

## **Robotics Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)**

Market Report | 2023-01-23 | 120 pages | Mordor Intelligence

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### **Report description:**

The Robotics Market is anticipated to register a CAGR of 17.6% during the forecast period. The rise in concern, development of energy-efficient drive systems, and high competition among industrial verticals for shifting towards advanced technology and automation are driving the market growth.

#### Key Highlights

A large number of investments are recorded in the robotics domain due to the increased demand. The World Robotics report from the International Federation of Robotics indicated that the investments in new car production capacities and modernization of industrial spaces had driven the demand for robots.

For instance, in August 2022, Hyundai Motor Group invested USD 400 million in establishing the Boston Dynamics AI Institute to advance AI and robotics. The company's goal is to make "fundamental advances in AI, robotics, and intelligent machines," with resources focused on cognitive AI, athletic AI, and organic hardware design, with each discipline contributing to advancements in advanced machine capabilities.

Manufacturing companies have adopted robots in their processes to improve productivity and enhance the quality of their respective vehicles. For instance, Ford Motor Company uses around 450 robots to paint vehicles and carry out body construction operations at its Sanand facility plant in India. Further, Maruti Suzuki India uses approximately 5,000 robots in one of its plants. Digitization and the industry 4.0 revolution have stimulated the growth of automation among industries by making them use more innovative and automated solutions, such as robotics and control systems, to improve their production processes. Multiple key elements of Industry 4.0 apply to robotics, such as connectivity and data. Recently, Siemens partnered with Google Cloud intending to integrate Google Cloud's data cloud and artificial intelligence/machine learning technologies with its factory automation solutions.

Further, in March 2022, Mitsubishi developed a robotics system that can work as fast as humans and can be controlled via voice commands. The new system uses Mitsubishi Electric's Maisart AI technologies, such as high-precision speech recognition, to initiate work tasks, after which operators can fine-tune robot movements as needed.

Various organizations worldwide are adopting robotics automation in their warehouses to reduce the capital spent on labor. For

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instance, the operational stock of industrial robots reached around 3800 (in thousand units) in recent years. Further, Alibaba upgraded to robotic labor in one of its warehouses, drastically reducing the labor workforce by 70% and creating an opportunity for a highly-skilled workforce.

Curbing COVID-19 involved utilizing various robot technologies, such as cleaning and disinfection service robots. Increased uninfected demands opened this new place for service robots. As a result, most manufacturers registered new disinfection robots. Further, multiple manufacturing companies reported being benefitted from adopting industrial robots. For instance, Procter & Gamble found that the strategic addition of robots to its production lines made it possible to keep more workers on the job and produce more goods while complying with social distancing guidelines.

## Robotics Market Trends

### Service Robotics is Expected to Witness Significant Growth

The increasing number of medical Robot systems-assisted surgeries further expands the product innovation rate in the market. In August 2022, Max Super Speciality Hospital, Mohali, launched one of the most advanced technologies in India, the Da Vinci Xi Surgical Robot, at its hospital. The launch of the revolutionary Da Vinci Xi Surgical Robot is yet another patient-centric step taken by healthcare providers to empower patients with access to quality healthcare services.

Further, according to NIOSH, healthcare workers have the most hazardous industrial jobs in the United States, with the highest number of nonfatal occupational injuries and illnesses. It is estimated that about 6,000 surgical robots perform a million operations globally. The market was worth USD 6 billion. A basic system costs USD 2 million. Reputed organizations, such as MIT and the University of Michigan, are working on the technology to deliver small and compact robots to the medical sector. Moreover, the Bureau of Labor Statistics indicates that there are 2,384,600 building janitors and cleaners. Companies are spending about USD 60 billion on average annually. This is exclusive of the insurance amount that has become expensive as the janitorial industry records one of the highest numbers of occupational injuries. Factors like these boost the demand for cleaning robots for apparent reasons.

According to data from the United Nations, the global population of people above the age of 65 years is expected to grow by 181% and may account for 16% of the population by 2050. The aging population is one of the primary factors for the significant growth in deploying robots in domestic healthcare and assistance applications.

Hyundai Motor Group recently unveiled the Factory Safety Service Robot, a robot for industrial site safety, and announced its pilot operation at Kia's South Korean plant. The Robot is based on Dynamics' Spot quadruped robot of Boston Dynamics, with artificial intelligence (AI), autonomous navigation, teleoperation technologies, and a computing payload developed by the Group's Robotics Lab for various industrial tasks.

According to IFR 2022, Robots for domestic tasks constituted the largest group of consumer robots. Almost 19 million units (+12%) were sold recently. Vacuuming and other indoor domestic floor cleaning robots are currently the most used applications. This service robot is available in almost every convenience store, making it easily accessible to consumers. Such developments may further drive the market's growth in the future.

Further, in January 2022, ANSCER Robotics, a Bengaluru-based startup and the name behind the world's first AMR "brain" to democratize robotics technology for all unveiled its range of autonomous mobile robots (AMRs) for the very first time at the India Warehousing Show (IWS) held at Pragati Maidan, New Delhi.

### Asia Pacific is Expected to Hold a Major Market Share

The Asia-Pacific region is projected to hold a significant market share due to the considerable adoption of robots. Further, South

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Korea and China are dominant in adopting robotics due to the massive electronic and automotive manufacturing industry deployment.

The Japanese government announced funding for developing eldercare robots to fill the estimated gap of around 380,000 skilled workers by 2025. In addition, By 2050, the Japanese government aims to ensure that all new cars sold in Japan will be either electric or hybrid. The country intends to offer subsidies to accelerate the private-sector development of batteries and motors for an electricity-powered vehicles. This is expected to also drive the adoption of elderly care robots at their residences in the immediate future.

Further, in October 2022, Robotex India, in collaboration with BMC Software India Pvt. Ltd, declared to launch multiple initiatives toward intensifying the STEM education ecosystem in India. With the industry 'Build Your First Robot,' BMC Software aims to empower 250 female learners from government schools in Pune with the technical skills required to expand their employability and bridge the gender divide. Such initiatives may further drive the growth of the market studied in the future.

The automotive industry has been growing significantly in China, which plays a crucial role in the global automotive market. The government of China also views its automotive industry, including the auto parts sector, as one of the country's major pillar industries. The central government of China expects that the country's automobile output will reach around 35 million units by 2025.

As the region faces an aging population, government organizations are planning to rely more on robots in the workforce. For instance, the Housing Development Board (Singapore) intends to adopt autonomous drones or robots to identify which parts of public housing blocks need cleaning. The primary aim is to reduce the water required to clean by focusing only on the dirty areas. Further, Artificial intelligence technology company Ubtech Robotics launched the Adibot UV-C Disinfecting Robot at CES 2021. The Adibot robotic disinfection system was designed to offer a hospital-grade solution against COVID-19, integrating the robotics and AI from Ubtech with UV-C technology that disinfects targeted surfaces and air by deactivating the DNA and RNA of harmful pathogens.

#### Robotics Market Competitor Analysis

The Global Robotics market is relatively fragmented, with some major market players such as ABB Ltd., Yaskawa Electric Corporation, Denso Corporation, Fanuc Corporation, and Kuka AG. The market vendors are focusing on expanding their customer base across foreign countries. The companies are leveraging strategic collaborative initiatives to increase market share and profitability.

In October 2022, ABB launched its smallest-ever industrial robot, offering unique possibilities for faster, more flexible, and high-quality production of wearable intelligent gadgets. With its compact size, class-leading payload, and unrivaled accuracy, the new IRB 1010 delivers electronics manufacturers the opportunity to expand their production of devices, including advanced watches, earphones, sensors, and health trackers, via automation.

In February 2022, Yaskawa Motoman, one of the world's largest manufacturers of industrial robots, launched two new collaborative robots such as HC10DTP and HC20DTP, each of which has six axes. The company described them as "highly reliable robots (that) enrich easy capability for Yaskawa's HC-series line.

#### Additional Benefits:

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