

Insight Report 2021 / Odense

Robotics industry amidst the pandemic



ODENSE
robotics
o Odense

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This report examines the robotics industry on Funen, Denmark, as it is based on data from the former Odense Robotics cluster on Funen. The regional cluster no longer exists as efforts are now part of Denmark's national robot and drone cluster, also called Odense Robotics.

Data, analysis and editorial by Odense Robotics.
February 2021 © Odense Robotics
Cover photo: SDU

Preface

It was a challenging economic environment in 2020 for the robotic, automation and drone industry globally and in the Odense area of Denmark. The coronavirus pandemic led to a global slowdown in manufacturing, which of course had a direct knock-on effect on the robotics industry. And with much of the world in lockdown, robotic companies' traditional commercial activities were put on standby almost overnight.

Despite this historically hard headwind, robotic companies in and around Odense have fared relatively well on the whole. **Not only has the industry succeeded in maintaining a status quo of 3,900 employees on Funen; it also expanded its workforce abroad by 26% in 2020 on the previous year.** Today, companies on Funen employ a total of 1,200 employees abroad. This growth in the midst of the pandemic indicates that companies are strengthening their commercial presence in key markets worldwide.

Another key performance parameter for the industry is investment. Here, figures show that investors' willingness to invest in future technologies is increasing. Investments of more than EUR 50 million were made last year in Funen-based robotic companies, bringing total investment since 2015 to more than EUR 860 million. It's fair to say that the robot, automation and drone industry on Funen continues to be a magnet for investors in Denmark and abroad.

There is no doubt that young scale-ups are amongst those companies most affected by the pandemic. **But how can the industry fare well overall amidst such turbulent times? The answer lies in the benefits of robotic technologies. Manufacturers, particularly in Asia, are turning to automation to remain competitive in this challenging environment.**

According to the World Robotics 2020 Industrial Robots report, the stock of industrial robots operating in factories worldwide is now at the highest level in history.

Rising demand for automation bodes well for robotics industry around Odense, which is home to global leaders within industrial automation, collaborative robots, mobile robots and professional service robots. Collaborative robots remain the fastest growing segment within industrial robots, signalling exciting growth opportunities for the Odense area's plethora of companies driving innovation within cobots and end-of-arm-tooling.

And while the pandemic has undoubtedly presented challenges for the industry, it has also brought opportunities. Here too, robots developed on Funen made valuable contributions in 2020.

Robots developed by companies in the Odense area have been deployed globally to disinfect hospitals and airports, facilitate social distancing on assembly lines, transport medicine in hospitals, enable patients in isolation to talk to doctors via telepresence. Also last year, a team of leading robotic researchers from the University of Southern Denmark developed the world's first fully automatic throat swab robot.

Predicting performance in 2021 is difficult, not least because nobody can foresee when the world will open up again. Yet the figures in this report coupled with the industry's strong global position give reason to be conservatively optimistic. Not least because robotics and drone technology are being deployed in a variety of new sectors. Sectors expected to see a rise in the adoption of robotics and drone technology include healthcare, agriculture, energy and construction.

Denmark's new national robot and drone cluster, established at the beginning of 2021, aims to strengthen innovation and growth across the country. Going forward, the cluster's analysis will not only examine the Odense area, as is the case in this report, but also will examine the entire industry nationally. Even though Denmark is a small country, we continue to punch above our weight.



Mikkel Christoffersen
CEO, Odense Robotics

Key findings



The industry

136 companies on Funen
43% of companies work in full or in part with collaborative and mobile robots
10+ research and education institutions

People



3,900 employees on Funen
1,200 employees abroad
4,900 employees in companies on Funen by 2022

Performance

70% of companies cite market access as a growth barrier

EUR 860+ million invested in companies since 2015

EUR 25+ million invested in StartUp Hub companies since 2015



THE INDUSTRY

Growing industry

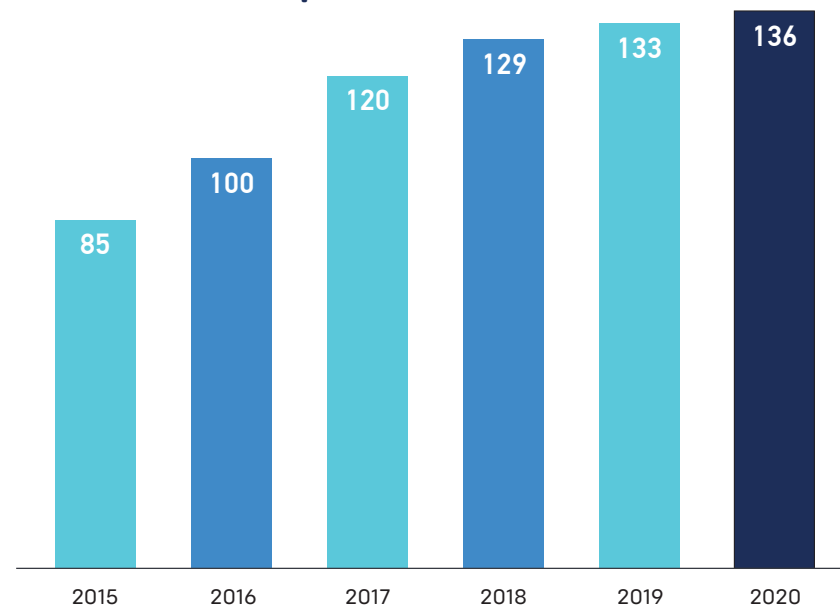
The robotics industry in and around Odense continues to grow, with new companies being established year on year.

The industry on Funen has grown steadily in terms of the number of companies in recent years, reaching 136 at the end of 2020. This represents a 60% increase since 2015.

The area's strong entrepreneurial environment means it is home to many young companies and startups. Indeed, the majority of companies in the area have been established in the past decade.

With strong support from the municipality and the cluster management team, the area offers prime conditions for growth and innovation to robotic startups.

Number of companies



Source: Odense Robotics, February 2021

136 companies
on Funen

60% increase
since 2015

Source: Odense Robotics, February 2021

THE INDUSTRY

Denmark's robotic industry

The robotics industry in and around Odense is part of a thriving nationwide robotics industry in Denmark, which is now internationally recognised as one of the world's leading robot nations.

In addition to the Odense area, the Aalborg, Aarhus, Copenhagen and Sonderborg areas are also home to leading companies and academic centres within robotics, automation and drone technology. Denmark's new national cluster for robotics and drones will establish regional hubs in these areas.

Denmark's robotics and drone industry comprises of around 300 companies and 8,500 employees.

292
companies



8,500
employees

Source: Damvad Analytics, 2019



Denmark's national robotics and drone cluster will establish regional hubs across the country.

GLOBAL STRONGHOLDS

Cobot capital of the world

The industry in and around Odense is a global stronghold for innovation and development within collaborative and mobile robots.

The Odense area is a global stronghold for collaborative and mobile robots. More than 40% of companies work with collaborative robots and/or mobile robots and related products.

The strong focus on collaborative and mobile robots stems from early pioneers Universal Robots (UR) and Mobile Industrial Robots (MiR), both global leaders in their field and headquartered in Odense.

The Odense area is also home to a plethora of companies creating new technologies that build on collaborative and mobile platforms developed in Odense, thereby extending functionality and creating new application areas.

For example, OnRobot and Nordbo Robotics offer end-of-arm tooling and software components that are compatible with cobots developed by UR. Likewise, ROEQ and Nord Modules offer top modules for MiR robots, enabling the mobile robot to perform multiple tasks in a warehouse or production line easily, efficiently and safely.

43% of companies work with collaborative and/or mobile robots or related products

Source: Odense Robotics, February 2021



In 2020, UR and MiR announced that they would build the world's largest 'cobot hub' in Odense with financial backing from their joint U.S. parent company Teradyne. The companies will share the 32,000 m² state-of-the-art offices, designed to support the companies' global growth journey and attract talent from all over the world.



Photo: ROEQ

GLOBAL STRONGHOLDS

Many global strongholds

Collaborative robots and mobile robots are not the only areas in which companies in the Odense area are at the forefront. Additional global strongholds include food automation, professional service robots as well as intralogistics and storage for hospitals and warehouses.

For example, companies such as Cabinplant, Egatec, Jorgensen Engineering and Sanovo Technology deliver automation packaging and processing solutions for the food industry worldwide. Other examples are automation solutions for hospitals, provided by companies such as Gibotech and EFFIMAT, designed to make make intralogistics, storage and picking more safe and efficient.

Professional service robots is a market segment expected to grow significantly in years to come and its potential has certainly come into the spotlight in 2020. The UVD Robot, developed by Blue Ocean Robotics in collaboration with Odense University Hospital, repeatedly made the headlines globally in 2020 after being deployed to disinfect in hospitals and airports worldwide.



Photo: Odense Robotics



Photo: EFFIMAT



Photo: UVD Robots

GROWTH

Workforce expands internationally

Amidst the pandemic, companies increased their workforce abroad by 26% in 2020. The workforce has grown steadily over the years and now totals more than 5,000 employees globally.

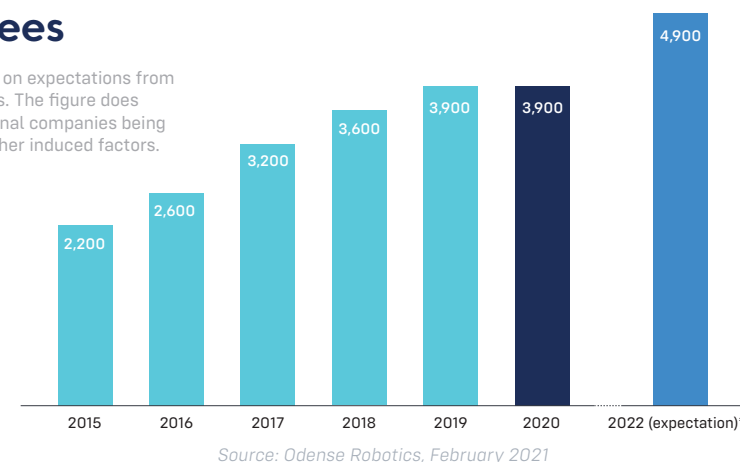
Amidst the pandemic, the industry expanded its workforce internationally by 26% in 2020 on the previous year. Today, companies on Funen employ a total of 1,200 employees abroad. This growth indicates that companies are strengthening their commercial presence in key markets worldwide.

The size of the workforce on Funen remained constant at 3,900 employees, the same figure as the previous year. Before the pandemic, forecasts predicted continued growth in the workforce in 2020. However, given the challenges facing many companies, it is remarkable that the industry overall has succeeded in retaining its workforce.

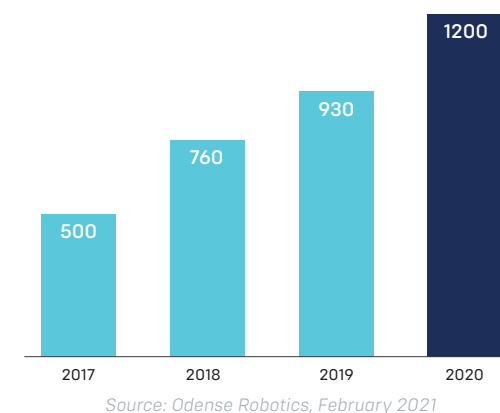
Companies have responded innovatively to challenges posed by the pandemic. Some have used 2020 as an opportunity to revise company strategy. Others have revised internal processes. A notable example is three automation companies – Cabinplant, Gibotech, Jorgensen Engineering – sharing employees in order to retain the workforce amidst turbulent and unpredictable times.

Number of employees

*) Growth is based on expectations from existing companies. The figure does not include additional companies being established and other induced factors.



Number of employees abroad



GROWTH

Growth barriers

Attracting talent continues to be a significant growth barrier. Market access has also become increasingly problematic for companies, as is to be expected during the pandemic.

Attracting talent has long been the greatest growth barrier for companies, with many struggling to attract engineers, developers and other candidates with a technical background. As many as 71% of companies say recruiting qualified employees is a growth barrier. While this represents a slight decrease on previous years, talent attraction continues to be a significant challenge.

Market access now also ranks amongst the greatest growth barriers for companies, as is to be expected during the pandemic. With the world more or less in lockdown, companies were unable to operate traditional commercial activities. Trade fairs were cancelled and customer visits postponed. Small scaleups, at the cusp of establishing export channels, were amongst those companies most impacted.

With traditional commercial activities on hold, many companies responded innovatively by digitalising their sales and service – often with such success that companies expect to continue the new approaches post pandemic. Universal Robots held virtual trade fairs, showcasing their technology to potential customers worldwide. Other companies developed digital service platforms. Robot at Work, for example, used virtual 3D models to instruct construction site workers on how to use their technology. In the future, the company expects to continue leveraging digital service to reach more customers internationally.

71% of companies
see talent as
growth barrier

70% of companies
see market access
as growth barrier

GROWTH

Investment magnet

More than EUR 860 million has been invested in Odense-based robotic companies since 2015. Total investments continued to grow last year, despite the pandemic.

The robotic industry on Funen has become a magnet for investors, who want to leverage the industry's significant growth potential. Investments are instrumental in facilitating new technical developments and enabling robotic startups and high-growth companies to fuel their expansion.

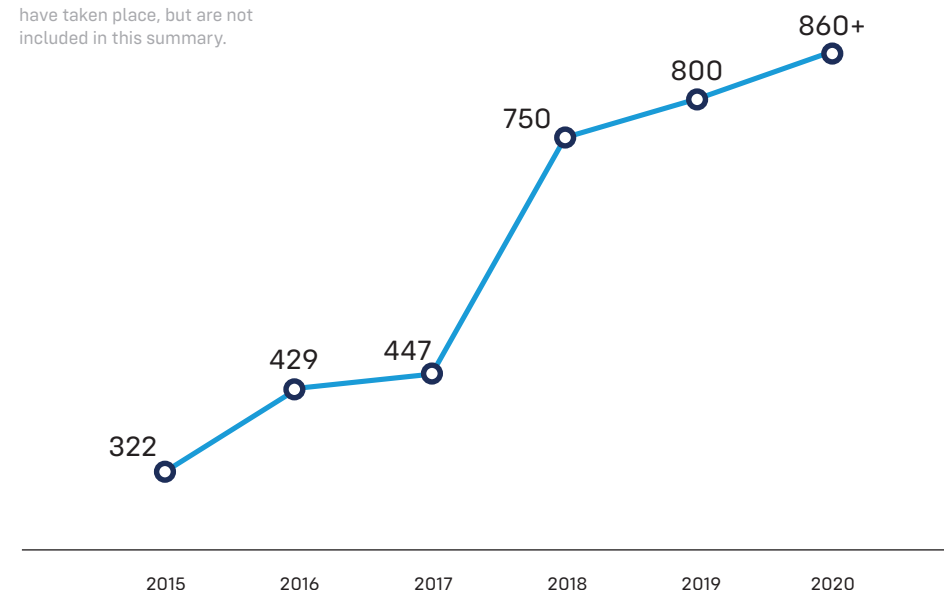
Investments of more than EUR 50 million were made last year in Funen-based robotic companies. Significant investments in 2020 include EUR 2 million to QuadSAT, securing the largest drone investment in Denmark, a round of EUR 25 million to OnRobot and EUR 16.5 million to Blue Ocean Robotics. This strong investment trajectory indicates that investors continue to foresee increasing global demand for robotics and automation.

Since 2015, more than EUR 860 million has been invested in Funen-based robotic companies. Syndication by Danish investors, public and venture funds were the primary sources of the incoming capital.

Exit capital being reinvested in the local ecosystem is a particularly interesting phenomenon, specific for the Odense area. This trend has been even more visible in 2020, with investments made by among others Esben Østergaard, Vækstfonden, Thomas Visti, Torben Frigaard Rasmussen, Lasse Kieffer and Enrico Krog Iversen.

Total investments in companies, EUR million

Note: Additional investments with undisclosed amounts have taken place, but are not included in this summary.



Source: Odense Seed and Venture, February 2021

STARTUP HUB

Leading European startup hub

Robotic and drone entrepreneurs grow their business at Odense Robotics StartUp Hub.

Odense Robotics StartUp Hub is recognised as one of Europe's leading robotic incubators. It is located at the 3,000m² specialist facility at the Danish Technological Institute, a leading research and technology company. Here, robotic and drone startups are joined by a team of business and technology experts that help turn technology into good business.

Many successful robotic and drone startups emerge from Odense Robotics StartUp Hub and stay in Odense as they continue to grow their businesses in domestic and international markets.

A total of 25 companies have been part of the Odense Robotics StartUp Hub since its inception in 2015 and the end of 2020. Today, these companies employ more than 150 full-time people. Since 2015, the 25 startups have secured more than EUR 25 million in external investments and more than EUR 6.5 million in equity-free soft money, without giving up any equity to the Hub.

More startups entered the Hub in 2021, and Fynbo Technology was the first to move in. The startup is developing a fully automatic three-finger gripper for use with end-of-arm-tools for industrial and collaborative robots.

25
startups

150+
employees

EUR 25+
million external
investments



ODENSE ROBOTICS

StartUp Hub

The Odense Robotics StartUp Hub was established in 2015 at the Danish Technological Institute in Odense. Since then, a total of 25 robotic and drone companies have been part of the Hub.



Methods



Scope

This report solely examines the robotics industry on Funen as it is based on data from the former Odense Robotics cluster on Funen. The regional cluster no longer exists as efforts are now part of Denmark's national robot and drone cluster, also called Odense Robotics.

The companies typically have strong links to the robot and automation sector through, for example, a dedicated strategic focus on the industry, a significant share of revenue from the industry, dedicated technology and/or actively collaborate in the cluster. The companies are located on the island of Funen, Denmark, either with a headquarters or a department.

Data sources

The report primarily uses quantitative analysis. It is based on data from Denmark's public Central Business Register as well as from an annual survey of cluster companies commissioned by the former regional cluster Odense Robotics and conducted by Wilke A/S. The survey was sent in October 2020 and 87 companies participated. The result is considered to be representative of the cluster as a whole, because responses were spread evenly in terms of company size and type.

Data on the number of companies and the extent to which companies work with collaborative and/or mobile robots or related products is based on market insights from the former regional cluster Odense Robotics.

The number of full-time employees on Funen and abroad is calculated by Wilke A/S based on the company survey and desk research. Future growth in the workforce is based on companies' own projections. These figures do not take into account additional companies being established in the future and other related factors. Figures for the number of employees have been rounded up to the next hundred.

Data relating to investments in companies is based on interviews by Odense Seed and Venture with investors, founders, CEOs and public data. Dates refer to the day deals were signed. Additional investments can have taken place without the knowledge of Odense Seed and Venture.

This report is available on Odense Robotics' website. Please state the source when using or referring to the material in this report.

About Odense Robotics

Odense Robotics is Denmark's national cluster for robot, automation and drone technology. Our vision is to make Denmark an even bigger, better robot nation. We do this by accelerating innovation and sustainable development in the industry. We offer companies opportunities to develop innovative products and technologies and strengthen their foundation for growth through projects, networks and events. Odense Robotics is a national cluster organisation with headquarters in Odense and regional hubs.

www.odenserobotics.com

