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Robotics Technology Market Forecasts to 2030 – Global Analysis By Type (Industrial Robots, Service Robots, Collaborative Robots, Mobile Robots, Humanoid Robots, and Other Types), Component, Technology, Application and By Geography

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Abstracts

According to Stratistics MRC, the Global Robotics Technology Market is accounted for $120.05 billion in 2024 and is expected to reach $311.12 billion by 2030 growing at a CAGR of 17.2% during the forecast period. Robotics technology involves the design, development, and application of robots to perform tasks that are typically carried out by humans. It encompasses various fields including mechanical engineering, electrical engineering, computer science, and artificial intelligence to create machines capable of performing automated tasks with precision, efficiency, and speed. Robotics technology is applied across industries such as manufacturing, healthcare, logistics, and defense, aiming to enhance productivity, reduce labor costs, improve safety, and enable innovative solutions in complex or hazardous environments.

According to the World Robotics report presented by the International Federation of Robotics, operational stock of industrial robots is expected to reach 3788 thousand units by 2021. According to the RIA’s data, 35,880 robots were shipped, in 2018, to Canada, along with the United States and Mexico, an increase of 7% from the previous year.

Market Dynamics:

Driver:

Rising adoption of Collaborative Robots (Cobots)

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Cobots are perfect for companies of all sizes because of their safe, adaptable, and simple programming features. Additionally, advancements in AI and machine learning enhance the capabilities of cobots, enabling them to perform complex tasks. Cobot adoption is also fuelled by the need for automation in the manufacturing, shipping, and healthcare sectors. Cobots are becoming more and more popular as industries want to cut labor expenses and increase operational efficiency.

Restraint:

Lack of skilled workforce

The rapid advancement of robotics technologies requires specialized knowledge and expertise, which is in short supply. Many industries face challenges in finding and retaining qualified personnel to operate, maintain, and program robotic systems. Additionally, the gap in skills can lead to increased operational costs and delays in the implementation of robotics solutions. Investment in educational and training initiatives is necessary to address this problem and create a workforce with the necessary skills to serve the expanding robotics sector. The lack of skilled workers remains a critical barrier to the widespread adoption of robotics technology.

Opportunity:

Growing E-commerce and logistics sector

The increasing demand for online shopping and fast delivery services drives the need for automation in warehouses and distribution centers. Robotics solutions, such as automated guided vehicles (AGVs) and robotic sortation systems, enhance the efficiency and accuracy of logistics operations. The integration of AI and IoT technologies further optimizes supply chain management and inventory control. As the e-commerce sector continues to expand, the adoption of robotics technology in logistics is expected to grow rapidly. This trend offers substantial growth opportunities for robotics technology providers.

Threat:

Limited flexibility in some applications

Robots are great at repeated, predetermined activities, but they can find it difficult to do tasks that call for flexibility and intricate decision-making. Conventional robotic solutions

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might not be sufficient for industries that demand a high degree of customisation and unpredictability. Furthermore, incorporating robots into current procedures might be expensive and difficult. Robotics hardware and software must continuously progress to increase flexibility and variety in order to defeat this danger. Adaptability to a wide range of applications is essential for the robotics technology market's continued expansion.

Covid-19 Impact

The Covid-19 pandemic has had a profound impact on the robotics technology market. The pandemic accelerated the adoption of automation and robotics due to labor shortages and safety concerns. The increased demand for contactless operations and remote monitoring further boosted the robotics market. However, supply chain disruptions and economic uncertainties during the pandemic posed challenges for the industry. Despite these challenges, the pandemic underscored the importance of robotics in enhancing operational resilience and efficiency.

The industrial robots segment is expected to be the largest during the forecast period

The industrial robots segment is expected to account for the largest market share during the forecast period, due to their versatility and ability to perform a wide range of tasks in manufacturing, automotive, and electronics industries. The demand for high precision, speed, and productivity drives the adoption of industrial robots. Additionally, advancements in robotic technologies, such as collaborative and AI-powered robots, further enhance their capabilities. The significant market share of industrial robots highlights their critical role in modernizing manufacturing processes.

The agriculture segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the agriculture segment is predicted to witness the highest growth rate, due to the increasing need for precision agriculture and automation to enhance productivity and reduce labor costs. The integration of AI and IoT technologies enables farmers to optimize resource usage and improve crop yields. Government initiatives to promote smart farming practices further drive the adoption of robotics in agriculture. The high CAGR reflects the growing importance of robotics in addressing the challenges of modern agriculture.

Region with largest share:

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During the forecast period, Asia Pacific region is expected to hold the largest market share, due to the region's rapid economic growth and expanding industrial base. Countries like China, Japan, and South Korea are major contributors to the robotics technology market. The presence of leading robotics manufacturers and increasing investment in automation drive the market's growth in the region. Additionally, government initiatives to promote Industry 4.0 and smart manufacturing further support the adoption of robotics.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, owing to the rapid adoption of advanced robotics technologies in various industries. The region's developed healthcare infrastructure and growing senior population drive the demand for medical robots and assistive technologies. Additionally, the increasing focus on automation and digitalization in manufacturing and logistics sectors contributes to market growth. The presence of leading technology companies and research institutions further accelerates innovation in robotics in this region.

Key players in the market

Some of the key players profiled in the Robotics Technology Market include ABB Ltd., KUKA AG, Fanuc Corporation, Yaskawa Electric Corporation, Universal Robots A/S, iRobot Corporation, Teradyne Inc., Boston Dynamics, Honda Motor Co., Ltd., Siemens AG, Epson Robots, Denso Corporation, Comau S.p.A., Rockwell Automation, Inc., and Adept Technology.

Key Developments:

In January 2025, ABB is acquiring Sensorfact BV, a fast-growing energy management company headquartered in Utrecht, Netherlands. The acquisition further expands ABB’s digital energy management offering and is expected to close in Q1 2025. Financial terms were not disclosed.

In January 2025, Yaskawa Electric Corporation announces that the Company signed a MOU with Astellas Pharma Inc. to start discussion to build an innovative cell therapy platform by combining robotics and pharmaceutical technologies. The MOU is a legally non-binding agreement on a partnership between the two companies, and specific discussions will proceed.

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Types Covered:

- Industrial Robots
- Service Robots
- Collaborative Robots
- Mobile Robots
- Humanoid Robots
- Other Types

Components Covered:

- Software
- Hardware
- Services

Technologies Covered:

- Industrial IoT (IIoT)
- AI and Machine Learning in Robotics
- Vision Systems and Sensors
- Cloud Robotics

Applications Covered:

- Manufacturing

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- Healthcare
- Logistics & Warehousing
- Agriculture
- Food & Beverage
- Retail
- Construction
- Other Applications

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe

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- Asia Pacific
  - Japan
  - China
  - India
  - Australia
  - New Zealand
  - South Korea
  - Rest of Asia Pacific
- South America
  - Argentina
  - Brazil
  - Chile
  - Rest of South America
- Middle East & Africa
  - Saudi Arabia
  - UAE
  - Qatar
  - South Africa
  - Rest of Middle East & Africa

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What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Contents

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5 GLOBAL ROBOTICS TECHNOLOGY MARKET, BY TYPE

6 GLOBAL ROBOTICS TECHNOLOGY MARKET, BY COMPONENT

7 GLOBAL ROBOTICS TECHNOLOGY MARKET, BY TECHNOLOGY

8 GLOBAL ROBOTICS TECHNOLOGY MARKET, BY APPLICATION

+357 96 030922
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9 GLOBAL ROBOTICS TECHNOLOGY MARKET, BY GEOGRAPHY

+357 96 030922
info@marketpublishers.com

10 KEY DEVELOPMENTS

11 COMPANY PROFILING

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List Of Tables

LIST OF TABLES

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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