

World

Robotics

Service Robots

2026

incl. Mobile and Medical Robots



**Statistics, Market Analysis, List of Manufacturers and
Case Studies**

World Robotics Service Robots

2026

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World Robotics 2026 – Service Robots

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We express our most sincere gratitude to all partners!

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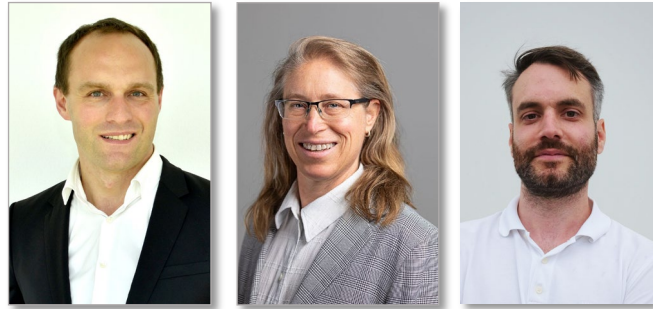
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Foreword



By: Dr. Werner Kraus, Head of the Research Division “Automation and Robotics”;
Dr. Birgit Graf and Kevin Bregler, Research Division “Automation and Robotics”

Dear Reader,

There are many global societal drivers for robotics. Perhaps the most significant one is the shortage of skilled workers. For example, a 2024 survey by the Man Power Group shows 75 percent of the more than 40,000 employers surveyed are having trouble finding the skilled workers they need. Physical AI and (service) robots can be a solution to this problem.

In the past, the service market primarily focused on specialized robot systems that performed a single task really well at a low cost. Currently, massive investments in multipurpose robots, mostly in the form of humanoid robots and with enhanced AI capabilities, can be observed. In 2025, for example, 2.65 billion USD was invested in startups in the field of humanoid robotics worldwide, which is more than the total invested from 2018 to 2024 combined.

However, the actual physical form is not necessarily human-like; instead, the AI can be embodied, for example, in a mobile platform: Almost every humanoid company now builds humanoids on a wheeled platform. There is a clear trend toward mobile dual-arm robots, thus not only one possible embodiment.

In any case, it is of great economic importance to many companies worldwide that they are able to better assess the technology behind humanoid robots and gain the knowledge needed to make informed decisions. This is because the marketing for humanoid robots often sounds more promising than the technology actually proves to be in specific use cases, be it in manufacturing or service industries or even in household scenarios. For this reason, the IFR and Fraunhofer IPA have chosen to focus on the topic of humanoid robotics this year in a completely new chapter.

Beginning with an introduction to the technology, it presents the first implemented applications, the fundamentals for flexible deployment, and current challenges. Readers thus gain a well-founded insight into this emerging technology, enabling them to best assess its potential applications. Whether these robots will become a game changer remains to be seen, but so far sales have been very limited. Nevertheless, they will form a technological foundation, and other robots will benefit from the rapid advancements in

AI, perception, and manipulation, which are also being developed for humanoids. Further, initial practical trials and pilot projects are already underway.

The existing chapter on construction robotics (AP 41) has also been completely rewritten this year. It gives an overview of the applications in this field and how robots are already being used: surveying and monitoring, material handling, layout and marking, earthworks, structural construction (3D printing, masonry, rebar work), drilling and installation, and finishing works (painting, plastering, sanding). Most robots are semi-stationary, stabilizing before task execution; continuous motion is found mainly in surveying and layout. The market shows clear trends toward Robot-as-a-Service models to lower entry barriers and the integration of Building-Information Modeling (BIM) for automated workflows. Further outcomes: single-task specialists are commercially more successful than multi-purpose platforms; Europe leads with a dense startup ecosystem; and acquisitions by established OEMs indicate growing market maturity.

Once again, there are three interviews with manufacturers of humanoid robots (Aeirobot, Neura Robotics, Apptronik) and three on construction and demolition robots (Fastbrick Robotics, SiteGeist, Automated Architecture) from around the world included in the chapters. The interviews give valuable insights into company strategies, market opportunities, and hurdles that need to be overcome to widen the usage of service robots in these applications.

Some findings from the interviews are the following:

Humanoid Robots:

1. Humanoid robots as response to structural challenges: All three companies develop humanoid robots to address labor shortages and enable seamless integration into human-designed environments – without costly infrastructure modifications.
2. Mature applications focus on industrial settings: The most commercially mature scenarios are in manufacturing and logistics (handling, sorting, machine tending, picking). Future deployments are expected in construction, shipbuilding, and healthcare.
3. Data scarcity is the central technical challenge: All firms identify high-quality training data as the critical bottleneck. Solutions vary: teleoperation with virtual reality, dedicated training environments, and AI partnerships with other companies.
4. Design for acceptance rather than human imitation: All manufacturers deliberately avoid the “uncanny valley”: they prefer humanoid proportions for functionality, but clear recognition as a machine without faces or emotion simulation to foster acceptance and intuitive interaction.
5. Market entry requires cost control and expectation management: Beyond technical hurdles (dexterity, reliability, safety), economic viability and realistic expectations are decisive. Advice to end users: start with the concrete problem, not with the technology, and understand the balance between hardware and software/AI.

Construction Robots:

1. Target specific, high-value pain points: Starting with a narrow, repetitive task where workers fatigue quickly and injury risk is high provides clear product-market fit. Overhead anchor drilling for mechanical, electrical, and plumbing installations is a common starting point.
2. Gradual autonomy over full autonomy: A stepwise path from guided assistance to partial to full autonomy, paired with a modular tool interface for quick customer-specific adaptations, is more realistic than targeting full autonomy at once in unstructured, variable site conditions. For example, an operator can position a platform while the arm drills automatically.
3. Outcome-as-a-Service accelerates development: Operating as a subcontractor rather than selling the robots outright enables rapid prototyping cycles and builds process expertise that feeds back into product design. Sitegeist takes this route too, deploying its robots directly with concrete-renovation contractors on live sites to validate and refine the platform before scaling. This is best framed as an early-stage maturation strategy, scaling can then shift toward equipment sales or rental.

Apart from the mentioned focus topics, the 2026 edition of “World Robotics Service Robots” presents figures and market data from the previous year. Supported by Fraunhofer IPA, IFR monitors 1001 companies worldwide that offer service robotics solutions (roughly 7% of them are start-ups). Both the professional and the consumer service robotics domain benefit from technical innovations like digitization, cloud technologies, 5G/6G, and artificial intelligence, specifically in the field of machine learning or Generative Pre-trained Transformer, which lead to technological advancements in service robotics. Recently, vision-language-action models have also been gaining attention, as is detailed in the chapter about humanoid robots. It is evident that generative AI has become an integral part of everyday working life – especially for software development, as software code is highly formalized and widely available on the web serving as training data.

“World Robotics Service Robots” has established itself as the widely acknowledged reference publication in statistics, forecasts, market analysis, and profitability of robot investments. Robot suppliers, media, government bodies, financial analysts, and technology scouts are among its readers. It specifically provides profiles of numerous service robot manufacturers worldwide. The many hyperlinks pointing to online resources encourage readers to further investigate topics of interest by looking into selected publications and company websites. We are indebted to our (current and former) colleagues for their valuable editorial work on the yearbook: Winfried Baum, Simon Baumgarten, Joshua Beck, Nikhil Srinath Betgov, Dr. Florenz Graf, Dr. Theo Jacobs, Florian Jordan, Max Kirchhoff, Dominik Moss, Cagatay Odabasi, Tobias Rainer Schaeffe, Ph.D., and Miriam Schmelzer. Furthermore, we highly appreciate the project lead of Dr. Anne Jurkat from IFR and the support from Dr. Karin Roehricht from

Fraunhofer IPA in preparing the report. Should you have any suggestions or further inquiries related to service robotics, please do not hesitate to contact us!

Best regards,

Dr. Werner Kraus, Dr. Birgit Graf, Kevin Bregler