

## Editorial

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Dear Reader,

Service robots are clearly on the rise. The past years, we have seen an increased focus on service robots for personal and domestic use as well as for industrial use, and according to IFR figures, the sales of professional service robots grew 85% in 2017 over 2016 to about 109,500 units, representing USD 6.6 bn in sales.

These impressive figures reflect how the industry typically is first-mover when it comes to adopting machines and robots, and service robots are today used in all types of industries from manufacturing to logistics.

Industry 4.0 and the Internet of Things (IoT) enable optimization, individualization and flexibility for production concepts, and the need for exactly those promises are today larger than ever for companies in all types of industries. Manufacturers are increasingly moving to mass customization models, where they must be able to quickly switch between a higher number of smaller batch sizes, which requires high flexibility and agility in the production. This need is supported by the capabilities of many service robots today. There has been a clear focus the past years of developing user-friendly robots that are easy to program and re-program, fast and simple to deploy and flexible. At the same time collaborative robots have become perhaps the largest trend in robotics; robots that can work safely alongside and with humans are today used in a wide range of industries. With these technological features, service robots follow the trends seen in collaborative industrial robots of versatile solutions with a low total cost of ownership and easy deployment.

### *The market asks for efficient logistics solutions*

63% of the total service robots for professional use were logistics robots such as autonomous mobile robots in 2017 and IFR expects the sales of logistics robots to increase to about 600,000 units between 2018 and 2021. At Mobile Industrial Robots (MiR), we are proud to be part of that development. These years' companies are realizing the great potential of automating in-house transportation. Manufacturing processes were early targets for automation but until recently even in highly automated facilities, material handling was often still a manual, inefficient process where employees spent valuable time pushing carts. Plant-setups are agile and dynamic, and people, equipment, pallets,

and other obstacles can appear in what used to be open passageways. Mobile robots fit these environments particularly well; with the collaborative, autonomous navigation, the automated material transportation is now flexible and easily adaptable without additional cost or disruption to processes, not to mention safe for operation around employees.

Large, multinational companies have been the early adopters of our robots and they are investing in continuously larger fleets of robots after a period of testing different applications and validating the economic benefits.

The adoption of mobile robots in SMEs has so far been relatively low. But learning from large companies, I am convinced that the increase in mobility, ease of programming and possibilities of integration into existing production processes alongside humans, makes it profitable for SMEs to invest in robots too and we will soon see the uptake of robots among SMEs rise.

#### *The future is collaborative and mobile*

The trends we are seeing today and that are the key to the high adoption of robots, will expand the coming years.

In particular, I believe that we will see how human-robot collaboration will continue to develop, and we will see how cobots in an even higher degree are used efficiently in repetitive, dangerous and precision tasks while their human colleagues are responsible for e.g. quality checks and programming. This is also the case for mobility. We will see mobile robots in more applications the coming years, and we will see how mobility will be combined with industrial robot arm like mobile conveyor belts are already used within many industries.

Another important trend is the use of AI in robotics. This will help robots be even smarter in the future, and the perception and applications of robots will be increased substantially when they can react on their learnings.

To conclude, I am very positive facing the future of service robots. Companies are looking for ways to automate efficiently and flexibly, and I am convinced that the market for service robots will increase significantly in the coming years as more companies become aware of the many benefits of versatile, user-friendly and cost-efficient automation. Now we need to seize the market opportunities and be ready for the upcoming boom.

Best Regards,

Thomas Visti