

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

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Report description:

The Autonomous Mobile Robot Market size is estimated at USD 3.88 billion in 2024, and is expected to reach USD 8.02 billion by 2029, growing at a CAGR of 15.60% during the forecast period (2024-2029).

The increasing trends of automation in manufacturing, the growing e-commerce sector, the mass personalization of goods, and a shortage of low-cost labor are among the primary factors contributing to the market growth.

Key Highlights

- The essential advantage of an AMR is its ability to understand its operating environment, enabling it to navigate around obstacles and operate safely in the presence of human operators. In contrast to an automated guided vehicle, which needs some form of guided paths, such as magnetic tape or QR codes, to navigate through its environment, an AMR can use data from cameras, laser scanners, and other sensors to understand its operating environment and make the decisions needed to move around it.
- Increasing robotics, autonomous technologies, and IoT advancements have created an ideal environment for adopting connected industrial autonomous vehicles across various industries. These autonomous vehicles are expected to change the industrial landscape alongside the steady adoption of autonomous technologies in consumer automotive vehicles and public transport. This rise of autonomous industrial cars is expected to drive the market's growth further in the future.
- Apart from labor-related challenges, safety is another critical factor in the shift toward leveraging AMRs for warehouse automation. For instance, according to the Occupational Safety and Health Administration (OSHA) and the US Department of Labor, over 11% of forklifts, typically used to move and transport pallets within a warehouse, are likely to be involved in an accident. However, the emergence of AMRs that can take on a pallet or bulk movements helps reduce the reliance on forklifts for specific activities and is expected to improve warehouse-related safety significantly.
- The initial cost of AMR can be prohibitive, primarily if it is evaluated on a short-term outcome. AGV System is more expensive

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than hiring personnel or using other equipment, such as manual forklifts. However, AMR can result in a positive Return on Investment (ROI) in the long run and increase overall efficiency and productivity, driving economic advantages.

-As a result of the challenges brought about by the COVID-19 pandemic and its associated lockdowns, companies across different industries accelerated the adoption of AMRs for automating many tasks to reduce person-to-person contact significantly. After the pandemic, the market is proliferating, with increased consumers shifting to online shopping, resulting in a surge in demand for e-commerce warehouses and distribution services.

Autonomous Mobile Robot Market Trends

Automotive Sector Expected to Register Significant Growth

- AMRs allow automotive manufacturers to streamline the material flow, shorten lead time, and achieve more efficient production. Moreover, as automotive manufacturers prioritize flexibility over volume throughout the forecast period, with the adoption of Just-In-Time (JIT) manufacturing techniques, autonomous mobile robots (AMRs) are becoming increasingly popular as a logistic solution that can adapt rapidly to changing production layouts and processes.

- The use of robotics in vehicle manufacturing is expected to continue to grow fast enough to speed up production. Auto manufacturers, like Toyota and BMW, are investing to leverage what they already know about robotics and manufacturing to increase their share in the robotics market. For multiple years, BMW has partnered with Nvidia to develop mobile robots for internal use in their factories, primarily around automated material handling at the last mile.

- Further, increased investment in automated manufacturing techniques, including industry 4.0 norms across regions, is expected to dive into the market of AMRs within the automotive field. Though robots have been prevalent in the automotive industry for many years, autonomous mobile robots (AMRs) are still relatively new. However, as players in the industry start realizing the benefits of implementing these solutions, the market is expected to grow significantly in the coming years. For instance, by adding AMR to the workforce, the automotive industry can save non-value work hours and give complex, value-adding tasks to their current staff in a safer environment.

- In May 2022, Germany-based automotive technology company Continental presented its Autonomous Mobile Robots for the external market for the first time at the LogiMAT 2022 held in Stuttgart, Germany. Building on the company's years of extensive research in robotics, Continental included these solutions into its product portfolio in the newly established area of Continental Mobile Robots. The company built its Autonomous Mobile Robots in-house to meet the demands and challenges of the future factory.

- Moreover, recent years saw significant growth in the sale of electric vehicles, another important driver for the market. As per IEA, electric car sales reached a record high in 2021, despite supply chain bottlenecks and the COVID-19 pandemic. Compared with the previous year, sales nearly doubled to 6.6 million, bringing the total number of electric cars on the road to 16.5 million. The emergence of EVs has induced complex manufacturing challenges in the automotive sector, paving the way for robots, specifically autonomous mobile robots, to assist in manufacturing.

Asia Pacific is Expected to Dominate the Market

- Asia-Pacific occupied the largest market share in 2022 and is expected to witness the highest growth during the forecast period. The developing e-commerce industry in Asia-Pacific's emerging nations is encouraging the usage of autonomous mobile robots for inventory management.

- China has been a significant user of industrial robots. Its innovative manufacturing facilities have been noted due to its abundant, inexpensive labor and typically laxer safety regulations than North America or Europe. However, due to the various

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government initiatives like "Made in China 2025", the country intends to improve its research capacities in robots, artificial intelligence (AI), and cloud data technologies. China intends to create technologies that will lead to a stronger manufacturing future by concentrating on these sectors of the economy.

- Under the Japanese "New Robot Strategy," the country aims to make Japan the world's top robot manufacturer. The robot development will mainly focus on the manufacturing, service, nursing and medical, infrastructure, disaster response, agriculture, and construction sectors. According to the JARA (Japan Robot Association) Report 2022, the country produced 282,934 robots worth JPY 1,050.87 billion (USD 7.55 trillion) in 2022.

- Along with China and Japan, India remains a potential market for robots and automation. Though India severely lags behind the rest of the world, it is upping its automation quotient. According to the International Federation of Robotics, or IFR, sales of industrial robots in India set a new high in 2021 with 4,945 units installed, a 54% increase from 3,215 units in 2020. According to the IFR's World Robotics report, India is now ranked ninth globally in yearly installations.

Autonomous Mobile Robot Industry Overview

The Autonomous Mobile Robot Market is highly fragmented, with the presence of major players like Fetch Robotics (Zebra Technologies Corporation), Mobile Industrial Robots (Mir)(Teradyne Inc.), Geek+ Technology Co. Ltd, Vecna Robotics Inc., and Seegrid Corporation. Players in the market are adopting strategies such as partnerships and acquisitions to enhance their product offerings and gain sustainable competitive advantage.

In May 2023, Otto Motors launched the Otto Certified Dealer program to provide high-quality service and support locally throughout North America. The program introduces over 215 regional offices and 2,000 technicians to the rapidly growing AMR industry. Also, in April 2023, OTTO Motors announced its formal expansion into the European market. With the expansion, the company aims to serve its global customer base better and improve material handling operations worldwide.

In March 2023, Geek+ showcased its most recent automation solutions at ProMat2023. The upgraded M200C moving robot was displayed at the Geek+ booth. The M200C is a highly flexible mobile robot connecting various production line parts. The M200C has a built-in lift and can be configured to move bins or shelves. It uses a hybrid navigation system with cutting-edge safety features.

Additional Benefits:

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

Table of Contents:

1 INTRODUCTION

1.1 Study Assumptions and Market Definition

1.2 Scope of the Study

2 RESEARCH METHODOLOGY

3 EXECUTIVE SUMMARY

4 MARKET INSIGHTS

4.1 Market Overview

4.2 Industry Value Chain Analysis

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- 4.3 Industry Attractiveness - Porter's Five Forces Analysis
 - 4.3.1 Bargaining Power of Suppliers
 - 4.3.2 Bargaining Power of Buyers
 - 4.3.3 Threat of New Entrants
 - 4.3.4 Threat of Substitute Products
 - 4.3.5 Intensity of Competitive Rivalry
- 4.4 Assessment of the Impact of the COVID-19 pandemic on the Industry

5 MARKET DYNAMICS

- 5.1 Market Drivers
 - 5.1.1 Increasing Demand for Automation across the End-user Industries
 - 5.1.2 Labor-related Challenges Coupled with Advancements in Technology
- 5.2 Market Restraints
 - 5.2.1 Communication and Connectivity Issues
 - 5.2.2 High Capital Requirements

6 MARKET SEGMENTATION

- 6.1 By Type
 - 6.1.1 Unmanned Ground Vehicle
 - 6.1.2 Humanoid
 - 6.1.3 Unmanned Aerial Vehicle
 - 6.1.4 Unmanned Marine Vehicle
- 6.2 By End-user Industry
 - 6.2.1 Defense and Security
 - 6.2.2 Warehouse and Logistics
 - 6.2.3 Energy and Power
 - 6.2.4 Automotive
 - 6.2.5 Manufacturing
 - 6.2.6 Oil and Gas
 - 6.2.7 Mining and Minerals
 - 6.2.8 Other End-user Industries
- 6.3 By Geography
 - 6.3.1 North America
 - 6.3.1.1 United States
 - 6.3.1.2 Canada
 - 6.3.2 Europe
 - 6.3.2.1 United Kingdom
 - 6.3.2.2 Germany
 - 6.3.2.3 France
 - 6.3.2.4 Rest of Europe
 - 6.3.3 Asia-Pacific
 - 6.3.3.1 China
 - 6.3.3.2 Japan
 - 6.3.3.3 India
 - 6.3.3.4 Rest of Asia-Pacific
 - 6.3.4 Latin America
 - 6.3.4.1 Brazil

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- 6.3.4.2 Argentina
- 6.3.4.3 Rest of Latin America
- 6.3.5 Middle East and Africa
 - 6.3.5.1 Saudi Arabia
 - 6.3.5.2 United Arab Emirates
 - 6.3.5.3 South Africa
 - 6.3.5.4 Rest of Middle East and Africa

7 COMPETITIVE LANDSCAPE

- 7.1 Company Profiles
 - 7.1.1 Fetch Robotics (Zebra Technologies Corporation)
 - 7.1.2 Mobile Industrial Robots (Mir)(Teradyne Inc.)
 - 7.1.3 Geek+ Technology Co. Ltd.
 - 7.1.4 Vecna Robotics Inc.
 - 7.1.5 Seegrid Corporation
 - 7.1.6 Aethon Inc. (ST ENGINEERING HUB)
 - 7.1.7 Omron Corporation
 - 7.1.8 OTTO Motors
 - 7.1.9 Clearpath Robotics
 - 7.1.10 HiK Robot
 - 7.1.11 Softbank Robotics
 - 7.1.12 SMP Robotics

8 VENDOR MARKET POSITIONING

9 INVESTMENT ANALYSIS

10 FUTURE OF THE MARKET

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