Software-as-a-Service sector report

May 2022

HC ANDERSEN CAPITAL

Agenda

Why invest in the Software-as-a-Service sector?

Introduction to Software-as-a-Service (SaaS)

Software solutions have moved from being on-premise, installed locally, to be offered through a subscription-based and recurring model accessed through the cloud. During the COVID-19 pandemic, the digital transformation, as well as the low-interest-rate environment, pushed SaaS companies to record-high valuations in 2021. However, market uncertainties and higher interest rates have contracted multiples recently, and investors are now looking into valuations at levels before the COVID-19 pandemic. In this report, we will provide insights into the sector and shed light on the development of SaaS B2B valuations and metrics with a focus on the Danish SaaS sector.

The SaaS business model has several advantages

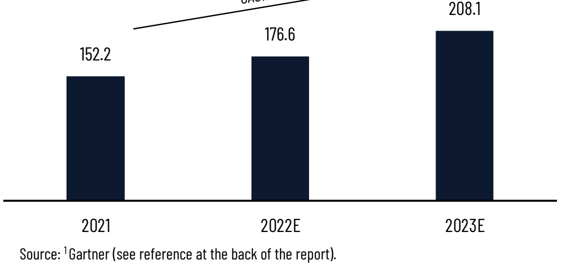
The SaaS business model has several advantages, including the fact that a SaaS company normally has two growth engines – upsell potential for existing customers and new customers. This provides an attractive business model because companies can expand their solution to new customers, while at the same time upsell or cross-sell to their existing customer base from which they get a stable income over years from subscriptions, assuming low churn rates. A SaaS business is also associated with greater predictability because the company can track its customer base with several metrics, including annual recurring revenue (ARR), average ARR per customer (ARPA/ARPU), churn, customer lifetime, CAC payback period, etc. As a result, companies and investors can track the lifetime value of the customers given a few assumptions.

The stability and predictability of the recurring revenue is the explanation why many investors value SaaS companies at high multiples even though most of the businesses at their current stage are losing money. In recent years with low-interest rates and easy access to new capital, SaaS companies have been able to invest massively in getting new customers because the lifetime value of a customer, in most cases, is higher than the costs of acquiring a new customer. From an investor perspective, this has also been attractive because the stock market valued a one million increase in ARR at more than 15x in 2021 (median multiple). However, as the multiple has decreased and access to capital has been harder to obtain due to the increasing interest rates, the attractiveness of the model has declined recently.

Secular growth trends support the global SaaS market

The global SaaS market has grown at a stable rate, and the market is expected to continue to grow with a CAGR of approx. 17% in the coming years according to Gartner. This corresponds to a total market size of approx. USD 208 billion in 2023, making the SaaS sector the largest within cloud services. Secular trends such as the digital transformation, automation, and optimization of resources support these growth rates.

Global SaaS software market growth



Source: [1]Gartner (see reference at the back of the report).

While there have been COVID winners such as Zoom Video Communications at the beginning of the COVID-19 pandemic, pulling the demand forward with +326% growth rates year-on-year, there are still new verticals in the software market with significant digitalization potential. Traditional industries such as the real estate sector, hotels, banking, etc. will become more digitalized which is expected to drive the growth together with new technologies and opportunities that help people and companies to be more efficient in a changing world.

Current valuations below pre-COVID multiples

In this report, we have focused primarily on full-year 2021 SaaS numbers for consistency. Overall, numbers show a continuation of high double-digit growth rates for SaaS companies; however, recent geopolitical uncertainties and Q1 numbers indicate some slowdown as well as difficulties raising new capital that may limit growth rates in 2022. Additionally, multiples have declined significantly over the past six months, which also has affected the M&A market and venture capital market.

According to Clouded Judgement by Jamin Ball, tracking the US-listed SaaS companies, the current median multiple was 6.2x NTM revenue in Mid May[2] (see reference at the end of the report). This is 44% below pre-COVID levels in February 2020, 20% below a 5-year average before COVID (2015-2019), and 6% below the lows in March 2020. With the interest rates at approx. 2.75%-3.00% in the United States (10Y) and a risk of an upcoming short-term recession that will affect the revenue and earnings projections, there are different scenarios from here.

However, if interest rates stabilize at the current levels, SaaS multiples from a sector perspective (median) may be close to the bottom despite the ongoing uncertainty in the stock market. Predictions are always hard; yet, SaaS companies are typically less cyclical, and the digital transformation is expected to continue over the next decades, supporting the future growth rates.

...but growth is not weighted above everything else anymore

Often, we see that traditional value investors struggle to evaluate and accept SaaS companies burning and losing money to win new markets and customers. However, this is necessary to become a category leader in the different industries in which the companies are competing. A reason is the nature of the SaaS business model, acquiring new customers and retaining the customers, ideally for +10 years with a strong solution demonstrated by a low churn rate. In relation to that, the best SaaS solutions have high switching costs, as well as stickiness, ensuring valuable recurring revenue.

A rule of thumb is that investors allow SaaS companies to burn cash in their scaling phase in accordance with the "Rule of 40" (revenue growth rate + FCF margin or profitability margin must exceed 40%). However, early-stage SaaS companies, like most of the Danish-listed companies, are investing more in the organization and growth initiatives, implying that this measure can be harder to apply when evaluating younger companies such as these.

Keeping in mind that investors have been valuing growth above anything else in the past years, we have now observed a shift in the fall of 2021 continuing into 2022. With increasing interest rates and market uncertainty, SaaS valuations have declined sharply. Consequently, more solid and profitable value companies have outperformed growth stocks recently. We will look more into SaaS valuations on the next pages.

Software valuations in the public markets

Revenue or ARR multiples determine SaaS valuations

SaaS companies are typically valued on ARR multiples or simple revenue multiples, taking both the last twelve months (LTM) and the expected next twelve months (NTM) into account. However, with increasing interest rates and more focus on profitability and cash flows due to difficulties of raising new capital for growth, the correlation between ARR growth (revenue growth) and valuation multiples has declined.

Inflation, rate hikes, recession – what does it mean for SaaS?

Investors are currently wondering if we have seen the bottom of the tech/software sell-off. In May 2022, valuations are below pre-COVID levels. External macro factors, such as inflation and interest rates, affect valuations and multiples of risky assets like SaaS stocks. During COVID-19, governments and central banks, led by FED and ECB, pumped trillions of dollars and euros into the economy and took interest rates to the historically low rates. Combined with the technological penetration as an effect of COVID-19 working changes, these unprecedented levels of capital flowed into SaaS stocks and IPOs, driving valuations up.

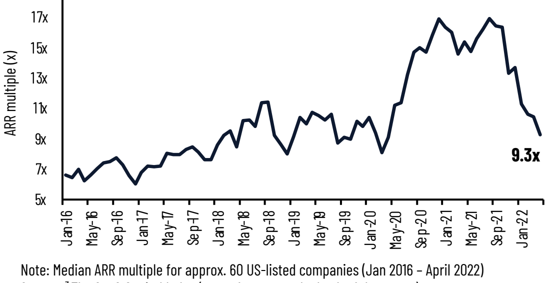
The massive stimulus packages under the COVID-19 pandemic have had a big impact on the current inflation level due to consumer demand for goods instead of services. In addition, energy prices have risen for several reasons including the war in Ukraine, and new lockdowns in China, increasing the pressure on global supply chains. The response to control the record-high level of inflation is increased interest rates, and the market has already priced in several rate hikes. Consequently, SaaS stock prices and other growth stocks have declined massively based on macro policy and expectations to rate hikes due to the higher discount rate of future cash flows, resulting in a lower present value. Consequently, interest rates and SaaS valuations are inversely correlated.

In a potential recession scenario, software companies have historically been less cyclical continuing their growth rates at relatively high levels, however, with slower growth rates due to the economic contraction and less appetite to invest in new solutions.

Global/US SaaS sector valuation

Since autumn 2021, the US/global SaaS sector has seen significant multiple contractions due to the above-mentioned factors, meaning that the valuation is back to pre-COVID levels using monthly numbers (end April 2022). After the COVID-pandemic, the demand for software solutions increased significantly, and we argue that the quality of the SaaS stock basket today is higher than it was pre-COVID due to a more digitalized world and higher median growth rates across the sector. Currently, the US sector trades at 9.3x ARR end of April (LTM) according to The SaaS Capital Index.

SaaS Capital Index US (LTM)



Note: Median ARR multiple for approx. 60 US-listed companies (Jan 2016 – April 2022)
Source: [3] The SaaS Capital Index (see reference at the back of the report).

Nordic SaaS sector valuation

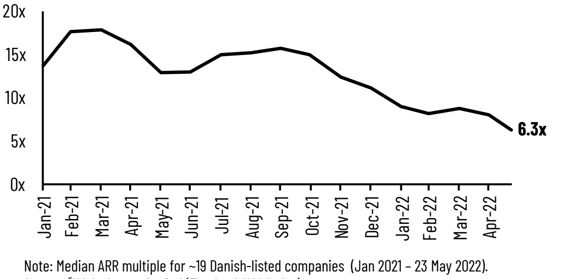
In relation to the Nordic environment, there are different Nordic SaaS indices covering the valuations among Nordic companies. According to a Q1 2022 report from Deloitte[4], (see reference at the back of the report) a Nordic SaaS index was traded at 7.1x revenue (NTM) compared to 8.5x revenue (NTM) for the global SaaS index based on data at the end of Q1 2022. We do not have further insights into other SaaS metrics, since many Nordic companies are not transparent in their reporting of all SaaS metrics.

Danish SaaS sector valuation

Zooming into the Danish SaaS sector's valuation, the sector was primarily built up during 2021 with several IPOs. Before the IPO wave in 2020 and 2021, there were only a handful of small Danish SaaS companies and the billion company, SimCorp, reporting ARR. Now, we categorize 19 SaaS companies, which we have tracked in an index (median) in the period from January 2021 to 23 May 2022.

Looking into the valuation in 2021, prices were driven up by large capital inflows in risky assets and IPOs. The significant decline in the valuation multiple (median) from above 15x ARR in 2021 to 6-7x ARR in May 2022 is somewhat close to the Nordic and global development. For comparison purposes with the US SaaS Capital Index, we are using market cap and the latest reported ARR (LTM). Obviously, there may be some deviations using enterprise value due to higher cash positions than debt, however, these deviations are relatively small on a combined basis.

SaaS HCA Index DK (LTM)



Note: Median ARR multiple for ~19 Danish-listed companies (Jan 2021 – 23 May 2022).
Source: [5]HC Andersen Capital (The SaaS HCA Index).

A good time to invest if you believe in the sector

Obviously, small Danish software companies should not be compared directly to very large US-listed companies. However, relative valuation sheds light on how comparable companies are traded in the market. We observe that the global US SaaS sector was traded for higher multiples later into 2021 than the Danish SaaS sector, however, the Danish SaaS sector has somewhat stabilized at a level just below the US SaaS sector. Thus, the valuation gap has historically been larger due to the higher quality and more mature US companies as well as more liquid assets compared to the Danish-listed SaaS companies. Now, we see that this gap has somewhat been closed from a significant contraction in the US SaaS sector over a few months.

For investors tripping to get exposure to the software sector with a well-diversified portfolio, we see current levels as a good entry into companies with a solid cash position. Many well-capitalized SaaS companies are performing well from a business perspective; however, many shares have declined by 50-80%, which increases their attractiveness. In relation to that, risks are significantly higher if you invest in most of the Danish SaaS companies due to more immature business models and smaller cash positions.

Software valuations in the private markets

Software companies in the Venture Capital (VC) market

Since most of the Danish-listed SaaS companies are in earlier stages, we also shed light on the venture capital market. Like public-listed SaaS businesses, private software companies have gained much attention from private equity firms, suite vendors, and other investors with deep pockets, looking for new opportunities and ways to tap into the digitalization trend. In fact, "nontraditional VC investors" such as private equity firms, hedge funds, pension funds, investment banks, etc. have moved more into the VC ecosystem over the past years according to Pitchbook[6] (see reference at the back of the report).

Following the methodology from Pitchbook, private software companies in the venture capital (VC) market can be divided into angel & seed (startups), early-stage VC, and late-stage VC. In 2021, the median European software pre-money valuation was EUR 4.4 million, EUR 9.0 million, and EUR 26.2 million for angel & seed, early-stage VC, and late-stage VC, respectively.

European VC market increased significantly in 2021

In Europe, late-stage private software companies with proven technology and business model experienced the highest expansions in valuations compared to both angel & seed and early-stage VC businesses. Besides having a more mature business model, another explanation is that the late-stage companies have more capital and resources to increase their sale of software solutions from a higher demand during the COVID-19 pandemic.

In 2021, software valuations in the venture capital (VC) market increased significantly similar to valuations on the public traded companies. According to Pitchbook, valuations for late-stage VCs almost doubled. In comparison, valuations of early-stage VC companies increased approx. 50% from 2020 to 2021 according to data from Pitchbook.

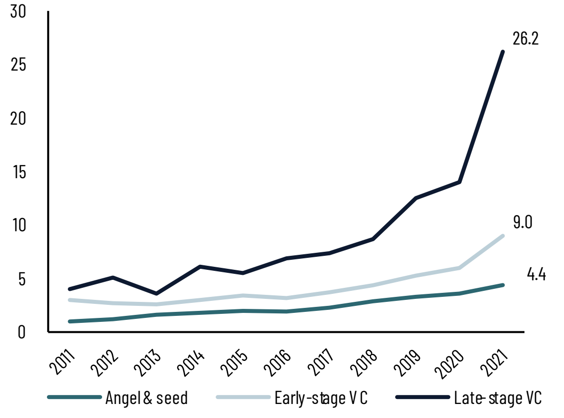
A booming Danish VC market in 2021

Zooming into the Danish VC market, Vækstfonden[7] (see reference at the back of the report), an investment fund controlled by the Danish state to support young companies with loans and investments, reported a record-high venture capital inflow of DKK 14 billion in 2021 allocated across 131 investments. This was a significant increase from DKK 4 billion in 2019 and DKK 3.9 billion in 2020. In fact, this is the highest growth rate in the Nordics, and Denmark attracted more venture capital than Finland and Norway. However, Sweden is still leading the VC market in the Nordics. Vækstfonden also reported that international investors have increased their interest in Danish companies. In 2021, approx. 60% of the investments included international investors.

Looking at sectors, Vækstfonden reported that tech companies have been predominant with fintech, biotech, and Software-as-a-as-Service (SaaS) being the largest sectors. In 2021, 32% of all venture investments were fintech companies, highly explained by leading companies such as Lunar and Pleo which attracted approx. DKK 3.8 billion in 2021.

Focusing on the private Danish SaaS sector, we do not have sufficient data that provides us with insights and a clear view of the valuations. That being said, a sharp increase in activity has been observed in the space in 2021 in conjunction with many of the latest IPOs on the Danish growth market Nasdaq First North in recent years. The largest Danish venture SaaS investments were Dixa (Enterprise solutions), eloomi (EdTech), and Podimo (Digital Media). In these SaaS companies, investments were just below DKK 2 billion, DKK 1 billion, and DKK 0.5 billion, respectively.

Median software VC pre-money valuation (EURm) by stage



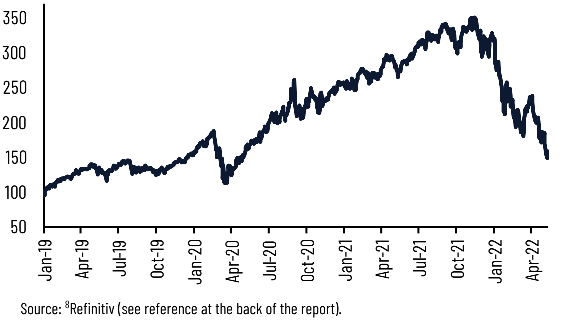
Source: [6]PitchBook (see reference at the back of the report) and HC Andersen Capital.

What to expect in 2022 from the VC market?

Private businesses are often valued with a lag of what we see from public markets with valuations being traded every day. In the private industry, many investment banks and other advisors are using peer valuation with public companies to justify valuations. This implies that private business valuations are negotiated with a lag to the public market, both in bull markets and bear markets. With the recent multiple contractions in the public markets, private businesses may have been acquired at higher multiples recently. Thus, contrary to financial theory and logic, some private SaaS companies are acquired at multiples above similar high-growing public SaaS companies. Public-traded companies should, all else equal, be priced above non-listed companies because public-traded companies can be traded actively (liquid markets), suggesting a liquidity premium compared to non-listed companies. Yet, the share liquidity (volume) has been relatively low when measuring the liquidity recently on, for instance, Nasdaq First North.

That being said, venture capitalists are now reporting significant declines in multiples, which may continue under the current market environment. We are tracking the Refinitiv Venture Capital Index, which is down approx. 55% from the top in Mid November 2021.

Refinitiv Venture Capital Index



Source: [8]Refinitiv (see reference at the back of the report).

Growth has been the key value driver

Growth has been the key factor for SaaS companies supported by a high correlation between sales/ARR multiples and growth rates. In Denmark, most SaaS companies are in their early stage, implying that the companies invest massively in growth to roll out their software products to new and existing markets. As a result, steadily increasing ARR growth rate year over year is the key indicator of a more proven business model and product-market fit.

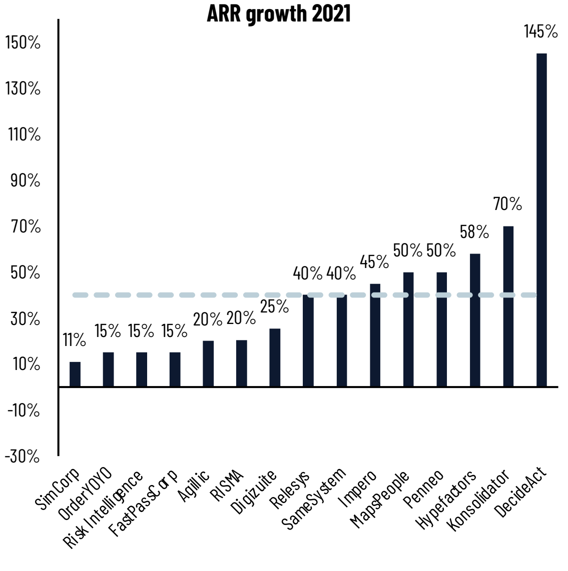
With the subscription-based business model, we agree with the use of ARR as the metric to look for instead of using sales like traditional companies. In relation to that, most Danish-listed companies are transparent in their reporting, implying that we prefer to use ARR as the benchmark. However, this also implies that some Danish software companies with a smaller part of revenue being recurring (ARR) are excluded from the benchmark as well as well known cBrain with no ARR figures.

Danish ARR growth rate benchmark for 2021

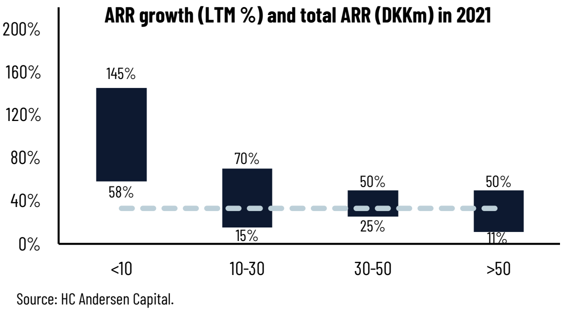
Looking across the Danish-listed SaaS companies with ARR growth data for 2021, the median ARR growth was 40% in 2021 with a few outliers. All businesses reporting full-year ARR growth in 2021 grew their ARR (Valuer has not reported a full-year report with ARR growth data yet). Interestingly, all other SaaS companies increased their ARR significantly during 2021, indicating a high demand for SaaS solutions.

Looking at the largest Danish-listed SaaS company, OrderYOYO, the company struggled to keep its growth momentum from 2020, having a significant tailwind from COVID-19 restrictions. Re-opening of economies and supply chain challenges have limited its growth to 15% in 2021.

On the top of the list, the early-stage SaaS provider of strategy execution software tool, DecideAct, stands out with a reported ARR growth of 145%. This is a significantly higher growth rate than the subsequent companies, including other early-stage companies such as Konsolidator and Hypefactors. Despite being a relatively large SaaS company measured on ARR, Penneo has been able to deliver a high growth of 50% in 2021.



Note: Nexcom, Dataproces, Enalyzer, and cBrain are not included due to missing ARR data or a larger part of revenue being non-recurring. Source: HC Andersen Capital and company reports.



Source: HC Andersen Capital.

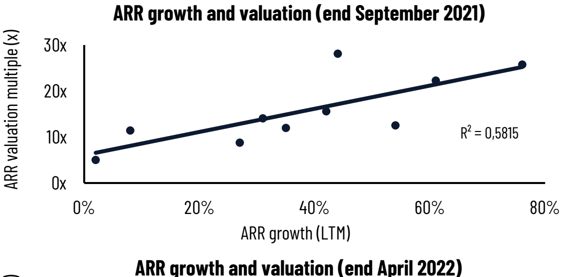
Size matters when looking at growth rates

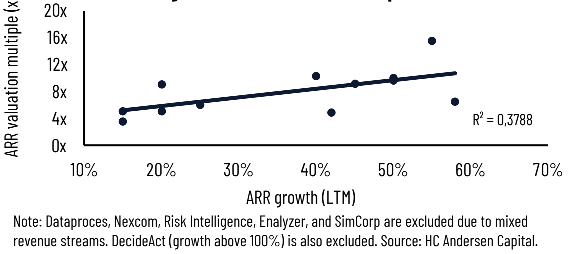
As mentioned before, Software-as-a-Service (SaaS) companies have invested massively in growth because it is crucial to expand the software products. Long customer lifetimes ensure a steady cash flow and long-term profitability. Thus, growth has historically been the key driver for SaaS companies, also in terms of valuation. Overall, we find that the median ARR growth rate was 40% in 2021.

Comparing small SaaS companies with larger SaaS companies have different complications due to different risk profiles and the fact that smaller SaaS companies should, all else equal, grow more than larger SaaS companies. With a relatively low customer base, smaller companies can easier double their revenue in a scaling phase. In the Danish SaaS sector, however, we also find that early-stage companies with ARR below DKK 10 million grow more than the larger ARR groups. However, the smaller SaaS companies are also associated with a higher risk and a greater capital need to be able to generate further growth. As the companies grow to a level where higher growth rates are difficult to obtain, more focus should be allocated to profitability and cash flows, balancing growth and profitability. Most Danish SaaS companies have not reached this level yet. That said, companies could be forced to limit their growth investments to ensure sufficient capital during uncertain capital markets. Recently, we have also observed a decline in the correlation between growth and the valuation multiple.

Correlation between growth and valuation

Looking at the correlation between growth and the valuation multiple across the Danish SaaS sector, we find that ARR growth has explained approx. 60% of the multiple in September 2021, however, the correlation has declined to below 40% in April 2022.





Note: Dataproces, Nexcom, Risk Intelligence, Enalyzer, and SimCorp are excluded due to mixed revenue streams. DecideAct (growth above 100%) is also excluded. Source: HC Andersen Capital.

Deep dive: Growth-adjusted valuation

Adjusting for growth in multiples

As highlighted on the previous page, the growth rate has a positive correlation with the valuation multiple. We currently observe this correlation decline from higher correlation numbers; however, it is still worth highlighting. We also expect that this may have a large effect going forward across the Danish SaaS companies, especially companies in their early stages.

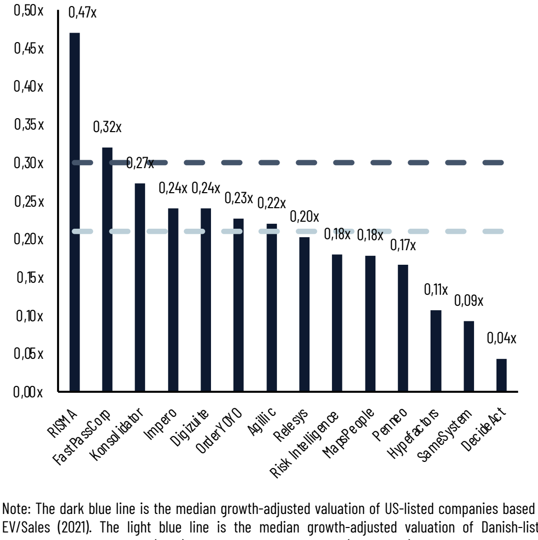
As a result, we have conducted a growth-adjusted valuation metric, using the simple P/ARR metric divided by the companies' ARR growth rates in absolute values. We are using both the historical 2021 growth rate as well as the companies' own expectations for 2022 (midrange in guidance). We put greater emphasis on the 2021 growth rate because there are larger uncertainties connected with the 2022 guidance from the companies. Even though companies should be evaluated on future results, we see that historical growth rates are correlated with future growth rates.

Growth-adjusted valuation for 2021

First, looking into the growth-adjusted P/ARR across the Danish SaaS companies with 2021 ARR and growth rates, we find that the median growth-adjusted valuation is 0.21x. To compare this number from a global perspective, we have used EV/Sales numbers from Clouded Judgement (Jamin Ball)[2] which shows this is 0.30x in the United States.

Focusing on the Danish SaaS sector, RISMA is currently the highest valued company based on P/ARR (2021) taking growth into perspective. However, the company expects to accelerate its growth rates in 2022 which changes the picture completely as shown in the next figure. On the other hand, DecideAct delivered growth rates of 145%, implying that the growth-adjusted valuation is at 0.04x. This may be explained by its continuous demand for new capital to fuel the growth given its early-stage phase. SameSystem and Hypefactors are also among the companies with the lowest growth-adjusted valuations based on the 2021 ARR and growth rates.

Growth-adjusted valuation (2021)



Note: The dark blue line is the median growth-adjusted valuation of US-listed companies based on EV/Sales (2021). The light blue line is the median growth-adjusted valuation of Danish-listed companies based on P/ARR (2021). Source: Clouded Judgement (Jamin Ball) and HC Andersen Capital.

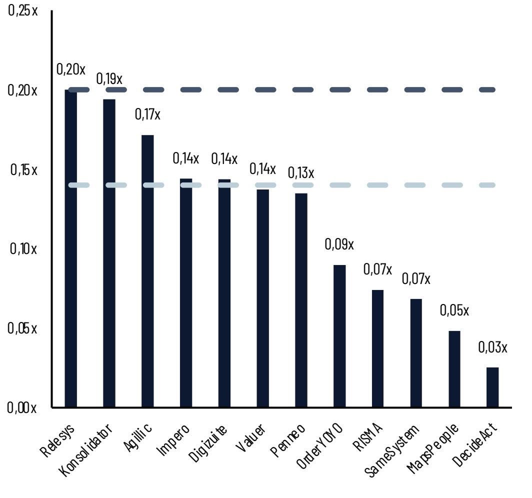
Growth-adjusted valuation for 2022E

Now, we are looking into 2022 based on the companies' own expectations (midrange). In our view, the risk of downgraded expectations across the sector is somewhat higher than the possibilities of upgraded expectations taking the results of Q1 into perspective as well as the market uncertainty from the geopolitical situation in Europe.

Overall, the median growth-adjusted valuation is 0.14x compared to 0.20x in the US sector using EV/Sales numbers from Clouded Judgement (Jamin Ball)[2].

With this note in mind, we see that Relesys is the highest valued company based on the expected P/ARR multiple in 2022 adjusted for the growth rate. Looking at the lowest-priced companies given the assumption that the companies fulfill their expectations for 2022 (midrange), DecideAct guides between 80-150% ARR growth in 2022 (115%), implying that the growth-adjusted valuation is 0.03x. This is followed by MapsPeople at 0.05x which expects to increase its ARR by 82-107% (95%) in 2022. Companies such as SameSystem and RISMA are also among the lowest-priced companies after adjusting for their expected ARR and growth rates in 2022.

Growth-adjusted valuation (2022E)



Note: The dark blue line is the median growth-adjusted valuation of US-listed companies based on EV/Sales (2022E). The light blue line is the median growth-adjusted valuation of Danish-listed companies based on P/ARR (2022E). Source: Clouded Judgement (Jamin Ball) and HC Andersen Capital.

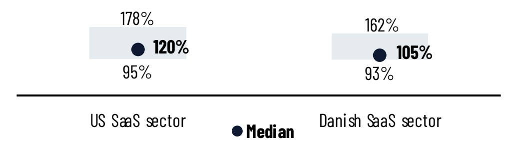
Deep dive: Net revenue retention rate & Rule of 40

Net revenue retention rate (NRR) – one of the important KPIs

Net revenue (ARR) retention rate (NRR) is one of the key metrics that investors and analysts are monitoring to evaluate the performance of SaaS businesses. It compares the ARR that is generated by the existing customer base one year ago with the current ARR from the same set of customers, i.e., subtracting customers that have left the customer portfolio (churned) and contracting and adding ARR from customers which have increased their engagement (upsell/cross-sell). Thus, 95% net revenue retention rate means that, for instance, 10% have churned, while 5% of the other existing customers have uplifted. Ideally, SaaS businesses increase their engagement with their existing customers above 100%, implying that the upsell/cross-sell exceeds the churn rate and contraction.

Net revenue retention rate – in a global and local perspective

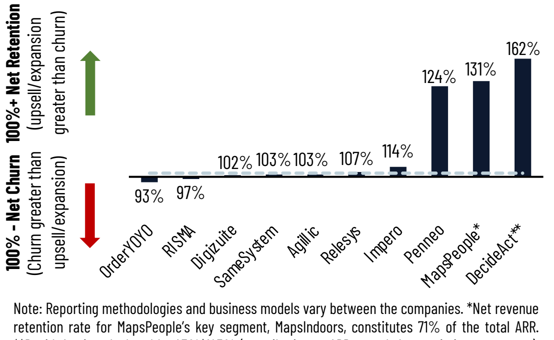
Overall, US-listed and global SaaS companies are more mature and have a higher upselling rate than European and Danish SaaS companies, explained by larger customers, and a more targeted "land & expand" strategy, upselling, and cross-selling various solutions when a new customer is landed and the dependence on the company's solution increases.



Source: [9]Clouded Judgement (Jamin Ball), HC Andersen Capital, company reports 2021.

In the United States, there is a median NRR of 120% in early April with 178% as the highest reported and 95% as the lowest reported. For comparison, the early-stage Danish companies have a median of 105% with 93% being the lowest and 162% being the highest.

Unfolding the net revenue retention rate across the Danish-listed SaaS companies that report the metric, DecideAct – one of the early-stage companies – reported an upselling to existing customers of 62% and churn rate of 0%. A company such as Penneo, which is one of the largest Danish-listed SaaS companies, is successful in being able to both sell to existing customers with its digital signature solutions and cross-sell to existing customers with its acquired KYC solution. Impero has also reported a high net revenue retention rate by landing a large company locally and afterward expanding the contract globally across divisions and markets. On the other hand, RISMA sells a full suite solution to smaller customers with less opportunity to upsell, and OrderYOYO's usage-based business model has shown contraction in 2021 from the online takeaway market.



Note: Reporting methodologies and business models vary between the companies. *Net revenue retention rate for MapsPeople's key segment, MapsIndoors, constitutes 71% of the total ARR. **DecideAct is calculated by 43%*145% (contribution to ARR growth from existing customers). The light blue line is the median value. Source: Company reports 2021 and HC Andersen Capital.

Rule of 40 – balancing growth and profitability

SaaS businesses are having a trade-off between revenue growth and profitability. As a result of high customer acquisition costs, substantial revenue growth for SaaS businesses are typically affecting profitability in the short-term. A rule of thumb is that a healthy SaaS company has a combined revenue growth and EBITDA margin or FCF margin above 40%, referring to the "rule of 40". Notably, EBITDA margin and FCF margin can vary a lot from each other due to investments in software projects which is capitalized and do not affect EBITDA. This implies that the FCF margin is preferred because the metric is somewhat less dirty when compared across SaaS companies. However, this metric is harder to apply to immature companies, including many of the Danish-listed companies in their scale-up phase.

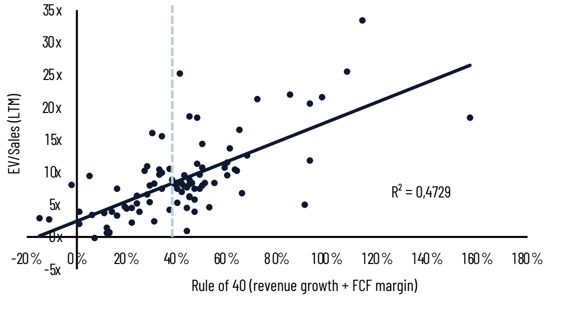
Rule of 40 – in a Nordic perspective

In April 2022, Upsales released a Nordic SaaS E40 report, analyzing listed B2B SaaS companies in the Nordics with revenues above EUR 2.5 million[10] (see reference at the back of the report). Results showed that that only five out of 49 Nordic listed SaaS companies reported combined revenue growth and FCF margin above 40%.

An explanation is that most of the companies are in earlier stages focusing on revenue growth, i.e., these companies are focusing on scaling up their organization and investing in growth activities. Such investments are made upfront affecting the cash flow immediately, while the payoff from growth investments may have a lagging effect on the revenue and ARR growth.

Rule of 40 – in a global perspective

Looking at global US-listed SaaS companies, there is a tendency that companies fulfilling the rule of 40 are trading to above-median multiples. The explanation is that companies grow efficiently, and risks are also lower in the current capital markets due to less dependence on raising capital. Taking rule of 40 into perspective, there is a correlation of close to 50% with the EV/Sales multiple, implying higher focus on profitability and cash flows.



Source: [11]Clouded Judgement, (Jamin Ball) and HC Andersen Capital.

Many of the largest SaaS companies are included in the data points above. Businesses such as Snowflake and Datadog have 114% and 108% in the "Rule of 40", respectively, and these companies are also the highest-priced SaaS companies traded at EV/Sales (LTM) multiples of 33.3x and 25.4x, respectively. Only a few of the largest US-listed SaaS companies have negative values of the sum of revenue growth + FCF margin. However, these companies are also the lowest-priced companies with EV/Sales (LTM) below 3x. Again, this highlights that US investors are using rule of 40 to evaluate companies. However, as mentioned earlier, investors should be careful when using "rule of 40" to evaluate early-stage companies such as many of the Danish-listed SaaS companies.

Company overview of key numbers

The table below summarizes key metrics and financials from the Danish SaaS companies using their 2021 financials and SaaS metrics as well as their 2022 guidance (ARR and ARR growth). We have made our own classification due to different business models with mixed revenue streams (e.g., subscription revenue and consultancy services). Overall, the pure-play SaaS group of 14 companies has ARR as the core part of revenue in 2021 (approx. 75% to +100% of total revenue). The mixed SaaS group constitutes 5 companies with different revenue streams. cBrain is not included in the table because the company does not report any ARR or other SaaS metrics. Due to different SaaS definitions of the stated metrics, investors should investigate all company reports to understand the differences. We also discuss this on pages 17 and 18.

DKKm	Market cap	ARR 21	ARR 22E	P/ARR 21 (x)	P/ARR 22E (x)	ARR growth 21	ARR growth 22E	Upselling (%)	Churn (%)	NRR (%)	CAC payback	Revenue	EBITDA	Cash
Pure-play SaaS														
Agillic	242.2	55.7	67.5	4.3x	3.6x	20%	21%	N/A	N/A	103%	8 months	52.8	0.7	20.6
DecideAct	54.9	8.7	18.8	6.3x	2.9x	145%	115%	62%	0%	162%	N/A	N/A	-17.0	12.8
Digizuite	192.8	32.1	42.2	6.0x	4.6x	25%	31%	9%	6%	102%	N/A	34.5	-32.2*	20.5
FastPassCorp	35.4	7.4	N/A	4.8x	N/A	15%	N/A	N/A	N/A	N/A	N/A	N/A	0.0	0.7
Hypefactors	48.3	7.8	N/A	6.2x	N/A	58%	N/A	N/A	N/A	N/A	N/A	6.8	-2.1	0.4
Impero	196.8	18.3	27.5	10.8x	7.2x	45%	50%	20%	6%	114%	13 months	15.1	-14.8	27.5
Konsolidator	202.4	13.6	20.5	15.0x	9.9x	70%	51%	N/A	4%	N/A	N/A	13.0	-22.5	17.2
MapsPeople	367.8	41.1	80.0	8.9x	4.6x	50%	95%	45%**	13%	131%**	10 months	28.8	-34.7	57.8
OrderYOYO	403.6	120.0	155.0	3.4x	2.6x	15%	29%	-3%	4%	93%	N/A	108.5	0.7***	45.9
Penneo	462.6	55.5	79.5	8.3x	5.8x	50%	43%	26%	2%	124%	17 months	54.3	-14.1	25.4****
Relesys	254.9	31.3	41.0	8.1x	6.2x	40%	31%	10%	10%	107%	10 months	34.5	-1.2	59.3
RISMA	143.5	15.3	26.5	9.4x	5.4x	21%	73%	5%	8%	97%	21 months	14.9	-15.9	20.0
SameSystem	164.4	42.1	59.5	3.9x	2.8x	40%	41%	7%	10%	103%	12 months	32.4	-22.1	43.2
Valuer	72.4	4.7	7.0	15.4x	10.3x	N/A	49%	N/A	N/A	N/A	N/A	N/A	-24.4	72.4
Average	**203.0**	**32.4**	**52.1**	**7.9x**	**5.5x**	**46%**	**53%**	**19%**	**6%**	**114%**	**13 months**	**36.0**	**-14.3**	**29.1**
Median	**194.8**	**24.8**	**41.6**	**7.2x**	**5.0x**	**40%**	**46%**	**9%**	**6%**	**105%**	**12 months**	**32.4**	**-15.4**	**20.6**

Note: Reporting methodologies and business models vary between the companies. We are using midrange in guidance intervals for the companies' own expectations. *Digizuite's earnings before financial expenses. **Upselling and net revenue retention rate for MapsPeople's key segment, MapsIndoors, which constitutes 71% of the total ARR. ***OrderYOYO's EBITDA before other external and other staff costs (normalized). ****In Q1 2022, Penneo raised net proceeds of DKK 59 million. This is included in the net cash calculation on page 15. Source: HC Andersen Capital and company reports 2021.

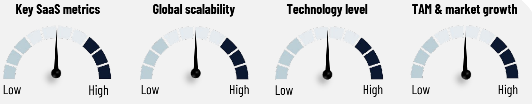
DKKm	Market cap	ARR 21	ARR 22E	P/ARR 21 (x)	P/ARR 22E (x)	ARR growth 21	ARR growth 22E	Upselling (%)	Churn (%)	NRR (%)	CAC payback	Revenue	EBITDA	Cash
Mixed SaaS														
Dataproces*	135.1	4.1	9.2	33.0x	14.7x	205%	125%	N/A	N/A	N/A	N/A	15.0	-6.3	24.9
Enalyzer**	18.8	15.7	N/A	1.2x	N/A	N/A	N/A	N/A	N/A	N/A	N/A	26.0	4.2	5.0
Nexcom***	26.1	8.0	N/A	3.3x	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13.4	-13.5	2.8
Risk Intelligence****	27.7	16.0	N/A	1.7x	N/A	15%	N/A	N/A	3%	N/A	6 months	18.8	-0.9	3.8
Simcorp*****	2.0760,3	2.063,0	2320.9	10.1x	8.9x	11%	13%	N/A	N/A	N/A	N/A	3.692,9	1.099,8	3.554,5
Average	**4.193,6**	**421.4**	**1.165,1**	**9.8x**	**11.8x**	**77%**	**69%**	**N/A**	**3%**	**N/A**	**6 months**	**753.2**	**216.7**	**718.2**
Median	**27.7**	**15.7**	**1.165,1**	**3.3x**	**11.8x**	**15%**	**69%**	**N/A**	**3%**	**N/A**	**6 months**	**18.8**	**-0.9**	**5**

Note: *Dataproces has a mixed business model with revenue from SaaS products and consulting (ARR constitutes 27% of total revenue). **Enalyzer's ARR constitutes 60% of total revenue). ***Nexcom only reports ARR (ARR constitutes approx. 60% of total revenue) . ****Risk Intelligence provides Data-as-a-Service using a SaaS model. *****SimCorp is the largest listed SaaS company in Denmark (ARR constitutes 56% of the total revenue). Source: HC Andersen Capital and company reports.

Company-specific HCA SaaS assessment

SaaS HCA assessment criteria – how to score SaaS companies

To assess a SaaS company, besides looking into the valuation of a company, we have developed a simple tool, focusing primarily on Danish-listed companies in earlier stages. For simplicity, we look at four key parameters which are shown in speedometers for each company. We do not score the importance between the four parameters; however, key SaaS metrics is obviously the most important criteria. Below, there is a short explanation of each of the assessment criteria, which will be unfolded further.



1) Key SaaS metrics, primarily looking at realized metrics such as growth, churn rate, net revenue retention rate, CAC payback period, and others.

2) Global scalability, looking into how global the company is geographically, and how scalable the software is in terms of onboarding and sales processes in a time perspective.

3) Technology level, implying that the software solution has AI, machine learning, deep learning, or other smart and structured technology improving scalability and providing unique features for end-users.

4) Total addressable market (TAM) and future market growth, meaning that the company is exposed to different market sizes, and market growth rates driven by key trends, which will provide either headwinds or tailwinds going forward.

Key SaaS metrics: If SaaS businesses are transparent in their reporting, investors should be able to follow the business model by monitoring relatively few key metrics. We have highlighted the most important ones which are ARR (subscription revenue), growth, churn rate, upselling/uplift on existing customers, net revenue retention rate, and CAC payback.

i) Growth: As mentioned earlier, growth has been the key factor and has been highly correlated with EV/Sales and EV/ARR multiples. However, this correlation has somewhat decreased as the interest rates have increased, and unprofitable growth stocks have seen significant multiple contractions. That being said, growth is still the key ingredient for SaaS companies. We are comparing growth rates (LTM and NTM) with median values and taking the company sizes into perspective, i.e. smaller companies should grow more than larger companies. **ii) Churn rate** measures how much of the customer base that leaves the company over a given time period. A churn rate below 5-10% is assessed to be very good, implying that customers are theoretically staying, for at least 10-20 years. This metric is more a sign of stickiness and satisfaction. **iii) Upselling/cross-selling** or "expansion" is another way to measure the "customer satisfaction" as well as the functionalities of the solution. Many SaaS companies have a so-called land & expand strategy, aiming to win large organizations with the possibility to grow the subscription agreement through more users on the platform. **iiii) Net revenue retention rate (NRR)** summarizes how much the company has been able to grow its existing customer base, i.e., the sum of upselling/cross-selling/downgrading and churned customers over a given time period. Danish data suggests that NRR above 103% (median) is good, while median values in US is approx. 110%. **iiiii) CAC payback period** measures the time it takes for a SaaS company to earn their customer acquisition costs back. Many Danish-listed companies are using "net new ARR" to calculate when there is sufficient ARR to cover the CAC, often measured in months. However, US-listed companies are typically measured on a gross-margin adjusted CAC payback. There are many other relevant metrics such as CLV/CAC ratio, which also is considered.

US SaaS sector (median)	DK SaaS sector (median)
Growth rate (LTM): 33%	Growth rate (LTM): 40%
Growth rate (NTM): 26%	Growth rate (NTM): 47%
Gross margin: 74%	Gross margin: 77%
Net Revenue Retention Rate: 120%	Net Revenue Retention Rate: 103%
CAC Payback: 23 months	CAC Payback: 12 months

Source: [9]Clouded Judgement, HC Andersen Capital and company reports 2021.

Global scalability: In the SaaS assessment of "global scalability", we are also looking at the two main criteria; how global is the solution geographically and how scalable is the specific SaaS solution to shed light on the potential. We do not have a ranking system, yet companies with solutions outside its home market obviously is scalable. To measure scalability, we also focus on the sales process, and more importantly, the onboarding time of the solution. A company with a very high score is, for instance, Zoom Video Communications with its scalable solution in terms of its global presence and a very fast onboarding time. With B2B software solutions, scalability is typically lower, and prices are higher which somewhat limit the scalability but increases the stickiness.

Technology level: Technology has an important influence on the attractiveness of the SaaS company, meaning that proprietary technology, AI, machine learning, integrations, etc. are key factors when evaluating the company. The market has also valued high-tech companies such as Datadog and Coupa Software at attractive levels.

A SaaS company with simple technology can easier be replicated by larger technology companies. With more proprietary technology, companies can create a competitive advantage by having a strong solution. According to a survey from Gartner[11], over 40% of leading companies were expected to deploy AI solutions by the end of 2020. However, "AI" and "machine learning" are buzz words that investors should evaluate in a critical way when assessing SaaS companies.

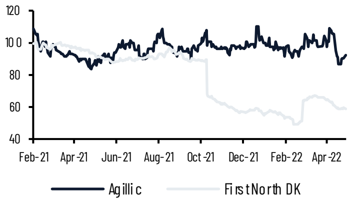
Total addressable market (TAM) and future market growth: The market size and future market growth rates are also important determinants for evaluating SaaS companies. If a SaaS company has a global presence, it is fair to use global market reports within the company's market segment that the company operates. However, most Danish SaaS companies are primarily present in the Nordics or in larger parts of Europe. This means that market reports and estimations could differ a lot. In relation to the recent IPO wave in the past two years both from a global and local perspective, there has also been some criticism about the estimations of the total addressable market (TAM) since the numbers have been highly inflated.

Looking at future growth rates, some SaaS companies are situated in a market that grows 20-30% annually, which supports the company's growth rates and increases its attractiveness of the company. Despite having tailwinds from the environment, investors should also critically evaluate if the company manages to grow above the market.

Agillic

Market: First North DK | Ticker: AGILLIC | Share price (DKK): 23.60 | Market cap (DKKm): 242.2 | Net debt (DKKm): 6.7 | Enterprise value (DKKm): 248.9

Share information



YTD:	-8.53%	1 year:	8.26%
1 month:	-11.61%	Since IPO*:	-37.89%

Note: *IPO date was 22 March 2018 (subscription price of DKK 38.00)
We apply the closing price from 23 May 2022

Financials

(DKKm)	2020	2021	2022E
Revenue	50.5	52.8	60*
Revenue growth	*-6%*	*5%*	*14%*
EBITDA	0.3	0.7	0*
EBITDA margin	*0.6%*	*1.3%*	*0%*
ARR	46.5	55.7	67.5*
ARR growth	*-16%*	*20%*	*21%*
P/ARR (x)	5.2x	4.3x	3.6x
EV/Sales (x)	4.9x	4.7x	4.1x

Note: *Midpoint in Agillic's own guidance

Key SaaS metrics FY 2021

ARR	ARR growth	Churn	Upselling
55.7	20	N/A	N/A
(DKKm)	(%)	(%)	(%)

NRR	CAC payback	Gross margin	ARPA
103*	8**	85	600
(%)	(months)	(%)	(DKKk)

Note: *103% was presented in Agillic's investor presentation. **CAC payback period is gross-margin adjusted.

Company description

Agillic is a Danish SaaS company offering B2C businesses an omnichannel marketing automation platform in which marketers can work with data-driven insights to create, automate and send personalized communication to millions. Agillic had 47 employees at the end of Q1 2022, and the company is headquartered in Copenhagen with sales offices in Berlin, Malmö, Oslo, and development units in Club-Napoca and Kyiv. In Q1 2022, Agillic achieved a total ARR of DKK 58.8 million.

Investment case

Every day, companies are competing to get customers' attention due to an increasing number of digital channels such as digital ads, e-mails, and SMS. Agillic's business model is a good fit for the new digital world with its omnichannel marketing automation platform, personalizing content through complex algorithms. With Agillic's usage-based business model, revenue increases with customer databases and the number of channels.

The marketing automation software market is expected to triple from 2020 to 2027, corresponding to a CAGR of approx. 18%. Growth rates are supported by increasing omnichannel focus and companies shifting to a more digital business and sales model.

In 2021, Agillic delivered on its turnaround plan, growing ARR double-digit (20% in 2021 vs. -16% in 2020), being operationally profitable (EBITDA of DKK 0.7 million), and achieving positive cash flow from operations (free cash flow was approx. DKK -5 million including software development costs). This shows that Agillic's strategy, cooperating with best-of-breed technology partners and global solution partners, pays off.

Agillic is currently traded at an ARR multiple of 4.1x (LTM), which is below the Danish SaaS sector of 6.3x (The SaaS HCA Index) and the US SaaS sector of 9.3x (The SaaS Capital Index based on data at the end of April 2022), partly explained by the growth rate.

Key investment reasons

With an increasing focus on first-party data, which Agillic helps B2C companies to get the most out of, combined with the ongoing digital transformation, Agillic is well-positioned with its omnichannel marketing automation platform.

Looking into the numbers in recent quarters, Agillic has announced a record high customer intake, which shows that Agillic's turnaround momentum has continued into 2022 with increasing ARR growth rates.

In 2022, Agillic expects to reach an ARR between DKK 65-70 million, corresponding to a growth rate of 17-26%. The company's EBITDA guidance for 2022 is between DKK -3 million and 3 million which is in line (midrange) with its 2021 EBITDA result. Besides Agillic's high customer intake in recent quarters, guidance is further supported by Agilic's cost-effective partner strategy and increasing internationalization targeting larger customers.

Key investment risks

Agillic has been more cyclical than other SaaS companies due to its client base in travel and hospitality, however, this is somewhat mitigated by a larger and more diversified customer mix.

Agillic is subject to competition from major international competitors and new entrants in the marketing automation software market. The market is characterized by large international providers such as Adobe, Salesforce, HubSpot, and Oracle as well as new fast-growing competitors.

Looking at the cash position, Agillic ended 2021 with DKK 20.6 million, however, this cash position declined to DKK 7.5 million at the end of Q1 2022, primarily due to repayment of a COVID-19 loan and postponement of payments from some customers. Agillic does not expect to raise new capital in 2022, yet there is a risk that Agillic may need new capital for investments in the future.

Key SaaS HCA assessment

Key SaaS metrics

Global scalability

Technology level

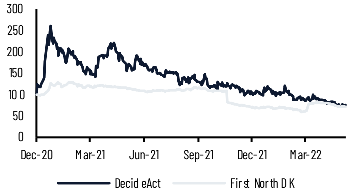
TAM & future market growth

DecideAct

DECIDEACT

Market: First North DK | Ticker: ACT | Share price (DKK): 6.16 | Market cap (DKKm): 54.9 | Net cash (DKKm): 6.4 | Enterprise value (DKKm): 48.5

Share information



YTD:	-25.33%	1 year:	-56.00%
1 month:	-3.45%	Since IPO*:	-24.42%

Note: *IPO date was 16 December 2020 (subscription price of DKK 8.15)
We apply the closing price from 23 May 2022

Financials

(DKKm)	2020	2021	2022E
Revenue	N/A	N/A	N/A
Revenue growth	*N/A*	*N/A*	*N/A*
EBITDA	-4.6	-17.0	N/A
EBITDA margin	*N/A*	*N/A*	*N/A*
ARR	3.6	8.7	18.8*
ARR growth	*N/A*	*145%*	*115%*
P/ARR (x)	15.3x	6.3x	2.9x
EV/Sales (x)	N/A	N/A	N/A

Note: *Midpoint in DecideAct's own guidance (80-150% growth)

Key SaaS metrics FY 2021

ARR	ARR growth	Churn	Upselling
8.7	145	0	62*
(DKKm)	(%)	(%)	(%)

NRR	CAC payback	Gross margin	ARPA
162	N/A	N/A	N/A
(%)	(months)	(%)	(DKKk)

Note : *We calculate upselling from "contribution to ARR growth from existing customers" stated in the annual report 2021, which is 43% of 145% ARR growth

Company description

DecideAct was founded in 2014 by CEO Flemming Videriksen and CSO Bjarni Snæbjörn Jónsson. The company is headquartered on Bornholm, Denmark. DecideAct has developed a cloud-based SaaS solution for Strategy Execution Management (SEM) that makes it possible to move manual execution and follow-up of strategies into a software platform. In addition, the company has also launched a new ESG module. DecideAct has managed to onboard customers across several industries in Iceland, Denmark, France, and Canada.

Investment case

DecideAct solves a key problem with an estimated USD 3 million being wasted on failed strategies every minute in corporate businesses. In relation to that, 3 out of 4 strategies or transformation projects either fail to reach the goal or run into the sand. With DecideAct's software solution, the company helps solve this problem by tracking and following strategies to the door in a structured way rather than in Excel sheets and manual workflows.

Providing horizontal software that targets all verticals, since all companies face strategic challenges, DecideAct targets a very large market. According to the company, the market size for Strategy Execution Management (SEM) could potentially be the size of the CRM market in the future, which globally amounts to USD 48 billion. However, given DecideAct's current life-cycle stage and existing markets in Iceland, Denmark, France, and Canada, a more relevant number to use is the number of addressable companies in the Nordics. Alone in the Nordic region, up to 10,000 companies are estimated to demand a digital tool for strategy execution.

DecideAct is currently traded at an ARR multiple of 6.3x (LTM), which is in line with the Danish SaaS sector of 6.3x (The SaaS HCA Index) and the US SaaS sector of 9.3x (The SaaS Capital Index based on data at the end of April 2022). Taking the growth rate into account, DecideAct's grew ARR by 145% in 2021 which is the highest rate in the Danish SaaS sector, however, also from a lower base.

Key investment reasons

DecideAct taps into a new Strategy Execution Management (SEM) market with no large market leaders, implying that the company has a huge potential to gain a large share of the market.

In 2021, the company has demonstrated its execution by growing its customer base by 131%. Despite being an early-stage SaaS company with a relatively low ARR of DKK 8.7 million, DecideAct has managed to invest in the organization and at the same time build up its customer base in different countries with zero churn. The company's future growth potential is also highlighted in its expectations of growing total ARR between 80% and 150% in 2022.

DecideAct has a solid foundation in Denmark and Iceland with both public customers and private customers in several industries. In the past year, DecideAct also gained momentum in France and Canada with customer contracts and partnerships that open these markets and demonstrate the scalability of the software platform.

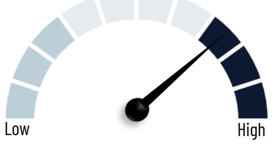
Key investment risks

DecideAct's early-stage phase is associated with higher risk as well as a continuous need for capital to fuel its growth. In July 2021, DecideAct raised DKK 14.8 million in a private placement, and the company also secured a DKK 6 million loan facility from Vækstfonden. At the end of 2021, the cash balance was DKK 12.8 million, and DecideAct has strengthened its balance sheet further with a capital increase of DKK 5.2 million in March 2022 from one of its major investors. However, there is a risk that the company will raise additional capital in the future to reach its ambitions which may be difficult with the current market sentiment.

Scaling up a relatively new organization in an immature market can be challenging due to a changing market and competitive situation. Thus, the readiness of potential customers can take longer than expected, implying that DecideAct's strategic and financial plans may be delayed, and the ARR guidance fails to be achieved.

Key SaaS HCA assessment

Key SaaS metrics



Global scalability

Technology level

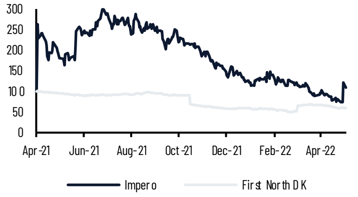
TAM & future market growth

Note: Despite having the highest ARR growth across the Danish SaaS companies in 2021, DecideAct's "Key SaaS metrics" assessment score is not the highest in the sector. The reason is that growing +100% from a smaller base is easier than for more mature SaaS companies. If the company manages to keep growth rates and other SaaS metrics at the same level, the track record and additional transparency will increase the assessment even higher.

Impero

Market: First North DK | Ticker: IMPERO | Share price (DKK): 10.55 | Market cap (DKKm): 196.8 | Net cash (DKKm): 27.5 | Enterprise value (DKKm): 169.3

Share information



YTD:	-21.85%	1 year:	-39.85%
1 month:	5.71%	Since IPO*:	8.76%

Note: *IPO date was 22 April 2021 (subscription price of DKK 9.70)
We apply the closing price from 23 May 2022

Financials

(DKKm)	2020	2021	2022E
Revenue	9.9	15.1	N/A
Revenue growth	*N/A*	*53%*	*N/A*
EBITDA	-3.3	-14.8	-20.0*
EBITDA margin	*-33%*	*-98%*	*N/A*
ARR	12.6	18.3	27.5*
ARR growth	*68%*	*45%*	*50%*
P/ARR (x)	15.6x	10.8x	7.2x
EV/Sales (x)	17.1x	11.2x	N/A

Note: *Midpoint in Impero's own guidance

Key SaaS metrics FY 2021

ARR	ARR growth	Churn	Upselling
18.3	45.2	5.6	19.8
(DKKm)	(%)	(%)	(%)

NRR	CAC payback	Gross margin	ARPA
114.2	13*	91	160
(%)	(months)	(%)	(DKKk)

Note: *(CAC in 2021 / Average ARR Per Account (first 12 months) in 2021) x 12

Company description

Impero's software was developed in 2014 by co-founders Jacob Engedal Sørensen and Morten Balle. Before that, the founders worked in Big4 accounting firms and identified a need for an easy-to-use digital compliance management platform. Impero's SaaS platform can be used for all types of risks and controls, and the company serves more than 100 customers with HQ in 10 different countries. Outside Denmark, Impero has a solid footprint in the DACH (Germany, Austria, Switzerland) region.

Investment case

Impero's B2B compliance management platform enables companies and organizations to manage compliance through automation of risk management, control management, documentation, and reporting.

The global GRC market is estimated to grow with a CAGR of 10-15% towards 2025. The GRC software market is supported by key drivers such as companies' fear of reputational issues and fines, cost savings from digitalization in compliance management, and higher demand for top management to ensure the company's role as a stakeholder in society.

Impero has onboarded large Northwestern European corporations, including Volkswagen Group, SimCorp, and GroupM. Targeting larger corporations, Impero has a land & expand strategy, measured by upselling of approx. 20% in 2021. With a proven go-to-market strategy partnering up with leading accounting firms (Big4), Impero is able to increase its sales scalability and enter new markets using the accounting firms as steppingstones.

Impero is currently traded at an ARR multiple of 10.4x ARR (LTM), which is above the Danish SaaS sector of 6.3x (The SaaS HCA Index) and the US SaaS sector of 9.3x (The SaaS Capital Index based on data at the end of April 2022). Taking growth into perspective, Impero has reported a higher growth rate than the sector median.

Key investment reasons

Impero has historically reported strong SaaS metrics with high growth rates. In 2021, the company grew in line with its IPO expectations, corresponding to an ARR growth rate of 45% (68% in 2020). Impero has also managed to achieve a sustainable churn rate of approx. 6% in 2021 (7% in 2020).

Impero's proven land & expand strategy is a key factor in the company's future growth. Going forward, new markets are expected to be opened through Impero's partner-based go-to-market strategy with Big4 accounting firms.

With more transparent reporting, Impero showed that 17 of 33 new customers in 2021 were from the DACH region, implying a growth rate of 91% in 2021 compared to 2020. Looking ahead, there is considerable room to grow in this region with a newly opened regional office in Germany. For perspective, the DACH region constituted 36% of the total ARR in 2021 (27% in 2020).

Key investment risks

The competitive situation in the GRC market is high and characterized by the fact that there are no global or regional market leaders. This implies that Impero is in competition with many other smaller players that cover different GRC areas.

Impero's cash position was DKK 27.5 million at the end of 2021, and the company has an EBITDA guidance of DKK -22 million to DKK -18 million in 2022 (proxy for FCF). To fulfill the potential of the growth strategy outlined in the IPO plan, Impero may need additional funding to invest in growth activities within the next years.

In the current scaling phase, Impero is dependent on retaining employees and attracting new commercial and technical employees to achieve its growth ambitions. Moreover, opening new markets outside Impero's existing markets requires well-established partnerships, implying potential delays in expansions.

Key SaaS HCA assessment

Key SaaS metrics

Global scalability

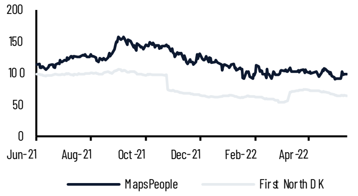
Technology level

TAM & future market growth

MapsPeople

Market: First North Premier DK | Ticker: MAPS | Share price (DKK): 6.70 | Market cap (DKKm): 367.8 | Net cash (DKKm): 37.7 | Enterprise value (DKKm): 330.1

Share information



YTD:	-15.83%	1 year:	-1.47%
1 month:	4.69%	Since IPO*:	-1.47%

Note: *IPO date was 2 June 2021 (subscription price of DKK 6.80)
We apply the closing price from 23 May 2022

Financials

(DKKm)	2020	2021	2022E
Revenue	25.0	28.8	N/A
Revenue growth	*N/A*	*15%*	*N/A*
EBITDA	-9.6	-34.7	N/A
EBITDA margin	*-38%*	*-120%*	*N/A*
ARR	27.3	41.1	80.0*
ARR growth	*N/A*	*50%*	*95%*
P/ARR (x)	13.5x	8.9x	4.6x
EV/Sales (x)	13.2x	11.5x	N/A

Note: *Midpoint in MapsPeople's own guidance

Key SaaS metrics FY 2021

ARR	ARR growth	Churn	Upselling
41.1	50	13	45***
(DKKm)	(%)	(%)	(%)

NRR	CAC payback	Gross margin	ARPA
131*	10*	93	40**
(%)	(months)	(%)	(DKKk)

Note: *Numbers from MapsPeople's main product MapsIndoors (71% of total ARR). See full note at the bottom of this page

Company description

MapsPeople is a Software-as-a-Service (SaaS) company located with HQ in Aalborg and offices in Copenhagen, München, Austin, and Singapore. MapsPeople was founded in 1997 with mapping being the core of the business. In 2009, the company changed to a SaaS business model. MapsPeople has two primary revenue streams, MapsIndoors and Google Maps. MapsIndoors, a leading indoor mapping platform, is the main product with 71% of the total ARR and the highest growth rate of 78% in 2021.

Investment case

With MapsIndoors, MapsPeople solves key problems such as helping corporate offices to optimize resources and helping travelers find their way to the gate in airports. Serving more than 790 end customers within the MapsIndoors business in more than 30 countries and across verticals such as corporate offices, sports venues, conventions, hospitals, and others, MapsPeople has proven its global presence, scalability, and partner-based go-to-market strategy.

MapsPeople taps into a large total addressable market (TAM) valued at DKK 21.7bn with an expected CAGR of approx. 20% towards 2025. Despite being negatively affected by COVID-19 effects and churn in the conventions vertical, the global market for indoor mapping and positioning is driven by the digital transformation trend and structural changes such as altered working habits from COVID-19. This has promoted dynamic seating and thus indoor mapping in verticals such as corporate offices.

MapsPeople is currently traded at an ARR multiple of 8.1x (LTM), which is above the Danish SaaS sector (The SaaS HCA Index) of 6.3x and below the US SaaS sector of 9.3x (The SaaS Capital Index based on data at the end of April 2022). With MapsPeople's total ARR growth rate of 50% and significantly higher expectations in both 2022 and 2023, the growth rate is above the median growth rate of the Danish SaaS sector.

Key investment reasons

MapsPeople has the potential to be a category leader in a fast-growing digital indoor mapping market driven by secular growth trends. Being the only Nordic Google Maps Partner in the Nordics also confirms MapsPeople's name in the market, and the partnership may also lead to new customers in the MapsIndoors segment.

Today, the customer portfolio consists of some of the largest companies in the world, which validates MapsPeople's technology and opens for future upselling potential. A land & expand strategy is already shown in MapsPeople's current numbers with a net revenue retention rate of 131% in 2021.

In 2022, MapsPeople has the ambition to reach a total ARR in the range of DKK 75-85 million, corresponding to a growth of 82-107%. Given its current size, such a growth rate is at the top of the growth sector looking across the Nordic Software-as-a-Service space.

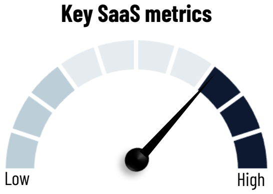
Key investment risks

MapsPeople is in a scaling phase in a fast-growing and changing competitive environment with many smaller players in a highly fragmented market. Recently, however, some competitors have been acquired by larger companies. Therefore, there is a risk that additional large global technology companies will enter the competition with significant financial resources and increase competition. This implies that MapsPeople is expected to invest significantly into growth activities to stay on top of a winner-takes-all market.

Based on the mentioned factors above as well as its current cash position, MapsPeople may raise additional capital within the next 12 months to continue investing in growth activities such as sales and marketing efforts to continue its growth momentum. If this fails, there is a significant risk that MapsPeople also will fail to reach its ambitious ARR guidance.

Key SaaS HCA assessment

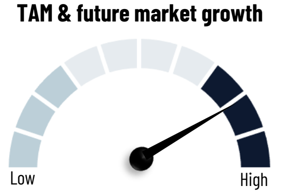
Key SaaS metrics



Global scalability

Technology level

TAM & future market growth

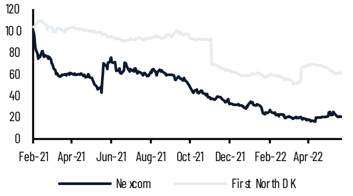


SaaS metrics note: *Numbers from MapsPeople's main product MapsIndoors (71% of total ARR). CAC payback is calculated as CAC / Average ARR per customer in the previous 6 months. **ARPA is calculated as the total ARR / total number of customers. ***The company reports a 50% uplift in MapsIndoors' existing customers, including an uplift in 2021 new business (5 percentage points higher than 45%).
Disclaimer: HC Andersen Capital receives payment from MapsPeople for a Digital IR/Corporate Visibility subscription agreement. This is not a piece of advice to buy, not to buy, sell, or not to sell shares.

Nexcom

Market: First North DK | Ticker: NEXCOM | Share price (DKK): 2.39 | Market cap (DKKm): 26.1 | Net debt (DKKm): 12.3 | Enterprise value (DKKm): 38.4

Share information



YTD:	-36.27%	1 year:	-71.03%
1 month:	-1.24%	Since IPO*:	-79.83%

Note: *IPO date was 29 January 2021 (subscription price of DKK 11.85)
We apply the closing price from 23 May 2022

Financials

(DKKm)	2020	2021	2022E
Revenue	8.1	13.4	21.5*
Revenue growth	*16%*	*65%*	*60%*
EBITDA	0.8	-13.5	-6.7*
EBITDA margin	*10%*	*-99%*	*-321%*
ARR	N/A	8.0	N/A
ARR growth	*N/A*	*N/A*	*N/A*
P/ARR (x)	N/A	3.3x	N/A
EV/Sales (x)	4.7x	2.9x	1.8x

Note: *Midpoint in Nexcom's own guidance

Key SaaS metrics FY 2021

ARR	ARR growth	Churn	Upselling
8.0	N/A	0	N/A
(DKKm)	(%)	(%)	(%)

NRR	CAC payback	Gross margin	ARPA
N/A	N/A	29%	N/A
(%)	(months)	(%)	(DKKk)

Company description

Nexcom is a software company that develops and provides solutions for automation and optimization of customer service functions in larger B2C companies. Nexcom, as we know it today, was established in 2020 as a result of mergers and acquisitions, after the company, Heyware, was merged into Nexcom in 2020. Since Nexcom's IPO in January 2021, Nexcom has scaled its organization from 5 employees to 21 employees. Today, Nexcom has HQ in Copenhagen and a sales office in Atlanta, United States.

Investment case

Nexcom is a software company providing the two software platforms, eTray and RevealCX. eTray is a workflow management software for processing and automating workflows and tasks, designed to streamline customer service centers and increase quality. RevealCX is a SaaS solution developed for quality monitoring in larger customer service centers, which increases effectiveness in customer contacts.

Customer service centers face challenges such as errors from manual processes, high employee turnover rate leading to loss of knowledge, and complex processes with many different customer interactions. Nexcom solves the challenges by automating manual workflows and monitoring customer conversations with AI and machine learning to assist the correct answer.

Market growth rates of 15-30% are supported by 2-3 times efficiency gains (industry standards) and the high employee turnover rate in the industry.

Nexcom does not report all SaaS metrics, and ARR constitutes approx. 60% of the total revenue. Nexcom is currently traded at an ARR multiple of 3.3x, which is below the Danish SaaS sector of 6.3x (The SaaS HCA Index) and below the US SaaS sector of 9.3x (The SaaS Capital Index based on data at the end of April 2022). This is partly explained by Nexcom's challenging 2021.

Key investment reasons

Nexcom has proven software solutions with large customers and long customer relationships with no churn, maintaining the same customer base for the past 10 years. Despite fewer new customers over the recent year, the long customer relationships demonstrate high stickiness.

Long customer contracts of 3 years ensure revenue visibility, and Nexcom's current customer contracts have a total value of DKK 26.7 million until the end of 2024.

In total, the company serves customers across 7 countries in Europe and the United States, serving 40,000 users and supporting 23 languages demonstrating scalability. The customer portfolio includes well-known large companies such as Nuuday, Telenor, and Groupon, and Nexcom has managed to increase the size of some contracts, which opens for further upsell potential.

In 2021, Nexcom launched its AI solution, RevealCX Boost, which is expected to increase sales going forward.

Key investment risks

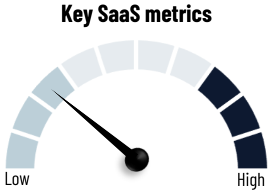
The key investment risk is Nexcom's current cash position and debt profile. Nexcom has announced an expected capital increase of DKK 12-15 million in Q2 2022 to reduce its debt and pay one of its short-term loans of DKK 7 million which runs until the end of June 2022. Furthermore, the additional capital is expected to finance Nexcom's operations and expansion.

As a scale-up company, Nexcom has invested significantly in the organization over the last year. Recruitment delays affected the revenue guidance in 2021 as the pipeline building and training was delayed. This can potentially also have a negative effect on Nexcom's guidance of growing revenue by 60% in 2022.

Additionally, Nexcom has a relatively long sales process of 8-12 months due to the large contracts which may be longer affecting the company's financial situation.

Key SaaS HCA assessment

Key SaaS metrics



Global scalability

Technology level

TAM & future market growth

OrderYOYO

Market: First North DK | Ticker: YOYO | Share price (DKK): 7.00 | Market cap (DKKm): 403.6 | Net cash (DKKm): 19.5 | Enterprise value (DKKm): 384.1

Share information

YTD:	-44.44%	1 year:	-34.71%
1 month:	-21.17%	Since IPO*:	-48.53%

Note: *IPO date was 2 July 2021 (subscription price of DKK 13.60)
We apply the closing price from 23 May 2022

Financials

(DKKm)	2020	2021	2022E
Revenue	76.3	108.5	127.5*
Revenue growth	*101%*	*42%*	*18%*
EBITDA**	9.7	0.7	10.0*
EBITDA margin	*13%*	*1%*	*8%*
ARR	104.0	120.0	155.0*
ARR growth	*130%*	*15%*	*29%*
P/ARR (x)	3.9x	3.4x	2.6x
EV/Sales (x)	5.0x	3.5x	3.0x

Note: *Midpoint in OrderYOYO's own guidance
**EBITDA before other external and other staff costs (normalized)

Key SaaS metrics FY 2021

ARR	ARR growth	Churn	Upselling
120	15.4	3.8*	-2.9**
(DKKm)	(%)	(%)	(%)

NRR	CAC payback	Gross margin	ARPA
93	N/A	85	N/A
(%)	(months)	(%)	(DKKk)

Note: *Summing up churn in each 2021 quarter / Dec 2020 ARR
**Summing up uplift (negative and positive) in each 2021 quarter / Dec 2020 ARR

Company description

OrderYOYO is a leading European Software-as-a-Service (SaaS) company providing a white-label online ordering, payment, and marketing software solution for restaurants. With a usage-based business model, the solution enables smaller takeaway restaurants, which already have their own delivery service, to build their own-branded online presence from their OrderYOYO-powered website or app. As a result, restaurants get insights into their own customers' behavior and avoid paying large commissions to food portals.

Investment case

Up to 90% of all orders in the takeaway industry are recurring orders from loyal consumers. OrderYOYO has created a software solution that makes it possible to create direct traffic between the consumers and takeaway restaurants, as opposed to food portals such as Just Eat and Wolt. This implies that the takeaway restaurants achieve higher consumer loyalty and at the same time pay a lower commission fee for OrderYOYO's software platform compared to the food portals.

OrderYOYO taps into a European addressable market of more than DKK 50bn measured by end-user revenue, also called gross merchandise value (GMV), which is the total value sold by the restaurants. Looking at current markets, OrderYOYO is present in Denmark, Ireland, the United Kingdom, and recently also Germany through the acquisition of Happz.

OrderYOYO differentiates itself from competitors by having four advantages; 1) defined restaurant partner segment, 2) scale, 3) service and operational support, and 4) ongoing innovation.

OrderYOYO is currently traded at an ARR multiple of 3.4x (LTM), which is below the Danish SaaS sector of 6.3x (The SaaS HCA Index) and the US SaaS sector of 9.3x (The SaaS Capital Index based on data at the end of April 2022). This is partly explained by decreasing growth rates and a challenging 2021.

Key investment reasons

OrderYOYO is well-capitalized following a private placement in mid-March from institutional investors of approx. DKK 40 million combined with a loan facility from Vækstfonden of DKK 40 million. As a result, OrderYOYO now has the cash position to continue its European growth strategy and take advantage of new market opportunities (M&A) that may arise in the market.

With more than 5,000 restaurant partners operated by OrderYOYO in Denmark, Germany, the United Kingdom, and Ireland, OrderYOYO has managed to onboard and support thousands of customers, indicating a further scaling potential.

OrderYOYO is the largest First North-listed SaaS company in Denmark. In 2021, the company reported an ARR of DKK 120 million, corresponding to a growth rate of 15.4%. In 2022, OrderYOYO expects an ARR guidance in the range of DKK 140-170 million, corresponding to a growth in the range of approx. 17-42%.

Key investment risks

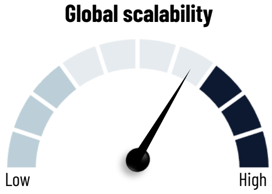
There is a risk that OrderYOYO can lose its competitive position to either existing players or new entrants. Large players such as Flipdish were for instance recently funded by the Chinese tech giant, Tencent. The risk of competition from food portals is assessed to be lower due to differences in business models. OrderYOYO is taking a lower commission fee, and food portals are focusing on the end-users, adding restaurants in the portal.

After a strong 2020 from the COVID-19 restrictions, OrderYOYO has experienced challenging market conditions in the United Kingdom regarding staff shortages and supply chain challenges. The challenges combined with a slowdown of online takeaway ordering post-COVID-19 resulted in downgraded guidance for 2021-2023. With the current market conditions and uncertainty regarding cost inflation, there is a risk that OrderYOYO will face new challenges and consequently not reach its guidance.

Key SaaS HCA assessment

Key SaaS metrics

Global scalability



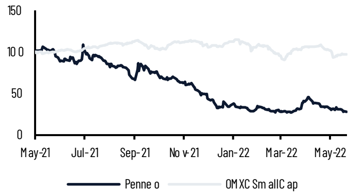
Technology level

TAM & future market growth

Penneo

Market: OMXC Small Cap | Ticker: PENNEO | Share price (DKK): 14.62 | Market cap (DKKm): 462.6 | Net cash (DKKm): 56.9 | Enterprise value (DKKm): 405.7

Share information



YTD:	-20.28%	1 year:	-71.88%
1 month:	-15.98%	Since IPO*:	32.19%

Note: *IPO date was 6 June 2020 (subscription price of DKK 11.06)
We apply the closing price from 23 May 2022

Financials

(DKKm)	2020	2021	2022E
Revenue	35.5	54.3	N/A
Revenue growth	*29%*	*53%*	*N/A*
EBITDA	-8.7	-14.1	-17.5*
EBITDA margin	*-25%*	*-26%*	*N/A*
ARR	37	55.5	79.5*
ARR growth	*48%*	*50%*	*43%*
P/ARR (x)	12.5x	8.3x	5.8x
EV/Sales (x)	11.4x	7.5x	N/A

Note: *Midpoint in Penneo's own guidance

Key SaaS metrics FY 2021

ARR	ARR growth	Churn	Upselling
55.5	50	2	26
(DKKm)	(%)	(%)	(%)

NRR	CAC payback	Gross margin	ARPA
124	17*	82	23.1
(%)	(months)	(%)	(DKKk)

Note: *((Average CAC / Average ARR for new customers (last 12 months)) x 12

Company description

Penneo was founded in 2014 by six entrepreneurs with the ambition to support primarily the auditing industry with digital document signatures by replacing pen and paper with a digital alternative. Today, Penneo is a Danish SaaS company, automating and digitalizing workflows with the offering of two main solutions within digital signing and onboarding of clients (Know-Your-Customer). Penneo serves more than 2,400 customers, and Penneo has approx. 90 employees with headquarter in Copenhagen.

Investment case

Penneo has evolved itself from being a digital signature platform to a RegTech platform with an ecosystem of automation solutions in Anti-Money Laundering (AML) and Know-Your-Customer (KYC) regulated verticals such as auditors and financial institutions. Penneo has a solid footprint in the Nordics with all Big 10 accounting firms as customers which ensures recurring revenue and stickiness through network effects. Additionally, Penneo's relationship with Big 10 accounting firms in the Nordics is also a key part of Penneo's European expansion and go-to-market strategy.

The global markets within digital signature and KYC are expected to grow with a CAGR of 31% and 22% towards 2026, respectively. Market growth rates are supported by the digitalization trend and increasing regulative demands.

Despite a competitive environment and large global competitors, Penneo differentiates itself by having a narrow focus on a few regulated verticals.

Penneo is currently traded at an ARR multiple of 7.9x (LTM), which is above the Danish SaaS sector of 6.3x (The SaaS HCA Index) and below the US SaaS sector of 9.3x (The SaaS Capital Index based on data at the end of April 2022). Taking Penneo's size into a Danish SaaS perspective, Penneo has among the highest growth rates.

Key investment reasons

Penneo's business model and solutions are proven by strong SaaS metrics with a track record of growing ARR by approx. 50% annually in the past years combined with a low churn rate of 2-3%. Looking across the Danish SaaS sector, Penneo's key SaaS metrics have outperformed the sector.

Future growth is supported by i) Roll out the KYC products to existing audit customers in the Nordics, ii) Penetrate the financial institutions vertical in Denmark, iii) Continuing market development in European countries becoming the de facto standard for auditors in Europe, supported by 97% growth in ARR from foreign markets in 2021 (constituted 26% of the total ARR in 2021).

There has been consolidation in the industry, and Penneo could be a takeover candidate with the current valuation for larger global leaders with less presence in the Nordics.

Key investment risks

Employee churn of key personnel may affect Penneo's ability to operate and implement its internationalization strategy, potentially leading to delays.

Penneo operates in a market with high competition from several local and global companies, including large companies such as DocuSign with extensive market reach. The competitive situation may affect Penneo's position in existing markets as well as its European expansion, leading to lower growth rates.

With the recent capital increase of approx. DKK 59 million from institutional investors, Penneo has secured sufficient financing to continue its operations for at least 12-24 months. However, Penneo expects to continue investing in growth opportunities that may require additional financing in the future. For perspective, Penneo's free cash flow was DKK -23.6 million in 2021.

Key SaaS HCA assessment

Key SaaS metrics

Global scalability

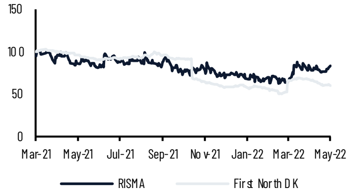
Technology level

TAM & future market growth

RISMA

Market: First North DK | Ticker: RISMA | Share price (DKK): 7.94 | Market cap (DKKm): 143.5 | Net cash (DKKm): 19.2 | Enterprise value (DKKm): 124.3

Share information



YTD:	11.83%	1 year:	-3.64%
1 month:	0.50%	Since IPO*:	-16.42%

Note: *IPO date was 23 March 2021 (subscription price of DKK 9.50)
We apply the closing price from 23 May 2022

Financials

(DKKm)	2020	2021	2022E
Revenue	13.0	14.9	N/A
Revenue growth	*12%*	*15%*	*N/A*
EBITDA	-3.6**	-15.9**	-18.0*
EBITDA margin	*-28%*	*-107%*	*N/A*
ARR	12.7	15.3	26.5*
ARR growth	*17%*	*20%*	*73%*
P/ARR (x)	11.3x	9.4x	5.4x
EV/Sales (x)	9.6x	8.3x	N/A

Note: *Midpoint in RISMA's own guidance
**Excluding IPO cost of DKK 1.4m in 2020 and DKK 4.1m in 2021

Key SaaS metrics FY 2021

ARR	ARR growth	Churn	Upselling
15.3	20.5	7.8	4.7
(DKKm)	*(%)*	*(%)*	*(%)*

NRR	CAC payback	Gross margin	ARPA
96.9	21*	72**	67***
(%)	*(months)*	*(%)*	*(DKKk)*

Note: *(CAC / Average ARR per new customer) x 12 **Gross margin is calculated by subtracting cost of sales from revenue. ***Average ARR per new customer in 2021

Company description

RISMA was founded in 2014 by CEO Lars Nybro Munksgaard. The company is a Software-as-a-Service (SaaS) company that offers an all-in-one software for all governance, risk, and compliance (GRC) initiatives. This means that RISMA's software platform includes different modules such as GPDR and ESG & Sustainability. RISMA has more than 400 customers across Denmark, Norway, and Sweden, and most of the customers are mid-sized companies and organizations with 25 to 5,000 employees.

Investment case

Today, many corporations and organizations are handling compliance manually through spreadsheets. This process can be optimized and automated with a digital GRC platform like RISMA's GRC suite that combines all risk and compliance efforts. The software is developed for both the private and the public sector, including smaller private companies and larger public organizations. Some of the most well-known customers include Bavarian Nordic, Danmarks Nationalbank, GN Store Nord, Sund & Bælt, and Topdanmark.

The GRC software market is estimated to grow with a CAGR of 13-14% towards 2026. Market growth rates are supported by drivers such as increased regulation globally and new important reporting areas such as ESG.

In 2022, RISMA guides for an ARR of DKK 25-28 million, corresponding to a growth rate in the range of 63-83%. This is a significant increase from its growth rate of 20.5% in 2021.

RISMA is currently traded at an ARR multiple of 9.4x (LTM), which is above the Danish SaaS sector of 6.3x (The SaaS HCA Index) and the US SaaS sector of 9.3x (The SaaS Capital Index based on data at the end of April 2022). Despite a lower growth rate than the sector in 2021, RISMA's 2022 growth is expected to exceed the sector's growth significantly (Q1 numbers are reported on 31 May 2022).

Key investment reasons

RISMA differentiates itself in the GRC market by having a holistic approach, providing a suite that covers eight GRC areas. This means that companies and organizations will be able to have a full overview of each GRC area, and RISMA has upselling potential on its existing customers.

RISMA has created a solid Danish foothold in the GRC software market driven by a highly digitalized Danish market. In 2021, RISMA expanded further into Sweden and Norway with sales teams, and the company has also announced several new partnerships, increasing the scalability of sales.

The company has reported a higher customer intake in Q1 2022, driven by the broader product portfolio, growing ARR more than four times than the growth in Q1 2021.

Short to mid-term financing is secured recently based on a loan facility of DKK 12 million from two of RISMA's board members and largest shareholders.

Key investment risks

RISMA is still in its early growth phase, expanding its newly launched full suite solution outside the Danish home market, implying that the risk is higher relative to more mature SaaS companies.

The competitive situation in the GRC market is high and characterized by the fact that there are no global or regional market leaders. This implies that RISMA is in competition with many other smaller players that cover fewer GRC areas.

RISMA's growth strategy and internationalization may require additional capital in the future. However, the recently announced loan facility, which runs for 36 months, will ensure greater flexibility. In Q4 2023, RISMA expects to be cash-flow positive from operations, yet investors should expect RISMA to continue investing in sales and marketing activities in line with its strategy.

Key SaaS HCA assessment

Key SaaS metrics

Global scalability

Technology level

TAM & future market growth

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SaaS metrics: HCA definitions and comments (1/2)

SaaS definitions and problems

Currently, there are no regulated SaaS metrics in the market that all companies follow. This means that companies are using different definitions, both globally and locally. Moreover, different models vary meaning that some SaaS companies have a usage-based business model with fluctuating ARR, while other SaaS companies have more steady contracts with one-year rolling contracts. We are using notes to state the calculation method of most companies in this report, and we are also highlighting if there are large differences from "consensus". In this section as well as the next page, we are commenting on how companies overall are using the metrics, and we are also stating how some of the metrics should be reported. However, metrics and definitions are not exhaustive.

Annual recurring revenue (ARR)

Annual Recurring Revenue (ARR) is a snapshot of subscription revenue at a given time that is considered recurring through a cloud software solution. Thus, non-recurring income and consulting services cannot be recognized in ARR. For most B2C subscription companies, ARR is measured from monthly recurring revenue (MRR), multiplying MRR with 12. However, most B2B SaaS companies have one-year contracts paid upfront, implying that the full value of each contract multiplied by the total number of contracts/clients at a given time will be the total ARR. For subscription sales in a foreign currency, ARR should be converted to DKK at the beginning of the contract period and on an ongoing basis on the cut-off date for each quarterly or half-yearly financial reporting. A discussion point is often when to exclude a terminated customer from ARR. For instance, if a SaaS company has a 1-year subscription agreement, but the customer wants to terminate after 6 months, we still think that the company can recognize the ARR until the contract ends, even though it is not really recurring if the customer has decided to leave. However, churn will be recognized regardless, just later.

Example of ARR: On 31 March 2020, a B2B SaaS company with a total ARR of DKK 1 million sells a 1-year contract of DKK 100,000 to a customer. With a pre-payment for one year, the cash flow is positively affected, while the revenue is accrued. Thus, the SaaS company's total ARR will grow by DKK 100,000 to DKK 1.1 million in the first quarter of the financial year 2020, while revenue typically is recognized over the contract period.

Churn rate

Churn rate measures the lost customers over a given period, primarily calculated in lost ARR across the Danish SaaS companies and not the number of lost customers over a given period. With different customer sizes, ARR is most accurate compared to measuring the number of customers. The churn rate should be measured over one year (12 months), meaning that a SaaS company is looking at its existing customer base one-year ago and tracks the churned customer ARR. The lost ARR over the period should be divided by the total ARR at the beginning of the period to calculate a percentage number and avoid mixing it up with new ARR from new customers, i.e. not using the total ARR end of the period.

Example of churn rate: On 31 March 2020, a SaaS company entered into a 1-year contract of DKK 100,000 with a new customer. The SaaS company has a total ARR of DKK 1 million before the contract. The customer already chooses to stop the collaboration the year after on 31 March 2021. In total, the SaaS company only loses one customer of DKK 100,000 in ARR over the 12 months period. Consequently, churn rate is 10% ((DKK 100,000 / DKK 1 million) * 100) = 10%. Theoretically, a churn rate of 10% is a customer lifetime of 10 years.

Upselling

Upselling is also called "uplift" for many Danish SaaS companies or expansion. The opposite is contraction. It measures how much extra or less a SaaS company sells to the existing customer portfolio. The subscription agreement can, for instance, be increased/decreased by the number of users or by a higher/lower price on the subscription fee due to new or fewer software modules, inflation, etc. Thus, it compares the total ARR from all of the existing customers 12 months ago with the total ARR the same customer base is generating at the end of the period.

Example of upselling: On 31 March 2020, a SaaS company has a total ARR of DKK 1 million. On 31 March 2021, the same customer base generates a total ARR of DKK 1.15 million, implying DKK 150,000 in upselling during the year (including any contraction). Thus, the company has an upselling of 15% from the existing customer base ARR ((DKK 150,000 / DKK 1 million) * 100) = 15%.

Net Revenue Retention Rate (NRR):

Net revenue (ARR) retention rate is the sum of upselling/contraction to existing customers and churn of existing customers. The starting point is 100%, as you look back at the SaaS company's ARR customers at the beginning of the period.

Example of NRR: On 31 March 2020, a SaaS company has a total ARR of DKK 1 million. During the year, the company was able to upsell for DKK 150,000 with a churn of DKK 100,000 on existing customers. This means that the company's NRR is 105% on 31 March 2021.

Average Revenue Per Account (ARPA)

Average Revenue Per Account (ARPA) or Average Revenue Per User (ARPU) is a bit different because one user (customer) can have multiple accounts. However, overall, the SaaS metric calculates the average ARR per customer. With this number, investors can track if this increases or decreases over time from upselling/contraction to existing customers.

Example of ARPA: On 31 March 2020, a SaaS company has a total ARR of DKK 1 million. The SaaS company has a total of 10 paying accounts. This means that ARPA can be calculated by taking the total ARR and dividing it by the number of accounts, i.e. DKK 100,000 (DKK 1 million / 10) = DKK 100,000.

SaaS formulas for HCA definitions 1/2

$$\textbf{ARR} = \text{MRR} * 12$$

Total annual value of a contract

$$\textbf{Churn} = \frac{\text{Lost ARR from existing customers over a period}}{\text{Total ARR at the beginning of the period}} * 100$$

$$\textbf{Upselling} = \frac{\text{Total value increase in ARR on existing customers}}{\text{Total ARR on existing customers}} * 100$$

$$\textbf{NRR} = \frac{\text{Total ARR + upselling/contraction - churn}}{\text{Total ARR}} * 100$$

$$\textbf{ARPA} = \frac{\text{Total ARR}}{\text{Numbers of customers}}$$

SaaS metrics: HCA definitions and comments (2/2)

Customer Lifetime Value (CLV)

Customer Lifetime Value (CLV) estimates the total value of a customer over the expected lifetime. There are different ways to calculate this, however, other metrics should be applied. With a churn rate of 10% over one year, you can theoretically expect to have a customer in 10 years, which is the customer lifetime. This is multiplied by the value of the customer, summarized in the ARPA/ARPU, i.e., the average ARR per customer. Since most of the value is generated over the next years, the total lifetime value can be discounted back to today at a given discount rate. For simplicity, however, we think that taking the total customer lifetime value without the discounting effect will be sufficient to report. CLV should be compared to CAC which we will look into next.

Example of CLV: A SaaS company has a total ARR of DKK 1 million from 10 customers. This means that each customer, on average, pays DKK 100,000 annually. We assume that the SaaS company has an average customer for 10 years. As a result, the customer lifetime value is DKK 1 million (100,000 * 10), which can be multiplied by the number of total customers to assess the total value of the customer portfolio. In this example, the total value of the customer portfolio will be DKK 10 million.

Customer Acquisition Cost (CAC)

Customer Acquisition Cost is an important SaaS metric as it describes how much it costs to acquire a new customer, which typically is a big expense for B2B SaaS companies. Normally, it should be calculated over a one-year period. Most Danish SaaS companies are only counting in specific costs related to acquiring new customers, which should be specified in the reports. A more appropriate method, which is in the formula, is to take the sum of all sales and marketing costs and divide that by the number of new customers acquired. An issue is that some of the same sales and marketing costs may be used to upsell to existing customers, implying that the costs for acquiring new customers are overstated. That said, we prefer a transparent way, stating all sales and marketing costs or at least specifying the costs used for calculation, which can be used to track going forward. Many of the early-stage Danish-listed SaaS companies are in their scaling phase, implying that the CAC typically changes significantly over quarters (rolling 12 months period) with costs related to sales and marketing activities or larger changes in new customers.

Example of CAC: A SaaS company has welcomed 10 new customers in the last 12 months ago. The total amount of sales and marketing costs was DKK 1,000,000, basically the salary of two full-time employees combined with costs related to Google Ads and others costs to attract new customers. With these assumptions, the SaaS company reports a CAC of DKK 100,000 (1,000,000 / 10).

CLV/CAC ratio

The CLV/CAC ratio is calculated as it stands, i.e., CLV divided by CAC. There are different views on how high this ratio should be; however, most analysts require that this ratio is a minimum 3-5 in order to have a healthy model. Like other metrics, the ratio differs among industries. There are only a few Danish-listed companies that report this number. However, investors are able to calculate most of these metrics using assumptions based on churn and ARPA/ARPU.

Example of CLV/CAC ratio: Based on the examples above, CLV is DKK 1 million, and CAC is DKK 100,00. This provides a CLV/CAC ratio of 10 times, which is highly attractive compared to the rule of thumb of 3-5 times for a healthy SaaS business.

Customer Acquisition Cost (CAC) payback period

CAC payback period is also called months to recover CAC. The metric measures how long a time it takes, typically calculated in months, for a SaaS company to earn back its customer acquisition costs. Typically, Danish SaaS companies are reporting this by taking CAC relative to their ARPA from new customers and multiplying it on an annual basis. As a result, companies are calculating when costs to acquire a new customer are paid back with new ARR. Looking at global SaaS companies, larger US-listed SaaS companies apply the gross-margin adjusted CAC payback. This means that it takes a longer time to recover the costs related to a new customer when adjusting for the gross margin (median gross margin is 77% in the Danish SaaS sector).

Example of CAC payback period: If a SaaS company knows that it costs DKK 100,000 to acquire a new customer (CAC), and the gross-margin adjusted new ARR is DKK 75,000, it takes 16 months to pay back the CAC (DKK 100,000 / 75,000 * 12).

SaaS formulas for HCA definitions 2/2

$$\textbf{CLV} = \text{Average customer value} * \text{Average customer lifetime}$$

$$\textbf{CAC} = \frac{\text{Sales and marketing costs over a period}}{\text{New customers over a period}}$$

$$\textbf{CLV/CAC ratio} = \frac{\text{CLV}}{\text{CAC}}$$

$$\textbf{CAC Payback (months)} = \frac{\text{CAC}}{\text{ARPA from new customers over a period (gross-margin adjusted)}} * 12$$

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