October 2022

ROBOTICS SECTOR REPORT

Deglobalization and nearshoring could support high growth this decade

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AGENDA

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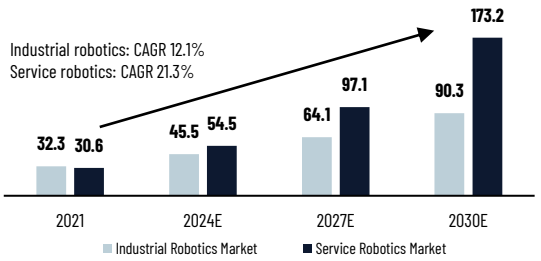
Why invest in the Robotics and Automation sector?

Current macro trends support the sector

The robotics and automation sector is already a fast-growing sector in Denmark as well as globally. Most market reports estimate that this will continue and perhaps even accelerate in the coming years. These projections are strongly supported by big macro trends such as deglobalization/nearshoring, labor shortages, and technological advances, broadening the capabilities and, thereby the total addressable markets.

Global robotics market growth



Source: [1]ReseachAndMarkets.com and [2]Verified Market Research

This report will provide insights into the fast-growing robotics sector and shed light on the development of valuations and metrics with a focus on the Danish robotics cluster. Lastly, we run through the investment case of three different Danish robotics companies on the last pages of the report.

Nearshoring – not possible without automatization

After 30 years of globalization, the COVID-19 pandemic increased pressure on global supply chains. The current geopolitical events and the underlying Chinese/US tech war support that the world could be more divided. As a result, global companies face increased pressure from macroeconomic uncertainties. Consequently, companies need to mitigate the risks by potentially moving production closer to their home market by reshoring/nearshoring their supply chain.

Moving the production and supply chain back to the more developed world can be costly, as labor shortages and increased manufacturing costs would create higher inflationary pressure. Therefore, companies need to increase the automation level throughout their supply/value chain to reduce this pressure.

Visualizations/AI – expanding the addressable market

With the technological development within AI and visualizations (3D vision), the sector has expanded its use cases of robots.

Cobots (collaborative robots) are one of the areas where robots can share space and collaborate with human workers. There has also been a revolution in the computer world, from IBM mainframes to personal PCs. The best-known cases in Denmark are Universal Robots and Mobile Industrial Robots (MiR). Both companies have been acquired by the US giant, Teradyne.

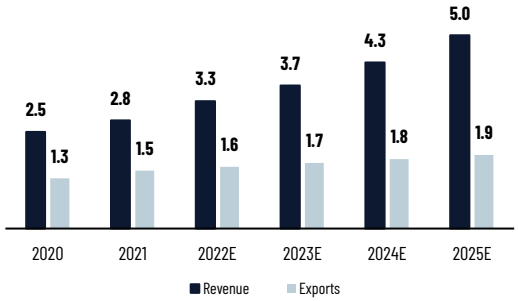
Another area is bin-picking, where 3D capabilities and software mean that robots can solve problems by handling randomly placed objects. An example of a sector, which has been underutilized with automation and robotics, is the distribution and logistics sector. Historically, this sector has been labor-intensive as differences in object sizes and processes have been challenging to automate. However, estimations value that new automation technology addresses a potential market of USD 230 billion.[3]

Strong Danish industry cluster – driver for continuing growth

The Danish robotics and automation cluster is known worldwide for developing solutions for collaborative robots, mobile robots, industrial automation, and professional service robots. A cluster means a supply of workers and innovation. This is especially important in an industry where new technologies such as cobots and AI/bin-picking solutions are still in the early phases in relation to market maturity.

Denmark's robotics and automation industry is already a large industry with total revenue of EUR 2.8 billion and exports of EUR 1.5 billion in 2021. Most companies report revenue growth between 5-15%, which is in line with CAGR rates for the industrial robotics market (12.1%), and growth is expected to continue.

Revenue and exports growth in Denmark (billion EUR)



Source: [4]Statistic Denmark and Odense Robotics

Secular trends support the growth

Besides being supported by the deglobalization trend and reshoring/nearshoring, the sector is also expected to play a key role in the best-known secular growth trend, namely the green transition and the movement to a circular economy.

The recently published report by Odense Robotics (Insights Report 2022) estimates that more than 80% of the Danish robotics and automation companies work strategically with the green transition and circular economy. In addition, almost the same proportion provide solutions to reducing their customers' carbon emission footprint. More than 30% of the Danish robotics and automation companies have customers in the wind industry, 27% have customers in energy efficiency, and the same amount within green agriculture and food production, according to Odense Robotics.

Robot solutions support the customers' green transition by

Improved resource consumption	• Robot solutions can reduce resource use by optimizing and streamlining the use of materials in the production
Energy efficiency	• Robot solutions have lower energy consumption and CO2 emission than traditional industrial processes
Preventing pollution	• By substituting polluting chemical processes with mechanic processes, automation makes chemicals less necessary
Contributing to recycling	• Potentially hazardous waste can be handled for reuse by robots, contributing to recycling of valuable resources

Source: [4]Odense Robotics and HC Andersen Capital

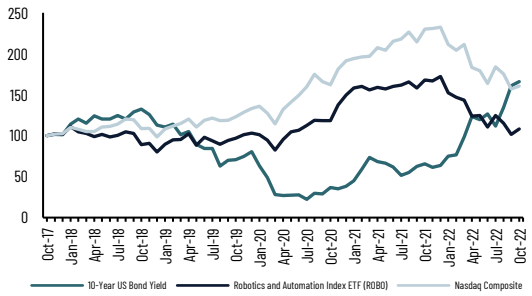
Robotics valuations in the public markets

Inflation, rate hikes, and uncertain supply chains – what does it mean for the robotics and automation sector?

2022 has already been a turbulent year for investors across the globe, with inflation running at levels not seen in 40 years, rate hikes, record-high energy prices, political uncertainty, and recession speculations. The graph below illustrates the correlation between the broad and global Robotics and Automation (ROBO) ETF, the 10Y US bond yield, and Nasdaq Composite to give investors a graphical picture of how rising interest rates have had a negative impact on valuations.

With a YTD performance of approx. -37%, measured by the ROBO ETF, the sector has underperformed the Nasdaq reference index, down approx. -31%. Besides being a growth sector, which has been hit by the increased interest rates, the sector has also been plaque by supply chain issues from cost inflation and delays in deliveries.

10Y US yield, ROBO Automation & Robotics ETF, Nasdaq Composite



Source: [5]Investing.com

Is yesterday's winner also tomorrow's winner?

Looking at a 5 years time horizon, the robotics and automation sector has underperformed most other growth themes. One reason is that the digitalization trend has been the dominating one in the last decade since The Global Financial Crisis. Furthermore, companies with exposure to digitalization are often software companies with fewer capital requirements and a more scalable business model with higher margins.

Performance of selected growth sectors

Return (%)	YTD	1 year	3 year	5 year
Cloud (SKYY)	-39.1	-44.2	10.8	48.4
GreenTech (INRG)	4.7	-4.7	93.3	131.8
Robotics (ROBO)	-37.2	-34.7	11.6	7.4
Reference: Nasdaq (IXIC)	-30.9	-29.1	31.1	64.8

Source: [5]Investing.com *We apply the earliest closing price for the Robotics ETF (ROBO) from 7 November 2017 (start date of the ETF). Updated on 27 October 2022.

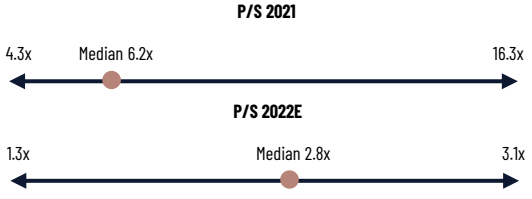
The green energy sector has the same problem as the robotics and automation sector regarding capital requirements, yet this sector has performed better. This may tell us that megatrends are running the world. Looking back at the 2010s, the highest return belonged to digitalization, yet there are some signs supporting a tectonic shift from now into the rest of the 2020s. As we described on the front page, deglobalization and nearshoring support real investments in the physical world. As a result, this somewhat supports that robotics and automation, together with the green transformation (and also supporting the green agenda), could be a future winner and a big driver of investments.

Nordic valuation perspectives (HCA Nordic Robotics sector)

For perspective, we have collected market data on a bunch of Nordic-listed growth companies within the automation and robotics sector, which are relatively small companies. Despite being hit by the general stock market uncertainty from increasing interest rates, companies are still traded at multiples that reflect future growth potential. Depending on several factors, including the technology, commercialization phase, geographical presence as well as the market and accessibility, shares are traded in a range between 4.3x P/S (2021) and 16.3x P/S multiple (2021) based on the current market value and last year's reported revenue. Looking at 2022 revenue guidance and current market cap, only a few companies have communicated guidance, yet the range is much lower following high expected 2022 growth rates, i.e., between 1.3x P/S (2022E) and 3.1x P/S (2022E) based on the midpoint in the companies' own guidance.

We acknowledge that creating a valuation framework across the sector is difficult, implying that companies should be carefully assessed individually. More data is provided on the next page.

Nordic Robotics growth companies (P/S 2021 and 2022E)



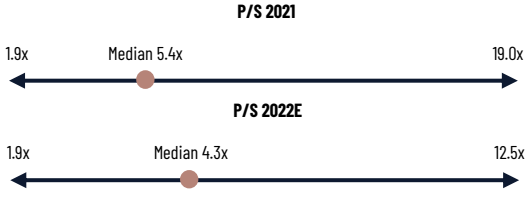
Source: Annual reports, Refinitiv, and HC Andersen Capital (HCA Nordic Robotics sector)

Global robotics valuation perspectives

For perspective, we have also collected market data on some of the largest international billion-dollar companies within the automation and robotics sector. See more on the next page. Many of these companies are included in the ROBO ETF, which is down approx. -37% YTD. Ideally, these companies should be measured on multiples such as EV/EBITDA, especially in light of investors' increasing focus on profitability in the uncertain financial markets. However, we have provided comparable and simple multiples, i.e., P/S (2021) and P/S (2022E) for perspective.

As seen below, the larger global robotics and automation shares are traded in somewhat the same ranges as the smaller high-growing Nordic companies. Shares are traded in a range between 1.9x and 19.0x (P/S 2021) with a median value of 5.4x. For 2022, the range of P/S (2022E) is between 1.9x and 12.5x with a median value of 4.3x (based on Refinitiv estimates for 2022), which is above the median value of 2.8x for the Nordic growth-oriented robotics and automation companies.

Global robotics companies (P/S 2021 and 2022E)



Source: Annual reports, Refinitiv, and HC Andersen Capital

Overview of selected listed Robotics companies

The table below summarizes key financials and an overview of listed Nordic growth-oriented robotics and automation companies with revenue of less than DKK 20 million in 2021. As the companies are relatively small, risks are higher, yet the companies also possess higher return potential, if the large-scale commercialization succeed. Note that there are many other robotics and automation companies in the Nordics than those shown below. Note also that market values and financials are converted to DKK. Each company's country of headquarter is shown in a parenthesis "()". Furthermore, there may be some differences in the accounting periods, making the overview less comparable. For perspective and simplicity, we apply the companies' most recent market values (we do not incorporate cash and debt) and divide this value with the companies' revenue in 2021 and its expected revenue for 2022 (midrange in their guidance or Refinitiv analyst estimates). The overall median value of the HCA Nordic Robotics sector across the Nordics is approx. 6x sales (2021) and approx. 3x sales (2022E), yet this is based on relatively few companies.

Nordic listed robotics and automation growth companies

DKKm	Market cap	Sales 2021	Sales 2022E	2021 growth (%)	2022 growth (%)	P/S (2021)	P/S (2022E)	EBITDA 2021
Odico (Denmark)*	62.9	14.7	22.5	43%	53%	4.3x	2.8x	-9.5
Bioservo Technologies (Sweden)	30.1	4.8	0.0	-39%	N/A	6.2x	N/A	-23.6
Ekobot (Sweden)	20.8	0.0	0.0	0%	0%	N/A	N/A	-4.6
Scape Technologies (Denmark)	31.4	7.2	10.0	414%	39%	4.4x	3.1x	-6.5
Shape Robotics (Denmark)	114.3	17.8	87.0	196%	390%	6.4x	1.3x	-15.5
Tendo (Sweden)	6.9	0.0	0.0	N/A	N/A	N/A	N/A	-1.0
Unibap (Sweden)	141.1	8.7	0.0	43%	-100%	16.3x	N/A	14.3
Average	**58.2**	**7.6**	**23.9**	**131%**	**95%**	**7.5x**	**2.4x**	**-6.6**
Median	**31.4**	**7.2**	**10.0**	**43%**	**46%**	**6.2x**	**2.8x**	**-6.5**

Note: We apply the closing price from 27 October 2022. *Odico's accounting period is from 1 July to 30 June. We apply 2021/2022 for 2021 numbers and 2022/2023 guidance (midrange) for 2022 numbers.
Source: Company reports and HC Andersen Capital. Note that there can be deviations from actual numbers.

The table below summarizes key financials and an overview of some of the largest robotics and automation companies in the world. These companies have market values ranging from approx. USD 6 billion to USD 84 billion and revenues in 2021 ranging from approx. USD 325 million to USD 29 billion. This implies that the global companies are less risky and more liquid to trade, however, growth rates are also expected to be lower. Many of the global companies have different business segments across industries, meaning that some companies are less exposed to the robotics and automation sector. Note that there are many other listed global robotics and automation companies than those shown below. Note also that market values and financials are converted to USD. Each company's country of headquarter is shown in a parenthesis "()". Furthermore, there may be some differences in the accounting periods, making the overview less comparable. For perspective and simplicity, we apply the companies' most recent market value (we do not incorporate cash and debt) and divide this value with the companies' revenue in 2021 and its expected revenue for 2022 (Refinitiv analyst estimates). The overall median value of the global robotics and automation sector, based on the screened companies below, is approx. 5.4x sales (2021) and 4.3x sales (2022E). We will also highlight that focusing on profitability valuation multiples such as EV/EBITDA, P/E, etc. would be more relevant to get valuation perspectives on the global companies shown below.

Global listed robotics and automation companies

USDm	Market cap	Sales 2021	Sales 2022E	2021 growth (%)	2022 growth (%)	P/S (2021)	P/S (2022E)	EBITDA 2021
ABB (Switzerland)	54,628.6	28,949.0	29,298.4	11%	1%	1.9x	1.9x	4,658.0
AutoStore (Norway)	6,204.4	325.8	590.2	80%	81%	19.0x	10.5x	20.7
Cognex Corporation (United States)	7,974.5	1,037.1	978.5	28%	-6%	7.7x	8.1x	335.4
Fanuc Corporation* (Japan)	27,963.7	5,201.2	6,530.1	11%	26%	5.4x	4.3x	1,487.1
Keyence Corporation (Japan)**	84,220.8	5,076.6	6,749.2	0%	33%	16.6x	12.5x	2,682.1
Rockwell Automation (United States)	27,895.0	6,997.4	7,762.8	11%	11%	4.0x	3.6x	1,341.6
Teradyne (United States)	12,487.7	3,702.9	3,089.1	19%	-17%	3.4x	4.0x	1,335.5
Average	**31,625.0**	**7,327.1**	**7,856.9**	**23%**	**19%**	**8.3x**	**6.4x**	**1,694.3**
Median	**27,895.0**	**5,076.6**	**6,530.1**	**11%**	**11%**	**5.4x**	**4.3x**	**1,341.6**

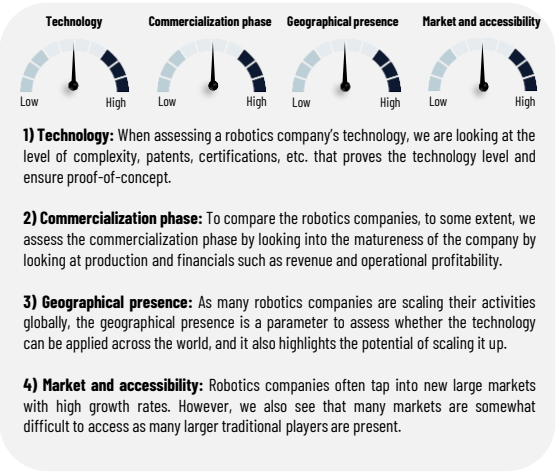
Note: Data is extracted from Refinitiv on 26 October 2022. *Fanuc Corporations' accounting period is from April to March. **Keyence Corporation's accounting periods end on 20 March.
Source: Refinitiv and HC Andersen Capital. Note that there can be deviations from actual numbers.

Company-specific HCA Robotics Growth assessment

Robotics HCA assessment criteria – how to assess Nordic growth-oriented Robotics companies

We have introduced a new robotics framework that provides an overall assessment of the Nordic growth-oriented robotics companies based on the criteria; 1) technology, 2) commercialization phase, 3) geographical presence, and 4) market and accessibility. We apply the same framework for smaller GreenTech companies to assess the technology, market, etc.

The framework is a qualitative and simple assessment that considers that the companies are relatively young, with a focus on growth, expanding their technology/solution, and presence in new markets. The purpose is to incorporate other factors than the financials, valuation, management, etc. of a company. Below is a short explanation of each assessment criteria, which will be unfolded further.



1) Technology: When assessing a robotics company's technology, we are looking at the level of complexity, patents, certifications, etc. that proves the technology level and ensure proof-of-concept.

2) Commercialization phase: To compare the robotics companies, to some extent, we assess the commercialization phase by looking into the matureness of the company by looking at production and financials such as revenue and operational profitability.

3) Geographical presence: As many robotics companies are scaling their activities globally, the geographical presence is a parameter to assess whether the technology can be applied across the world, and it also highlights the potential of scaling it up.

4) Market and accessibility: Robotics companies often tap into new large markets with high growth rates. However, we also see that many markets are somewhat difficult to access as many larger traditional players are present.

Technology: The level of technology has a significant influence on the attractiveness of robotics companies as well as valuation since many robotics companies have invested millions over many years to develop the technology and full solution. This means that companies with complex technology, and solving key problems, typically also are valued higher.

On the other hand, this also means that robotics companies with simple technologies and no patents often are valued lower. Obviously, a robotics company with a simple technology can more easily be copied by larger companies or new entrants with a significant capital position. A patent highlights that the technology or solution is protected, and more importantly, it keeps competitors away from the market. When looking at patents, it should also be ensured that the patents are protected for many years.

In practical terms, we also look at a company's proof-of-concept, and how it is applied and scaled in the current stage. There should also be several key advantages over traditional solutions, especially concerning cost savings and efficiency. A short payback time, for instance, supports the technology's attractiveness and measures the impact of the technology.

Looking at drawdowns, a too-complex technology, which is not ready for the market, can also be a problem. Based on that, the commercialization phase will shed light on whether the technology is commercialized, i.e., it generates significant revenues, and the solution is operationally profitable, which often can be hard to assess for early-stage companies in their current stages.

Commercialization phase: As mentioned before, the technology itself is a core part of the company. However, investors should also assess in which phase the robotics company is when looking into its commercialization in relation to maturity and risks. Most listed companies have already exceeded a threshold and are selling their product/solution to many customers, while other companies are earlier in their commercialization phase.

However, many of the Nordic growth-oriented robotics companies are still in the early phases, implying that not all companies have succeeded in gaining a significant market position and achieving operational profitability. In other words, we are looking at the company's current phase financially, i.e., does the company generate a substantial amount of revenue that confirms the product's attractiveness for customers, and to what extent can the company prove that a specific market segment, production site, region or similar is operationally profitable at its current phase.

Geographical presence: The geographical presence provides insights into the company's global scalability and scalability potential in general. Often, young robotics companies are early in their scaling phase, however, the technology is sometimes sold across the globe, which validates the scaling potential and also says something about whether various countries are using and accepting the technology. This also confirms the upside potential going forward.

Based on that, this parameter is relatively simple, i.e., we find how many countries or markets the assessed robotics company are selling its product or solution in. Putting things simply, a robotics company that only sells its product in the home country will be scored low, and a company selling its product or solution across Europe, North America, South America, Asia, the Middle East, etc. are scored high. For perspective, we have the following groups based on geographical presence:

i) "Low-low" score means that the robotics company only sells its products or solutions in e.g., Denmark (home country). **ii)** "Mid-low" score means that the robotics company sells its products or solutions in Denmark and a few other countries in the Nordics. **iii)** "Mid-mid" score means that the robotics company sells its products or solutions in Nordic countries and in several European countries. **iiii)** "Mid-high" means that the robotics company sells its products or solutions in both the Nordics, across Europe, and the United States or has a small footprint in Asia. **iiiii)** "High-high" means that the company sells its products or solutions to customers across the world, including the Nordics, Europe, the US, and Asia.

Market and accessibility: As most robotics companies are tapping into large markets with high annual growth rates, most markets are assessed as relatively high. Companies with a unique technology in a large and growing market are also expected to be valued higher by the stock market. This is also a reason why many GreenTech, software, and robotics companies are listed on the stock market.

That said, robotics companies are trying to disrupt an existing market or replace existing technology. This means that we also assess the accessibility to the market to our best ability, since difficulties in accessing the market for a robotics company limit the attractiveness of the market. If the "new" market is immature, and the company must invest significantly to develop the market, this is expected to give a longer sales period. Thus, a highly valuable and growing market, combined with easy customer access, will provide a high score.

Odico

Market: First North DK	Ticker: ODICO	Share price (DKK): 3.45	Market cap (DKKm): 62.9	Net cash (DKKm): 10.8 (21/22)	Enterprise value (DKKm): 52.1

Share information

YTD:	1.47%	1 year:	-54.49%
1 month:	-3.09%	Since IPO*:	-60.80%

Note: *Odicos' IPO date was 2 July 2018 (subscription price of DKK 8.80). We apply the closing price from 27 October 2022

Financials

(DKKm)	2020/21	2021/22	2022/23E*
Revenue	10.3	14.7	22.5
Revenue growth	*102%*	*43%*	*53%*
EBITDA	-5.8	-9.5	-7.5
EBITDA margin	*-56%*	*-64%*	*-33%*
Net income	-7.4	-11.6	N/A
Net income margin	*-71%*	*-79%*	*N/A*
Cash	28.9	15.4	N/A
Interest-bearing debt	4.9	4.6	N/A

Note: *Midrange in Odico's own 2022/23 guidance. Odico's accounting period is from 1 July to 30 June

Valuation multiples

	2020/21	2021/22	2022/23E*
P/S (x)	13.9	3.8	2.8
EV/Sales (x)	11.5	3.1	2.3
EV/EBITDA (x)	-20.4	-4.8	-6.9
EV/EBIT (x)	-17.8	-3.9	N/A
P/E (x)	-19.4	-4.8	N/A
P/B (x)	3.1	1.6	N/A
P/CF (x)	-16.1	-5.9	N/A

2020/21 and 2021/22 multiples are based on historical values
Note: *Multiples in 2022/23 are based on midrange in Odico's own guidance

Company description

Odico is a leading company within robotics for the construction industry. The company consists of two coherent business areas: digital fabrication and robot solutions based on standard robots, self-developed and innovative hardware, and software technology. Since its foundation in 2012, Odico has completed +350 customer projects and currently has 29 employees in Denmark and 4 in India. The company is a part of the robotics cluster in Odense, Denmark, where Odico is headquartered.

Investment case

Market growth within robotics for construction is driven by an increasing focus on efficiency and labor productivity as well as less waste and reduction of CO2 emissions. The construction industry is responsible for over 35%[1] of the EU's CO2 emissions, meaning that Odico's robot solutions can play a key role in the green transition.

Odico taps into these market drivers with its robot solutions business, which brings robots directly to the construction site, and the digital fabrication business, which utilizes robotics technology to create unique products for the construction industry.

In spring 2022, Odico announced a new management team (CEO, CFO, and Sales Director), who has launched a new strategic growth plan, focusing on digitization and sustainability. The new strategic direction must be seen in light of a previous focus on product development across different areas. Now, Odico increases its focus on larger key accounts and partnerships, both national and international, bringing Odico's solutions faster to the market. Thus, Odico will intensify its sales execution and digital marketing to expand its already existing customer portfolio.

Odico is traded to a P/S multiple (2021/22) of 4.3x based on the current market cap (P/S 2022/23E multiple of 2.8x) compared to the HCA Nordic Robotics sector median[2] of approx. 6.2x P/S (2021).

[1]https://single-market-economy.ec.europa.eu/industry/sustainability/buildings-and-construction_en
[2]Bioserve Technologies, Ekobot, Odico, Scape Technologies, Shape Robotics, Unibap, and Tendo

Key investment reasons

If Odico succeeds with executing the strategy and signs strategic international partnerships, the marketing muscles and sales scalability will increase significantly. This could solve the historical problems of accelerating sales, despite having a strong catalog of solutions.

The construction industry has the worst historical data of efficiency gains due to reluctance to new technology. With Odico's strategy shift to large partners, the probability of getting the right product-market fit will increase, and it will also lead to less capital investments for Odico.

As a result of the increased strategic focus on commercialization, Odico expects a high order intake over the coming years. The new strategy entails an ambitious 2024/2025 growth plan, presenting revenue guidance of DKK 80-100 million and an EBITDA guidance of DKK 10-20 million in 2024/2025.

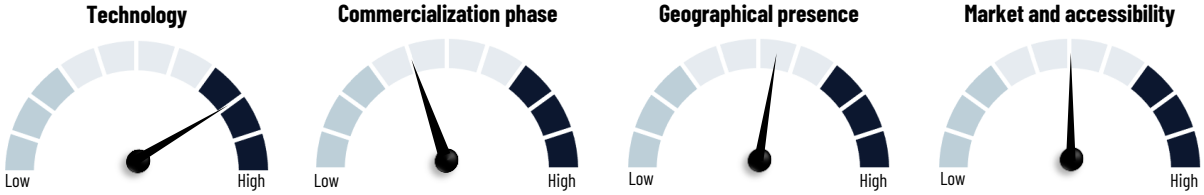
Key investment risks

Odico's new growth plans could be hampered by a construction industry where economic contraction historically has led to lower growth and bankruptcies. However, digitization and automation of processes can potentially increase the productivity. Odico mitigates the risk by focusing on larger international customers.

Odico faces risks associated with scaling up the business, and a potential capital increase can be necessary if the new long-term plan fails. However, Odico has DKK 16.8 million in cash and expects positive operational cash flow in 2023/24, meaning that financing of the growth plan is secured according to the company.

Another risk is that large robot suppliers increase their focus on the construction industry due to an unsaturated market with great potential. Currently, Odico mitigates the increasing competition risk by being the first mover with a catalog of reference customers.

Robotics HCA assessment



Note: The Robotics HCA assessment provides an overall assessment of Nordic growth-oriented robotics and automation companies based on the criteria: 1) Technology (patents, level of complexity, etc.), 2) Commercialization phase, 3) Geographical presence, and 4) Market and accessibility. Odico has developed a strong product portfolio , yet the company is from now on focusing on the commercialization phase, which is expected to increase going forward. With sales in 7 countries for its Digital Fabrication business unit, we assess the geographical presence to be medium. In relation to market and accessibility, we assess the market to be huge, however, the accessibility is relatively low due to the unsaturated market. Large partnerships may open for market accessibility.

Scape Technologies

SCAPE
THE BIN-PICKING COMPANY

Market: First North DK	Ticker: SCAPE	Share price (DKK): 1.065	Market cap (DKKm): 31.4	Net cash (DKKm): 14.3*	Enterprise value (DKKm): 17.1

**Net cash includes the capital injection of approx. DKK 18.5 million after 30 June 2022 (H1)*

Share information

YTD:	-55.81%	1 year:	-68.68%
1 month:	-18.08%	Since IPO*:	-87.73%

Note: *Scape Technologies' IPO date was 26 November 2018 (subscription price of DKK 8.68). We apply the closing price from 27 October 2022

Financials

(DKKm)	2020	2021	2022E*
Revenue	1.4	7.2	10.0
Revenue growth	*-73%*	*431%*	*39%*
EBITDA	-13.3	-6.5	N/A
EBITDA margin	*-979%*	*-91%*	N/A
Net income	-24.3	-14.2	N/A
Net income margin	*-1792%*	*-197%*	N/A
Cash	11.9	1.0	N/A
Interest-bearing debt	6.4	5.4	N/A

Note: *Midrange in Scape Technologies' own 2022 guidance
**Scape Technologies raised approx. DKK 18.5 million in August 2022

Valuation multiples

	2020	2021	2022E*
P/S (x)	57.8	6.9	3.1
EV/Sales (x)	53.7	7.5	1.7
EV/EBITDA (x)	-5.5	-8.3	N/A
EV/EBIT (x)	-4.8	-6.0	N/A
P/E (x)	-3.2	-3.5	N/A
P/B (x)	4.8	6.9	N/A
P/CF (x)	-4.9	-6.6	N/A

Note: Multiples for 2020 and 2021 are based on historical numbers
*Multiples in 2022 are based on midrange in Scape Technologies' own guidance

Company description

Founded in 2004, Scape Technologies is a Danish software company in the robotics industry. Scape Technologies has developed a patented bin-picking software for collecting, controlling, and placing items, delivered in unstructured boxes based on 3D computer vision systems. The bin-picking technology is targeted in manufacturing areas needing reliable and effective cost reduction and automation systems. The company has 22 employees in Denmark, 3 in Germany, and more than 20 in China.

Investment case

The robot and automation industry across sectors has faced issues with the automation of unstructured smaller objects ("bin picking"). This issue is solved with Scape Technologies' software, integrating different software modules into some of the largest robot brands in the world, especially for the automotive industry.

The Western demand for automation solutions is driven by deglobalization with manufacturers reshoring their supply chain.

After challenging years due to changing market conditions from COVID-19 lockdowns and fewer investments in the automotive industry, Scape Technologies is now less vulnerable after expanding into new markets and industries, including the growing distribution and logistics market in China.

With a Chinese major shareholder (owns 51% of the company), Scape Technologies has access to the Chinese market regarding partners and customers as well as financial resources, which is seen from the major shareholders' capital injections. The Chinese robotics market opens for growth as the Chinese government plans to increase the industry with a sales CAGR of +20% until 2025.

Scape Technologies is traded to a P/S multiple (2021) of 4.4x based on the current market cap (P/S 2022E of 3.1x), which is below the HCA Nordic Robotics sector median[1] of 6.2x sales (2021).

[1]Bioserve Technologies, Ekobot, Odico, Scape Technologies, Shape Robotics, Unibap, and Tendo.

Key investment reasons

Looking short-term, Scape Technologies has seen a positive development in the order book as well as an increasing number of partnerships and an installed base in Europe, supporting the growth rates.

Scape Technologies has expanded its business areas to the large uncultivated markets in logistics and distribution with new solutions based on its existing technology. In the post COVID-19 world with supply chain issues and labor shortages, this may open new sales opportunities.

With Scape Technologies' exposure in China and a Chinese major shareholder, the company has a unique opportunity to tap into the large and growing Chinese market. Future Chinese market growth rates are supported by trends such as an older population and labor shortage, which may lead to increasing investments in automation and robotics solutions.

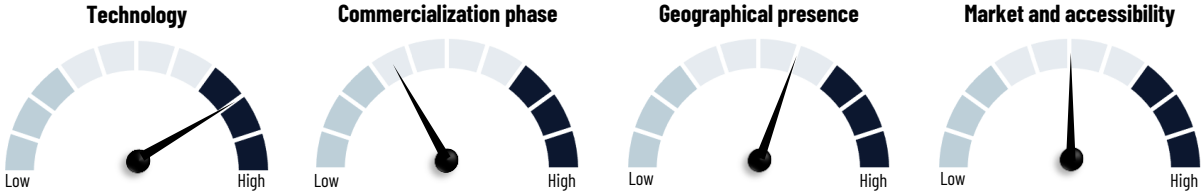
Key investment risks

The pace of technology development in the robotics industry may require continuous product investments, demanding a large amount of money, and patent expiration can also open the competition. Despite having ensured its cash position with the recent capital injection of approx. DKK 18.5 million, there is a risk that Scape Technologies may raise additional capital.

Shortages of standard robot components and supply issues may pose challenges in the short term due to delivery issues, which could affect 2022 guidance negatively. Another key risk is a potential recession, which may slow down the company's sales.

Being exposed to the Chinese market brings uncertainties and risks, including general business risks as well as the de-globalization tendency. However, this could be abated by Scape Technologies' local presence and Chinese ownership.

Robotics HCA assessment

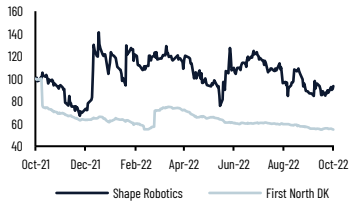


Note: The Robotics HCA assessment provides an overall assessment of Nordic growth-oriented robotics and automation companies based on the criteria; 1) Technology (patents, level of complexity, etc.), 2) Commercialization phase, 3) Geographical presence, and 4) Market and accessibility. With Scape Technologies' patented technology, the company scores high on the technology level. The commercialization phase is lower, however, new partnerships and a path to profitability may increase this over the coming years. In relation to the geographical presence, Scape Technologies has sold its solutions across Europe and in China. Despite being in an attractive market with focus on automation, the accessibility is assessed to be lower; however, partners may open the market.

Shape Robotics

Market: First North DK	Ticker: SHAPE	Share price (DKK): 14.35	Market cap (DKKm): 114.3	Net debt (DKKm): 23.3 (H1 22)	Enterprise value (DKKm): 137.6

Share information



YTD:	19.58%	1 year:	-9.46%
1 month:	5.51%	Since IPO*:	46.43%

Note: *Shape Robotics IPO date was 25 June 2020 (subscription price of DKK 9.80). We apply the closing price from 27 October 2022

Financials

(DKKm)	2020	2021	2022E*
Revenue	6.0	17.8	87.0
Revenue growth	*-25%*	*194%*	*390%*
EBITDA	-11.9	-15.5	0
EBITDA margin	*-197%*	*-87%*	N/A
Net income	-12.7	-16.3	N/A
Net income margin	*-211%*	*-92%*	N/A
Cash	9.2	2.0	N/A
Interest-bearing debt	1.6	5.5	N/A

Note: *Midrange in Shape Robotics own 2022 guidance (guidance raised 9 September 2022)

Valuation multiples

	2020	2021	2022E*
P/S (x)	14.0	5.4	1.3
EV/Sales (x)	12.8	5.6	1.6
EV/EBITDA (x)	-6.5	-6.4	N/A
EV/EBIT (x)	-6.0	-6.1	N/A
P/E (x)	-6.6	-5.9	N/A
P/B (x)	4.2	6.4	N/A
P/CF (x)	-4.8	-5.4	N/A

Note: Multiples for 2020 and 2021 are based on historical numbers
*Multiples in 2022 are based on midrange in Shape Robotics' own guidance

Company description

Shape Robotics is a robotics company within educational technology ("EdTech"). Originally, Shape Robotics has developed the Fable robot system, which has been sold across the globe. Following new opportunities, the company has now transformed itself to be a distributor of science, technology, engineering, art, and math (STEAM) Lab concepts (often including its Fable robots) for educational institutions, currently sold in Romania, and with ambitions to expand the concept across markets.

Investment case

The investment case in Shape Robotics has changed since the IPO in 2020 after the transformation to a distributor of EdTech equipment for classrooms, sold as STEAM Labs (SmartLabs). As a result, the investment case is driven by Shape Robotics' ability to scale its activities at sustainable margins.

Shape Robotics' opportunistic move in 2021 was based on Romania's huge investments in education following EU's Recovery and Resilience Plan. In the plan, funds for education are more than EUR 3bn, of which 70% are allocated for digitalizing education. Specifically, the public plan has allocated funds for a minimum of 1,175 SmartLabs and up to 10,000 technology labs with Shape Robotics being in pole position to supply large parts (approx. EUR 35,000 – 95,000 for each lab).

In 2022, Shape Robotics has established strong partnerships with EdTech producers and well-known companies, including Samsung Electronics. This implies that Shape Robotics has large opportunities to expand and sell the concept across Europe.

Shape Robotics is traded to a P/S multiple (2021) of 6.4x based on the current market cap, which is close to the HCA Nordic Robotics sector median[1] of 6.2x sales (2021). Yet, Shape Robotics is valued to 1.3x P/S (2022E), which is below the sector due to high 2022 growth. Going forward, the EV/EBITDA multiple will be more relevant.

[1]Bioserve Technologies, Ekobot, Odico, Scape Technologies, Shape Robotics, Unibap, and Tendo.

Key investment reasons

With the strong execution of its STEAM Lab concept and several guidance upgrades following both orders and acquisitions in Romania, Shape Robotics is in a good position to continue ramping up its activities and achieve an attractive profitability level.

The short- and mid-term case is supported by a record-high pipeline as well as the delivery of SmartLabs in the EU's Recovery and Resilience Plan. For perspective, Shape Robotics expects to deliver approx. 100 SmartLabs in 2022 out of a total of 1,175 SmartLabs over the coming years.

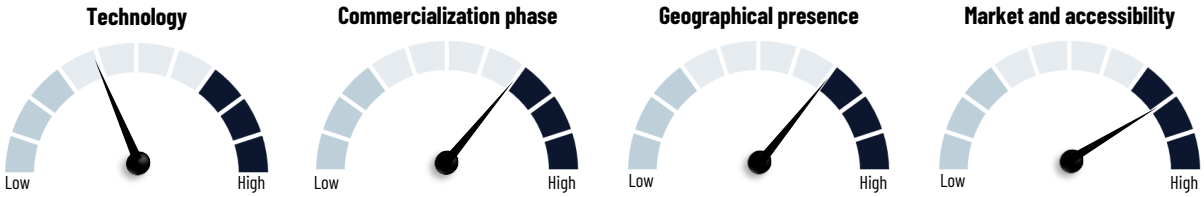
Looking at the long-term case, new strategic partnerships and acquisitions have opened for the possibility of STEAM Labs sale to other Central and European countries such as Hungary, Bulgaria, Greece, and Poland as these countries have similar projects within EU's Recovery and Resilience Plans. Additionally, Shape Robotics could face new opportunities outside EU/Europe with the concept.

Key investment risks

With Shape Robotics' presence in Romania as a distributor of EdTech equipment, the company is exposed to different risks such as potential supply chain issues (cost inflation, delays, etc.) as well as political risks. If Shape Robotics fails to deliver the SmartLabs in accordance with the EU plan, the company can potentially lose significant revenue potential over the coming years. However, Shape Robotics has already sold and implemented several STEAM Labs in many schools, which somewhat decreases the risks.

Shape Robotics is in a scaling phase with high growth ambitions. Naturally, this means that Shape Robotics needs to tie capital up in inventory for future delivery, implying that the company is dependent on financing. Projects are currently financed by one of the largest Romanian banks, BRD – Groupe Société Générale, which has granted a project credit facility up to EUR 3m. Shape Robotics has also received support from Danske Bank and EKF Denmark.

Robotics HCA assessment



Note: The Robotics HCA assessment provides an overall assessment of Nordic growth-oriented robotics and automation companies based on the criteria; 1) Technology (patents, level of complexity, etc.), 2) Commercialization phase, 3) Geographical presence, and 4) Market and accessibility. After being a distributor of equipment with less focus on its own development, the Fable technology itself is assessed lower. However, this has accelerated Shape Robotics' commercialization phase to a new level and towards profitability (EBITDA). With sales of robots in approx. 30 countries, Shape Robotics is also highly presented geographically. The market is driven by huge investments in education, and accessibility has increased from partnerships and acquisitions.

Sources (page 1-4)

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- [1]ResearchAndMarkets – Global Industrial Robotics Market Report (2022-2030): https://www.globenewswire.com/en/news-release/2022/06/16/2463734/28124/en/Global-Industrial-Robotics-Market-Report-2022-to-2030-by-Type-End-user-Function-and-Geography.html

- [2]Verified Market Research – Service Robotics Market Report (2022-2030): https://www.globenewswire.com/en/news-release/2022/09/08/2512780/0/en/Service-Robotics-Market-is-expected-to-generate-a-revenue-of-USD-173-17-Billion-in-2030-Globally-at-21-25-CAGR-Verified-Market-Research.html

- [3]Berkshire Grey Investor day – July 2021: Berkshire-Grey-Investor-Day-Presentation

- [4]Odense Robotics – Insight Report 2022: https://www.odenserobotics.dk/

- [5]Investing.com: https://www.investing.com/

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