

Mobile Robots - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Mobile Robots Market size is estimated at USD 6.99 billion in 2024, and is expected to reach USD 23.56 billion by 2029, growing at a CAGR of 27.5% during the forecast period (2024-2029).

Due to increased e-commerce activity worldwide, demand for mobile robots is expanding. Due to their capacity to maneuver autonomously in challenging situations, factors such as growing warehouse automation and rising acceptance of these robots across various industries are further projected to drive market expansion. Furthermore, the rising adoption of automated material handling and trends like lights-out automation will likely drive market expansion throughout the projection period.

Key Highlights

- The growth in the e-commerce industry and the need for efficient warehousing and inventory management worldwide are driving the market growth. For instance, according to IBEF, the Indian e-commerce market is expected to flourish from USD 38.5 billion in 2017 to USD 200 billion by 2026.
- Factors such as decreasing costs, lower rates of transport, rising customer demand, and globalization of trade have caused a steady increase in the use of containers for sea-borne cargo. Consequently, container terminals have become an important component of logistic networks. It is paramount that ships are unloaded and loaded promptly at the port to satisfy customer demand.
- Mobile Robots are increasingly becoming the popular mode of container transport in seaport terminals. These unmanned vehicles transfer containers between ships and storage locations on land. The efficiency of a container terminal is directly related to the amount of time each vessel spends in the port. Hence, to maintain competitive advantage and increase the efficiency of the container terminal, AGVs are being deployed that formulate good dispatching strategies and simultaneously enhance operational efficiencies.

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-With social distancing becoming more common in the workplace, connected solutions and automation assist in continuing daily operations. The use of mobile robots guides work solutions, and computer-controlled equipment has been regarded as necessary by companies in Honeywell's Study. Moreover, warehouse execution software (48 percent), order-picking technology (46 percent), and robotic solutions (44 percent) have been widely implemented solutions currently, which are also most expected to receive further investment soon.

-Wireless communication systems in industrial environments must guarantee that the information is sent and received within precise time bounds. However, the nature of the radio channels and the medium access control (MAC) generates random communication delays. These delays can cause severe performance problems in automated guided vehicles for networked control systems.

Mobile Robots Market Trends

Autonomous Mobile Robot (AMR) to Witness the Market Growth

- Until recently, traditional automated guided vehicles (AGVs) were the only option for automating internal transportation tasks. However, in the present day, autonomous mobile robots (AMRs) threaten AGVs with their more advanced, adaptable, and affordable technology.

- Due to their unique operational characteristics and patterns, the demand for autonomous robots has recently increased significantly. Growth in the application of autonomous robots in different industrial sectors such as automotive and healthcare and raising awareness about the benefits of autonomous mobile robots fuel the demand for autonomous mobile robots. However, high costs associated with the setup and insufficient internet connectivity coverage might limit the adoption of autonomous mobile robots.

- E-commerce has now emerged as the preferred mode of shopping for customers. The choices it offers, the user-friendly experience it provides, and the convenience of shopping and paying for it from anywhere at any time are some of the factors driving the growth of the e-commerce industry. According to the International Trade Administration, global retail e-commerce sales are expected to reach USD 6,388 billion by 2024.

- Driven by the need to ensure timely delivery to their customers, who often expect instant gratification, and the resulting need to continually track and restock inventory of the goods, e-commerce companies are now using AMRs to improve the operational efficiencies of the big warehouses and distribution centers they operate. Thus, the rapid growth of the e-commerce business is contributing in a significant way to the growth of the AMR market.

- Further, AMRs can adapt to different workflows, accommodate factory process changes, and allow integration with several top modules to meet payload requirements. This enables smart, reliable deliveries and optimizes overall processes. Consequently, AMRs are superior to AGVs regarding return on investment and productivity optimization.

China to Witness Rapid Growth

- China has the world's largest manufacturing industry, generating a significant share of market demand. Moreover, the country's industrial output grew by 3.6% in 2022 from the previous year, as per the Ministry of Industry and Information Technology (MIIT), despite production and logistics disruptions from COVID-19 curbs. The manufacturing sector's output was estimated to have risen by 3.1% in 2022, accounting for 28% of China's gross domestic product (GDP), according to the MIIT.

- Moreover, the Chinese government's Made in China 2025 initiative, a state-led industrial policy that seeks to make China dominant in global high-tech manufacturing, provides significant growth momentum to the market. Made in China 2025 is a ten-year plan to update the country's manufacturing base by rapidly developing ten high-tech industries. Chief among these are

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electric cars and other new energy vehicles, next-generation information technology (IT) and telecommunications, and advanced robotics and artificial intelligence. These sectors are also central to the fourth industrial revolution.

- Increasing investments by many players in expanding their production capacities in the country is another important trend for the market. For instance, in December 2022, ABB officially opened its state-of-the-art, fully automated, and flexible robotics factory in Shanghai, China. The 67,000 m² production and research facility represents a USD 150 million investment by the company and is likely to deploy the company's digital and automation technologies to manufacture next-generation robots, enhancing ABB's robotics and automation leadership in China. Moreover, there are no traditional, fixed assembly lines in the facility; instead, intelligent, autonomous mobile robots connect to, network, and service flexible, modular production cells digitally.
- As mobile robots continue to make their way into various commercial and industrial settings and new players enter the sector, the market has been drawing increasing investments from many Chinese investors. Domestic robotics companies have been benefiting from a significant increase in funds in recent years.
- Moreover, the aging population and increasing labor costs are also influencing the demand for mobile robots in China. For instance, according to the National Bureau of Statistics of China, about 14 regions in China currently have a minimum monthly wage of over RMB 2,000 (USD 308), including Beijing, Jiangsu, Hebei, Zhejiang, Guangdong, and Sichuan.

Mobile Robots Industry Overview

The mobile robots market is competitive, moving towards a fragmented stage owing to the growing interest of several companies vying for attention in a fairly contested market space. Further, companies' strategic decisions, such as new product launches, investments, and collaborations, are expected to change the competitive landscape. Some key market players include Teledyne Inc., Fetch Robotics, Aethon Inc., and KION Group AG, among others.

In April 2023, JASCI Software, a provider of innovative warehouse management and automation solutions, partnered with Tompkins Robotics to launch batch pick and robotic unit sortation technology that would revolutionize how goods are sorted and stored in warehouses. Further, the company also aims to invest in research and development initiatives with the aim of providing its customers with enhanced and innovative products on the market.

In March 2023, OTTO Motors, a Clearpath company, unveiled the OTTO 600, the most challenging and agile AMR in its class. With the introduction of the OTTO 600, OTTO Motors now has the market's largest fleet of autonomous material-handling vehicles. The OTTO 600 is an AMR built to perform in the most demanding factory environments, with an all-metal construction and an IP54 rating.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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