# Global Professional Service Robots Market - Focused Inisghts 2025-2030

Market Report | 2025-05-02 | 112 pages | Arizton Advisory & Intelligence

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**Report description:**

The global professional service robots market is expected to grow at a CAGR of 25.61% from 2024 to 2030.

RECENT VENDOR ACTIVITIES

-August 27, 2024, FANUC America unveils the R-50iA, the world's first robot controller with built-in cybersecurity features. Designed to optimize industrial robot performance, the controller includes advanced security protocols alongside AI-driven enhancements, offering improved precision, reliability, and data protection in industrial automation applications.
-On March 13, 2024, SoftBank Robotics collaborated with Yo-Kai Express to expand the deployment of autonomous cooking robots in Japan. Yo-Kai Express has already introduced its robotic ramen vending systems in public transport hubs such as train stations, airports, and highways. With SoftBank Robotics overseeing distribution in Japan, the initiative aims to scale up deployment in offices, hotels, and commercial spaces while improving service quality.

KEY TAKEAWAYS

-By Product Type: The autonomous robots segment accounted for the largest market share in 2024, driven by their widespread applications in the supply chain, healthcare, and defense & security.
-By End-Users: The medical & healthcare segment shows the highest compound annual growth rate of 26.98%, as robotic surgery systems are offering precision and reducing recovery times, becoming a standard tool in operating rooms.
-By Geography: The APAC region dominates and holds the largest global professional service robots market share, due to rapid growth in robotic automation across industries such as logistics, healthcare, and agriculture.
-Growth Factor: The global professional service robots market is set to grow due to an increase in efficiency & productivity and a rise in shortage of skilled workforce.

MARKET TRENDS

Growing Technological Advancements in Sensors & Connectivity

Continuous improvements in LiDAR (Light Detection and Ranging)-a sensing technology that uses laser beams to measure distances and create detailed 3D maps of the environment-vision systems, and 5G connectivity are enhancing robotic precision, response times, and environmental awareness. Example: In the automotive sector, robotic arms equipped with high-resolution vision systems perform precise welding and assembly, reducing production errors and increasing efficiency. LiDAR technology enables robots to accurately map their surroundings, improving navigation in industries like logistics, agriculture, and autonomous vehicles. Advanced vision systems allow robots to detect objects, distinguish between materials, and identify defects during quality control. Example: In electronics manufacturing, robots with AI-powered vision systems inspect circuit boards for flaws, improving product reliability. 5G networks enhance real-time communication, enabling remote operation and reducing latency. Example: Ericsson and ABB have partnered to develop 5G-enabled factories where robots coordinate tasks efficiently, minimizing downtime and boosting production speed.

Rising Integration of AI & ML (Machine Learning)

Robots are becoming more autonomous by using Artificial Intelligence (AI) and machine learning to make real-time decisions, learn from data, and optimize efficiency. Example: AI-driven robots in warehouses predict demand patterns and adjust inventory movement accordingly, reducing delivery times. AI enables robots to analyze historical and real-time data, identify trends, detect anomalies, and predict maintenance needs. Example: In predictive maintenance, AI-powered robotic arms in car manufacturing identify potential faults before they cause production delays. AI-powered robotic assistants enhance precision in healthcare. Example: The da Vinci Surgical System assists in complex surgeries, providing unmatched accuracy and minimizing human error. AI-driven robotic process automation (RPA) streamlines logistics operations. Example: Amazon's AI-based warehouse robots automate picking, sorting, and packing tasks, increasing efficiency and reducing costs.

MARKET DRIVERS

Rise in Shortage of Skilled Workforce

Labor shortages are increasing the demand for automation as companies struggle to find skilled workers, especially in sectors like manufacturing, logistics, and healthcare. For example, the aging workforce in industrialized nations is reducing the availability of skilled technicians for machine operations, prompting companies to invest in robotics to maintain productivity. High employee turnover and rising labor costs are pushing businesses to adopt robots that can handle repetitive and complex tasks efficiently. For instance, in the logistics industry, companies like Amazon and DHL have integrated autonomous robots to manage warehouse operations due to workforce constraints. The growing gap in technical expertise required for advanced robotics is driving greater reliance on automation to bridge this skill shortage. This trend is particularly evident in sectors such as healthcare, logistics, and hospitality, where companies are increasingly adopting professional service robots to enhance efficiency and maintain operational continuity without solely depending on human labor.

Increase in Efficiency & Productivity

Automation enhances operational efficiency by eliminating human errors and ensuring consistency in repetitive tasks. For example, industrial robots used by companies like FANUC and ABB in automotive manufacturing assemble components with high precision, significantly reducing defects. Data collection and AI-driven decision-making improve overall productivity, enabling predictive maintenance and real-time adjustments in production lines. Siemens' AI-driven automation systems in smart factories optimize manufacturing processes by analyzing sensor data to prevent equipment failures. Robots operate continuously without breaks, increasing output and reducing downtime. This is particularly beneficial in sectors like food processing, where automated systems from companies like KUKA can package and sort products at a higher speed than human workers. Automation in

customer service and retail has enhanced efficiency, reducing waiting times and improving service quality. For instance, SoftBank Robotics' humanoid robot, Pepper, is used in banks and retail stores to assist customers, streamline operations, and enhance customer experience.

## INDUSTRY RESTRAINTS

### High Initial Investment Costs

Purchasing professional service robots involves high upfront costs, including hardware, software, and integration expenses, making it difficult for small and medium-sized enterprises (SMEs) to afford automation. Businesses often need to modify their existing infrastructure to accommodate automation, requiring additional investments in sensors, connectivity, and safety measures. Employees require specialized training to operate and maintain robots, increasing indirect costs and extending the learning curve. The high initial expenditure may not yield immediate returns, especially for industries where automation benefits are realized over a long period. Many companies struggle to secure funding or loans for robotic investments due to the perceived risks and high capital requirements.

## PROFESSIONAL SERVICE ROBOTS MARKET SEGMENT INSIGHTS

### INSIGHTS BY PRODUCT TYPE

The global professional service robots market by product type is segmented into autonomous robots and non-autonomous robots. In 2024, the autonomous robots segment accounted for the largest market share. Autonomous robots are self-operating machines that function without human intervention, using artificial intelligence, sensors, and machine learning algorithms. The segment is growing rapidly due to their widespread applications. In supply chains, autonomous robots optimize inventory management, reduce costs, and enhance scalability using AI and machine learning, driving efficiency in logistics. In agriculture, they revolutionize precision farming, crop monitoring, and automated harvesting, addressing labor shortages and boosting yields, contributing to market growth. In defense and security, autonomous robots are critical for reconnaissance, bomb disposal, and surveillance in high-risk environments, fueling market expansion in these areas. Each of these sectors is driving growth in the autonomous robots segment of the global professional robots market.

### INSIGHTS BY END-USERS

The global professional service robots market by end-user is categorized into transportation & logistics, medical & healthcare, hospitality, agriculture, and others. The medical & healthcare segment shows significant growth, with the fastest-growing CAGR of 26.98% during the forecast period, driven by advancements in robotic technologies across various applications. Robotic surgery systems offer precision and reduce recovery times, becoming standard tools in operating rooms and significantly improving patient outcomes. Rehabilitation robots assist patients in regaining mobility, particularly after spinal cord injuries and strokes, enhancing the recovery process. Diagnostic robots use AI to analyze medical images and identify potential health issues, increasing the speed and accuracy of diagnoses. Disinfection robots reduce infection risks in hospitals by using UV-C light to sanitize environments, ensuring higher safety standards. Lastly, telemedicine robots enable remote consultations, allowing real-time doctor-patient interactions and expanding access to healthcare, particularly in underserved areas. These innovations are driving the rapid expansion of the medical & healthcare robots market.

## GEOGRAPHICAL ANALYSIS

The APAC region dominates and holds the largest global professional service robots market share. The rising demand for automation in the region is largely fueled by severe labor shortages and an aging population, which is driving the need for robots

beyond traditional industries. These demands extend to sectors like schools, hospitals, nursing homes, and public spaces like train stations. The APAC region also benefits from a strong presence of leading robotics companies and startups, especially in China, Japan, and South Korea. Additionally, the growing demand for service robots in sectors such as hospitality, retail, and public assistance across emerging economies like India and Southeast Asia is further accelerating the growth of the professional robots market in the region.

COMPETITIVE ANALYSIS

The global professional service robots market report consists of exclusive data on 23 vendors. Key players compete based on technological innovation, automation capabilities, and industry-specific applications. ABB excels in industrial automation and collaborative robotics, leveraging AI-driven solutions for sectors like logistics, healthcare, and manufacturing. Exail, focuses on autonomous maritime and defense robotics, competing with specialized players in underwater and surface vehicle automation. SoftBank Robotics Group leads in humanoid and service robots, with products like Pepper and Whiz, targeting hospitality, retail, and healthcare automation. Honda Motor, known for its ASIMO humanoid robot and mobility innovations, remains a strong competitor in assistive robotics and AI-driven automation. FANUC, a dominant force in industrial and logistics robotics, competes through advanced AI, automation, and high-precision robotics for manufacturing and warehousing.

Key Vendors

- ABB
- Exail
- SoftBank Robotics Group
- Honda Motor
- FANUC

Other Prominent Vendors

- Ricoh
- Boston Dynamics
- Gecko Robotics
- OhmniLabs
- Knightscope
- Hanson Robotics
- Richtech Robotics
- Tesla
- Figure
- Omron
- Geekplus Technology
- Mobile Industrial Robots
- Clearpath Robotics
- Starship Technologies
- SubUAS
- Diligent Robotics
- PadBot
- Alpha Robotics

SEGMENTATION & FORECASTS

-By Product Type
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oNon-Autonomous Robots
-By End-Users
oTransportation & Logistics
oMedical & Healthcare
oHospitality
oAgriculture
oOthers
-By Geography
-APAC
oChina
oJapan
oSouth Korea
oIndia
-North America
oUS
oCanada
-Europe
oGermany
oUK
oFrance
oItaly
-Latin America
oBrazil
oMexico
oArgentina
-Middle East & Africa
oTurkey
oSaudi Arabia

KEY QUESTIONS ANSWERED:

1.How big is the global professional service robots market?
2.Which product type has the largest share in the global professional service robots market?
3.What are the latest trends in the global professional service robots market?
4.Which end-user provides more business opportunities in the global professional service robots market?
5.Who are the key players in the global professional service robots market?

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