IFR statistical department

World Robotics

Service Robots

2024

incl. Mobile and Medical Robots

Statistics, Market Analysis and Case Studies

one market

World Robotics 2024 – Service Robots
incl. Mobile and Medical Robots

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Executive Summary World Robotics 2024 - Service Robots

The service robot industry is more diverse and less tangible than the industrial robot industry. IFR Statistical Department is currently aware of 921 service robot producers worldwide. This excludes prototyping services and system integrators. Many companies are still in the funding or prototyping stage and intend to offer a marketable product in the future.

In 2023, worldwide sales of professional service robot grew by 30%, medical robots by 36%. More than 205,000 of units professional service robots and more than 6,100 units of medical robots sold were registered by the IFR Statistical Department. The size of the RaaS fleet grew by 24% to more than 7,700 units.

Mobile robot solutions are already established in **transportation and logistics** (AP5) with 35% more units sold in 2023. More than every other professional service robot sold in 2023 was built for the transportation of goods or cargo. The RaaS fleet grew by 20% to more than 5,000 units in 2023. **Hospitality** robots (AP8) enjoy growing popularity: More than 54,000 units (+31%) were sold in 2023. Robotics is an important part of digitalization in **agriculture** (AP1) with almost 20,000 units (+21%) being sold in 2023. Demand for **professional cleaning** robots (AP2) grew by 4%. Sales of almost 12,000 units were reported to the IFR Statistical Department. There is also a considerable RaaS fleet of 2,369 units (+29%). Another growing market is the application group of **search and rescue and security** robots (AP7). 3,475 sold robots (+12%) were reported for 2023. There are several robotic devices for **inspection and maintenance** (AP3) available, but the portfolio of robots that conduct inspection and maintenance tasks autonomously (see chapter 1.4 for the difference between robots and robotic devices) is still limited. In 2023, almost 400 units (+67%) were sold. Service robots for **construction or demolition** (AP4) tasks constitute a niche market. The application group has nevertheless enjoyed a considerable growth rate of 58% in 2023. In 2023, sales of **medical** robots (AP6) were increasing by 36% to almost 6,200 units. RaaS business models are uncommon in this segment. Medical robots will be discussed in chapter 3.

There is still an abundance of specific product opportunities to be taken up by companies, therefore creating an attractive commercial market worldwide. Today's service robotics market is composed of many niche products for professional services and a few high-volume applications both for professional and domestic use. Pioneers in the field of service robotics stress the significant opportunities for new companies entering this growth market with innovative products beyond the occasional robotics hype. Service robots for professional use are extremely diverse since they are usually designed to perform a specific task. Cost-benefit considerations from an end-user's viewpoint are the main factor with respect to investment in such systems in addition to contributing to qualified and safe jobs. Although service robots are as diverse as their applications, three design categories can be distinguished: Modification of industrial robot components (e.g. automated warehousing and medical robots), use of advanced robot technology for the upgrading of high-end systems of existing product lines with

automation functions. (e.g. cleaning, inspection), and new robotic designs “from scratch” (e.g. window cleaners, security robots).

The service robot industry is developing at a high pace with a lot of merger and acquisition activity. Many companies identify themselves as “deep tech”, meaning that they are willing to accept technological challenges during their product development phase to create technological advancement. Chapter 5 of World Robotics 2024 Service Robots offers an industry structure analysis of more than 900 service robot suppliers currently known to the IFR. This includes a full list of all companies and the applications they provide. **Customers of World Robotics Premium are able to download this list in Excel format**.

Although the service robotics industry is a young and growing industry, 92% of the suppliers are considered incumbents. This includes mature service robot suppliers as well as companies from other industries that added service robots to their portfolio. The 2010s saw a wave of new service robot manufacturers. Since then, the number of newly established companies steeply declined. IFR’s market observation suggests two reasons for the decreasing share: Some market segments have already achieved a level of maturity that sees companies growing, for instance AMRs for warehouse logistics. Sales of AMRs have been growing strongly for many years now and companies grew and became incumbents. Further, founding activities shifted away from the development of robot hardware. Many service applications are based on collaborative industrial robots, purchased from an industrial robot producer. The service robot supplier is therefore not considered a robot producer as the robot is purchased from a third party. These companies act like a system integrator, combining different components and developing software to create a solution.

Europe is the home of most service and medical robot producers,[1] hosting 405 companies (44%). Asia (268 companies) holds a share of 29% and 233 companies (25%) are from the Americas (almost exclusively North America). There are 15 companies from Australia and 2 from Africa. The top 5 home countries of service and medical robot manufacturers are the US with 199 suppliers, followed by China with 107 suppliers, Germany with 83 producers, Japan with 67, and France with 50 companies.

[1] Attribution of the company to a country and continent is done according to the location of the headquarter.