Autonomous Mobile Robot Market - Global Outlook & Forecast 2023-2028

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Report description:

The global autonomous mobile robots market was valued at USD 8.65 billion in 2022 and is expected to grow at a CAGR of 18.29% from 2022-2028.

MARKET TRENDS & OPPORTUNITIES

High Adoption of Technology in Warehousing & Logistics

Cutting-edge robotics technology has emerged as a highly sought-after solution for effectively managing warehouses. Prominent manufacturers collaborate with warehouse management system providers to develop tailor-made software and intelligent robots to oversee warehouse stock organization, storage, and categorization. As the demand for timely order processing, the need to handle a multitude of products, and the requirements for personalized order fulfillment continues to grow; robotics solutions offer an efficient response by accommodating increased volume, performing a wider range of tasks with reduced labor dependency, and ultimately lowering operational costs.
Regarding warehousing & logistics, robotics signifies the emergence of autonomous machinery engineered to complement or replace human labor within manufacturing and logistics contexts. A robotic system essentially comprises two essential components: the physical machine, designed for a specific task, and the accompanying software that governs its actions.

Rising Adoption in the Healthcare Industry

Autonomous mobile robots are increasingly being adopted in the healthcare industry for various reasons, as they offer a wide range of benefits that can improve efficiency, safety, and patient care. In healthcare facilities like hospitals and clinics, there's a constant need to move materials, supplies, and medication throughout the facility.
Majorly autonomous mobile robots are adopted in the healthcare industry for the following reasons:

-To Improve Efficiency and Productivity: Autonomous mobile robots can help automate many repetitive and time-consuming tasks

currently performed by human workers in hospitals and other healthcare settings. This can free up human workers to focus on more important tasks, such as providing care to patients.
- To Improve Accuracy and Safety: AMRs are equipped with sensors that allow them to navigate autonomously and avoid obstacles; this can help reduce the risk of human error and accidents.
- To Reduce Costs: AMRs can help healthcare organizations reduce labor costs and improve operational efficiency, leading to significant cost savings over time.

INDUSTRY RESTRAINTS

High Initial Costs

The substantial initial cost is a formidable entry barrier in the autonomous mobile robots market, particularly when considering their deployment in various industries, such as restaurants and food service establishments, for tasks like customer service and food delivery. This emerging industry has attracted attention due to its potential to streamline operations, reduce labor expenses, and elevate the overall customer experience. Nonetheless, the upfront investment needed to adopt and integrate the autonomous mobile robots market can be high, posing a considerable challenge for many businesses aiming to incorporate this technology.

SEGMENTATION INSIGHTS

INSIGHT BY COMPONENT

The hardware component segment dominated the global autonomous mobile robots market in 2022. The hardware segment of the AMR market encompasses the physical components that make up these robots. This includes sensors, actuators, mobility systems (like wheels or tracks), chassis, and power sources. This segment has grown substantially in recent years, primarily due to the increasing adoption of AMRs across various industries. Sensors are a vital component of AMRs, providing real-time data about the robot's surroundings. Furthermore, the software segment of the AMR market comprises algorithms, artificial intelligence (AI), and control systems that enable robots to perceive, plan, and navigate autonomously. This segment has experienced rapid growth, largely driven by AI and machine learning advancements. As industries seek to automate increasingly complex tasks, the demand for sophisticated software capable of handling intricate processes, such as advanced object recognition, navigation in dynamic environments, and adaptive decision-making, is rising.

Segmentation by Component

- Hardware
- Software

INSIGHTS BY PRODUCT

The global autonomous mobile robots market by product has been broadly classified into goods-to-person picking robots, inventory robots, self-driving forklifts, and others. In 2022, the market has been dominated by the goods-to-person picking robots segment. Goods-to-person (G2P) picking robots are robotic systems designed to enhance order fulfillment and logistics operations by bringing items or products directly to human operators for picking and packing. These robots are typically used in warehouses, distribution centers, and e-commerce fulfillment centers where the efficient and accurate retrieval of items is crucial. Moreover, the exponential growth of e-commerce has transformed the retail landscape. Online shoppers expect fast, accurate, and on-time deliveries. G2P systems streamline order fulfillment processes, enabling businesses to keep up with the increasing demand. Consumers now anticipate quick and reliable order delivery, often with same-day or next-day shipping options. G2P systems expedite order processing, reducing delivery times and enhancing customer satisfaction.

Segmentation by Product

-Goods-To-Person Picking Robots
-Inventory Robots
-Self Driving Forklifts
-Others

INSIGHT BY END USER

The global autonomous mobile robots market by end users is segmented into warehousing & logistics, e-commerce & retail, manufacturing, healthcare, hospitality, and others. In 2022, warehousing & logistics accounts for the highest revenue share of the market. AMRs optimize and streamline various logistics and supply chain processes, including inventory management, order picking, packing, sorting, and material transportation. Their autonomy and adaptability make them valuable tools for improving efficiency, reducing labor costs, and enhancing overall warehouse and logistics operations. This has led to the demand for autonomous mobile robots in the warehouse & logistics segment. Moreover, e-commerce & retailers have also recognized the significance of autonomous mobile robots to enhance consumers' online shopping habits that are likely to persist due to the growing convenience of the experience.

Segmentation by End-User

-Warehousing & Logistics
-E-commerce & Retail
-Manufacturing
-Healthcare
-Hospitality
-Others

GEOGRAPHICAL ANALYSIS

European industries are investing in automation and Industry 4.0 initiatives, including integrating AMRs into manufacturing processes. Factors such as the rising demand for high-end quality goods at competitive pricing and intense market competition are expected to propel the various industries towards the implementation of industrial robots as well as automation of the material handling processes via AMRs. Such factors further support the growth of the autonomous mobile robots market. Regions such as Latin America, the Middle East, and Africa are gradually embracing AMR technology, but adoption levels may vary widely. These regions increasingly recognize the potential benefits of AMRs in various industries, including logistics and agriculture, and support the growth of the autonomous mobile robots market.

Segmentation by Geography

-APAC
oChina
oJapan
oSouth Korea
oSingapore
oRest of APAC
-North America
oUS

o Canada
- Europe
o Germany
o Italy
o UK
o France
o Spain
o Poland
o Rest of Europe
- Middle East & Africa
o Saudi Arabia
o UAE
o South Africa
o Rest of the Middle East & Africa
- Latin America
o Brazil
o Mexico
o Rest of Latin America

COMPETITIVE LANDSCAPE

The global autonomous mobile robots market has witnessed a dynamic and competitive landscape shaped by a blend of established industry leaders, innovative startups, and technology providers. This sector has experienced significant growth, driven by the increasing adoption of automation across various industries. Boston Dynamics is a notable autonomous mobile robots market player renowned for its cutting-edge robotics and mobility solutions. The company has pioneered advanced quadruped and biped robots with unparalleled mobility and manipulation capabilities, positioning itself as a leader in developing highly agile and versatile robotic platforms.

Key Company Profiles

- ABB
- Geekplus Technology
- KUKA
- Locus Robotics
- Omron Automation
- Teradyne

Other Prominent Vendors

- Aethon (ST Engineering)
- Blue Ocean Robotics
- Boston Dynamics
- Conveyco Technologies
- Fetch Robotics (Zebra Technologies)
- GreyOrange
- Harvest Automation
- inVia Robotics

-Milvus Robotics
-OTTO Motors (Clearpath Robotics)
-Robotnik
-SoftBank Robotics
-Tugbot
-Vecna Robotics
-Youibot Robotics

KEY QUESTIONS ANSWERED:

1.How big is the autonomous mobile robots market?
2.What is the growth rate of the global autonomous mobile robots market?
3.Which region dominates the global autonomous mobile robots market share?
4.What are the significant trends in the autonomous mobile robots market?
5.Who are the key players in the global autonomous mobile robots market?

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