ABB, KUKA AG, Boston Dynamics, OMRON Corporation, Yaskawa America, Inc., Universal Robots A/S, Seiko Epson Corporation, FANUC America Corporation, Teradyne Inc., Geek+, Hikrobot Co., Ltd., Locus Robotics, Ocado Group plc., Rockwell Automation, Inc., Vecna Robotics, Agility Robotics

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