

Data Center Robotics Market Assessment, By Component [Software, Service, Hardware], By Industry Vertical [IT & Telecom, BFSI, Education, Healthcare, Real Estate, Retail & E-commerce, Others] By Region, Opportunities and Forecast, 2016-2030F

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Abstracts

Global data center robotics market has witnessed substantial expansion in recent times and is anticipated to sustain a robust growth trajectory in the upcoming years. Following its attainment, the market's estimated value in 2022 is USD 8.52 billion, and the market is projected to achieve a valuation of USD 31.4 billion by 2030. This projection highlights a CAGR of 17.7% from 2023 through 2030.

Data center robotics bring automation, efficiency, and reliability to data management. They enhance resource utilization, reduce human error, lower operational costs, and ensure 24/7 uptime, resulting in improved data center performance and productivity. Factors impacting the global data center robotics market include technological advancements, increasing data center complexity, demand for efficient resource management, cost savings, and the pursuit of streamlined operations, thereby driving substantial growth and adoption of robotics in the sector.

One of the most prominent examples of technological advancements is the development of autonomous robotic systems. As per Data Center Magazine, by means of self-driving technology, these robots autonomously map & navigate data centers to provide real-time sensor data. It in turn, permits them to make a comparison between the already established norms and the current patterns so that any distinction, if spotted, can be escalated for human analysis. Hence, it can be delineated that autonomous robots can provide the decision-makers with accuracy, multidisciplinary intelligence, and speed which is much more than a static camera's capabilities.



Uptake of Cloud Services in the IT & Telecom Sector Augments Market Growth

The Global data center robotics market has seen a notable uptick in adopting cloud services in the IT and telecom sectors. This trend is propelled by the compelling benefits of cloud technology, including enhanced scalability, cost-efficiency, and streamlined accessibility. As the industry strives for agile operations, seamless remote collaboration, and innovative solutions, the integration of cloud services has become pivotal. This surge underlines the sector's acknowledgment of cloud technology as a pivotal enabler, aligning with the demands of digital transformation and bolstering the capabilities of data center robotics within a dynamically evolving technological landscape.

As per Zippia, cloud services adoption has seen a substantial increase in the United States, with approximately 94% of organizations employing them. Moreover, nearly 67% of enterprise infrastructure has transitioned to cloud, and approximately 92% of businesses are either implementing or planning a multi-cloud strategy.

Artificial Intelligence is Propelling the Market Growth

The emergence of Artificial Intelligence technologies has significantly impacted the global data center robotics market. AI has enabled data center robots to enhance their capabilities in automation, predictive maintenance, and real-time analytics tasks. These AI-driven advancements have led to increased efficiency, reduced downtime, and better resource utilization within data centers. Moreover, AI-powered robotics have paved the way for intelligent decision-making, enabling data centers to adapt swiftly to changing demands and complexities in a highly interconnected environment, fueling market growth.

For example, the United States based Data Center, Frontier delineated that in recent months, there has been substantial excitement surrounding AI, a technology poised to bring transformative changes across various industries, some of which are unforeseeable. In the realm of data centers, AI is anticipated to have a significant impact, yet specific applications and advancements are still in the process of development.

Rise in the Adoption Rate of Robotic Process Automation to Cater Extensive Opportunities



Global data center robotics market has witnessed a substantial rise in the adoption of robotic process automation. This surge is attributed to RPA's capacity to automate complex data center tasks, improving operational speed, precision, and cost-effectiveness. Moreover, RPA's ability to manage repetitive processes and its compatibility with existing systems have driven its integration. Furthermore, organizations within the data center sectors increasingly leverage RPA to enhance resource allocation, mitigate errors, and elevate overall efficiency. This escalating adoption reflects RPA's pivotal role in shaping the future of data center operations, fostering agility and innovation in a technology-driven landscape.

As per Flobotics, around 80% of the financial leaders have already used or are planning to use RPA, and 78% of those who have already implemented RPA anticipate a substantial increase in their RPA investments over the coming three years.

North America is Leading the Growth of the Global Data Center Robotics Market

North America comprehensively leads the market growth and is expected to do so over the years. North America's leadership in the growth of the global data center robotics market is attributed to its robust technological infrastructure, substantial investments in research and development, and early adoption of automation in the United States. These factors have facilitated innovation, market demand, and the creation of a favorable ecosystem for integrating and advancing data center robotics technologies.

For example, in May 2023, Reno Gazette Journal, revealed that Novva Data Centers, located in Utah and specializing in colocation data centers, constructed its latest facility at the Tahoe Reno Industrial Center, incorporating the use of robotic dogs. Notably, the facility's security measures were intriguing. Alongside 24-hour monitored perimeter gates, Novva Tahoe Reno employed autonomous aerial drones and robotic dog surveillance. The robotic dog would verify the occupants through facial scanning and recognition and oversee the temperatures to ensure accurate data storage.

Government Initiatives

Government initiatives play a crucial role in the data center robotics market. They provide essential support and direction for research, development, and adoption of robotics solutions. Such initiatives foster innovation, investment, and collaboration between industry and government bodies, ensuring alignment with regulatory frameworks and technological advancements. By promoting standards, training, and funding opportunities, governments can accelerate the growth of the data center



robotics market, enhancing its efficiency, sustainability, and overall contribution to the economy.

For example, in December 2022, the Japanese government supported NTT Data, concluding a pivotal trial involving a unique robot within a data center environment. The achievement has prompted the company to introduce the robot across its 15 Japanese facilities, thereby preparing it for commercial use. The deployed robot, resembling a torso on wheels, comes furnished with arms, basic grippers, and an array of sensors for tasks like remote monitoring and inspections. Trials, conducted at the Shinagawa Data Center from August to November 2022, demonstrated reductions in work hours and facilitated remote operations.

Impact of COVID-19

The global data center robotics market underwent significant changes due to the COVID-19 pandemic, impacting its pre- and post-COVID phases. Before the pandemic, the market was gradually acknowledging the potential of robotics in improving efficiency, reducing human involvement, and enhancing data center management. However, with the onset of COVID-19, the industry experienced a rapid transformation. Lockdowns exposed vulnerabilities in traditional setups, emphasizing the need for adaptable solutions. It led to increased adoption of robotics for tasks such as maintenance, security, and sanitation, thereby reducing human interaction and ensuring uninterrupted operations. Moreover, despite initial supply chain disruptions, the post-COVID period saw a surge in robotics integration, driven by the understanding that automation can mitigate future risks. The market is witnessing increased investments, innovations, and a shift toward remote monitoring. This shift is set to shape the future of the data center robotics market, ushering in an era of improved efficiency and resilience.

Key Players Landscape and Outlook

Significant advancements are occurring in the global data center robotics market, as prominent industry participants are concentrating on broadening their operations across extensive geographical areas through substantial investments. Moreover, this evolution highlights the market's dedication to harnessing advanced technologies to enhance data center robotics practices on a global scale.

In June 2023, NTT Corporation inaugurated a hyperscale data center campus in Chennai, coinciding with deploying the Myanmar-Malaysia-Singapore-India Transit



(MIST) subsea cable system in the same location. With committed USD 150 million to the facility, the company anticipates an additional investment of USD 150 million in the subsequent phase.

On March 2023, ABB Ltd. announced that it would expand its robotics factory in the United States. ABB has decided to invest a hefty amount of USD 20 million to facilitate its robotic industry production at its existing Auburn Hills facility to strengthen its leadership with the United States. Moreover, this growth will lead to the establishment of 72 new highly skilled jobs in the region.



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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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