

Case Halax

Repo Media company review



Halax wants to detect diabetes from intestinal gas

Intestinal gas can provide an early warning for diabetes

Halax Oy has developed an odourless toilet seat that can remove odours from sanitary spaces. Now Halax is developing an analyser that could reveal early warning signs for example of diabetes.

Competitive advantage from a unique idea

The company's competitive advantage is based on the unique idea of analysing intestinal gas. Halax is developing the analyser in collaboration with a medical specialist and a professor in medicine. Halax is bringing IoT (Internet of Things) into the bathroom with the help of AI (Artificial Intelligence) and data analysis.

Valuation

The valuation of the company's equity offering is based on growth estimates and overall market potential. Repo Media has not taken any view on the valuation of Halax and will not give its own valuation estimate in this report.

Summary

Field of business: Healthcare technology
Investment range: 300,000 – 500,000 €
Equity offered: 4.0 – 5.0%
Price per share: 5.45 EUR
Number of existing shares: 1,319,529
Fully diluted shares: 1,410,529
Share class: single share class
Options: -
Pre-money valuation: 7,000,000 €
Uses for funds: Clinical trial
Redemption clause: No
Personnel: 2

Pre-money valuation

Equity offering valuation	7.0 M €
Price per share	5.45 €

Halax to change its business model



Odourless toilet seats main line of business until 2018

Halax has been in operation since 2013. The company has developed an odourless toilet system, which, up until 2018, has been its main product. Now the company has implemented a new strategy and started to shift weight towards healthcare technology. They have been developing an analyser that could remove odours and bacteria as well as detect diseases from intestinal gas. In the first phase, Halax will focus on diabetes.

A completely new market for diagnosing diseases

The new analyser can be used in two different ways. Firstly, it can be used for removing odours and bacteria from sanitary spaces. This first function is ready to be commercialised. Secondly, the innovation can be used for analysing intestinal gas and diagnosing diseases. This second function is still in the development phase.

In 2017, the company's revenue came from the odourless toilet seats. The new analysers are manufactured by the Polish company Armatura.

Management / key staff

Tuomas Tiirinki	CEO
Jari Vepsäläinen	Health AI

Board of Directors

Timo Tiihonen	Chairman of the Board
Eero Lehti	Board Member
Jari Vepsäläinen	Board Member

Owners

Eero Lehti	30.1%
Tuomas Tiirinki	23.1%
Jari Vepsäläinen	6.2%
Gemway Investment Oy	5.0%
He-Vi Invest Oy	1.5%
Timo Tauren	1.2%
Privanet Group Oyj	1.0%
Minor shareholders (184 owners)	31.9%

Halax business model



New business model

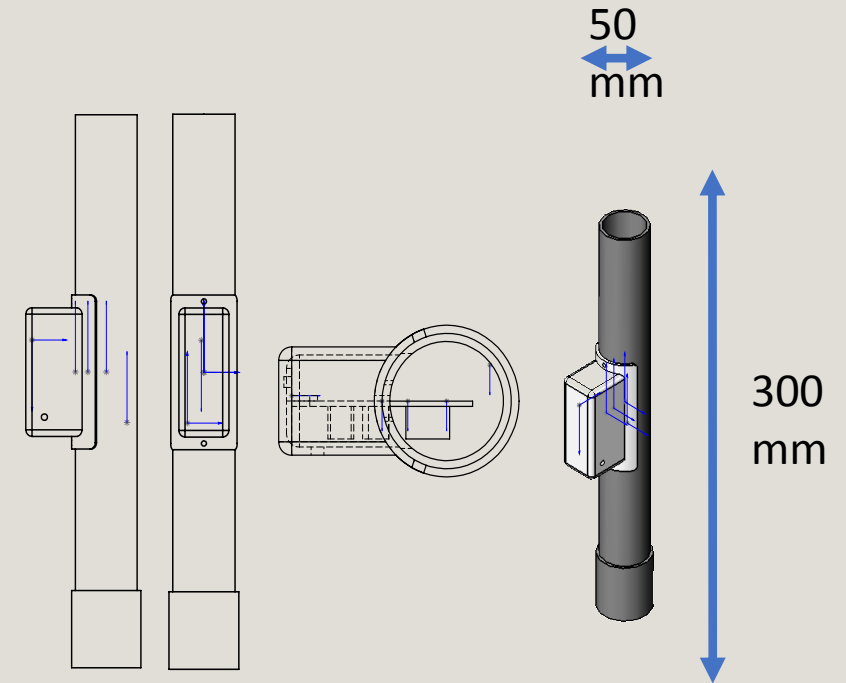
Halax analysers are manufactured by Armatura, the Polish sanitary equipment leader. Armatura manufactures the toilet seats, integrates Halax technology into the products, and also sells the toilet seats in Central Europe. The first deals have been made in Austria. Armatura is operating under a licensing agreement. The company says that in Finland, the analysers will be sold in Netrauta hardware stores and through direct sales to constructors, assemblers and contractors.

Halax has signed a letter of intent with Chinese Haier Group for the licensing and sale of Halax products. This could turn out to be a major deal, if they finalise the agreement. The agreement would help the company to expand its sales channels especially in Asia and to boost its growth plans.

Halax has a subsidiary in Hong Kong which is 100% owned by Halax Oy in Finland. Halax Asia Ltd is lead by Jari Vepsäläinen who has extensive experience from Asian trade and business in general. Sales in Asia are conducted via Halax Asia Ltd.

Strategy

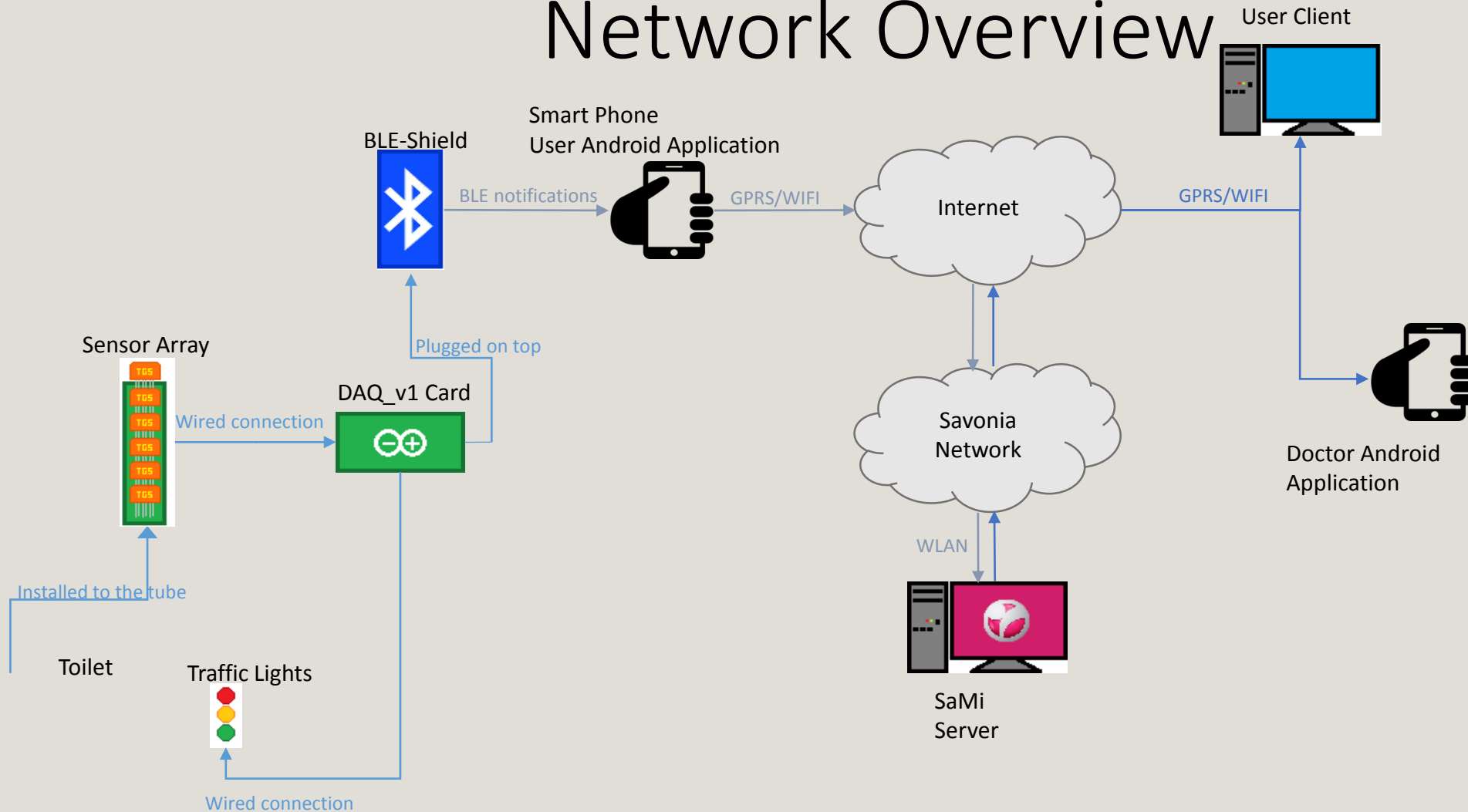
The company has implemented a new strategy which focuses on the Halax analyser for toilet seats. The analyser could be able to detect diabetes and other diseases from intestinal gases. Halax will apply the licensing model in selling the analyser globally. Toilet seat manufacturers can integrate the Halax system into their existing toilet seat models and sell them. The company's income prospects include licencing fees from manufacturers.



Halax Network plan



Network Overview



Halax Health AI



Health AI offers interesting opportunities

Halax has begun to implement a new strategy and business model called Health AI. Halax is shifting its focus from odourless toilet seats to personal health data. Artificial intelligence (AI) offers interesting tools for analysing health problems from intestinal gas. This idea is unique and simple. Every time a person uses the toilet, the analyser gathers data and analyses it to identify early warning signals of developing diseases. The analyser is wireless and can be connected to the internet. Users could get their private health information sent to an app on their mobile phone. Halax will enter the IoT market with toilet seats, which gives an interesting angle to scaling up the business.

Focus on type 2 diabetes

Halax focuses on type 2 diabetes and developing an analyser that is able to detect diabetes before the illness reaches the phase where the patient will need additional insulin injections. Before it reaches that phase, diabetes can in most cases be treated with diet and exercise. The analyser will suggest further medical examinations if it detects an increasing risk of developing diabetes.

Halax has already succeeded in bringing the analyser to a stage where it can remove bacteria and odours from sanitary spaces. In the second phase, the analyser will be able to detect diseases from intestinal gas. This phase is currently underway and the final product will soon be ready for commercialisation.



Halax business environment



Business environment and competition

According to the Global Toilet Seat Market Report 2017–2021, the toilet seat market is forecasted to grow on average 6% per year during the period 2017–2021. The report lists TOTO, Kohler and LIXIL as the key vendors on the market.

The market focus is shifting from non-electronic to electronic toilet seats. Electronic toilet seats include self-lifting seats. There is a strong demand for electronic toilet seats in Asia and in the USA. The latest designs in the high-tech toilet seat market are driven by Japanese technology, which has been adopted in several countries. In Asia, India is an underpenetrated market for high-tech toilets seats, representing high growth potential.

There are a few odourless toilet systems in the market but they mostly have external fans instead of being fully integrated toilet seat solutions. The Halax toilet seat might be the only fully integrated odourless system which can remove odours and bacteria from sanitary spaces.

Huge global market for diagnosing type 2 diabetes

According to the World Health Organization, there are 422 million adults with diabetes in the world. The figures have nearly from the 1980 diabetes rate of 4.7% of the population to the current 8.5%. The numbers are rising because of lack of exercise and unhealthy eating habits.

Halax may be able to offer a tool which helps to detect diabetes before it's too late to make lifestyle changes.

Halax investment case



Investment case built on optimistic growth estimates

The introduction of the analyser marks the start of a new business model for Halax. The company has sold the remaining stock of its previous product, the odourless toilet seat.

We want to point out that all the 2017 net sales (101,000 EUR) were generated by a transaction where their remaining product stock was sold to their previous board member Jarmo Jääskeläinen, who bought the stock for his own company, Kehitys- ja sijoitusyhtiö kotimaani on Suomi Oy, in order to resell it. Halax has not yet received the payment but has booked the amount in its financial statements. Halax has long-term receivables in the amount of 89,000 EUR from Kehitys- ja sijoitusyhtiö kotimaani on Suomi Oy.

Investors should consider the company to be a start-up with a potential innovation for diagnosing diseases from intestinal gas. The idea is worth exploring and testing. At the moment, we have no evidence of the new product's commercialization, and we have not yet seen any net sales. Therefore, it is hard for us to make any conclusions about the new product's potential and market adaptation at this time. We need more evidence for analysis before we can make any research-based assumptions.

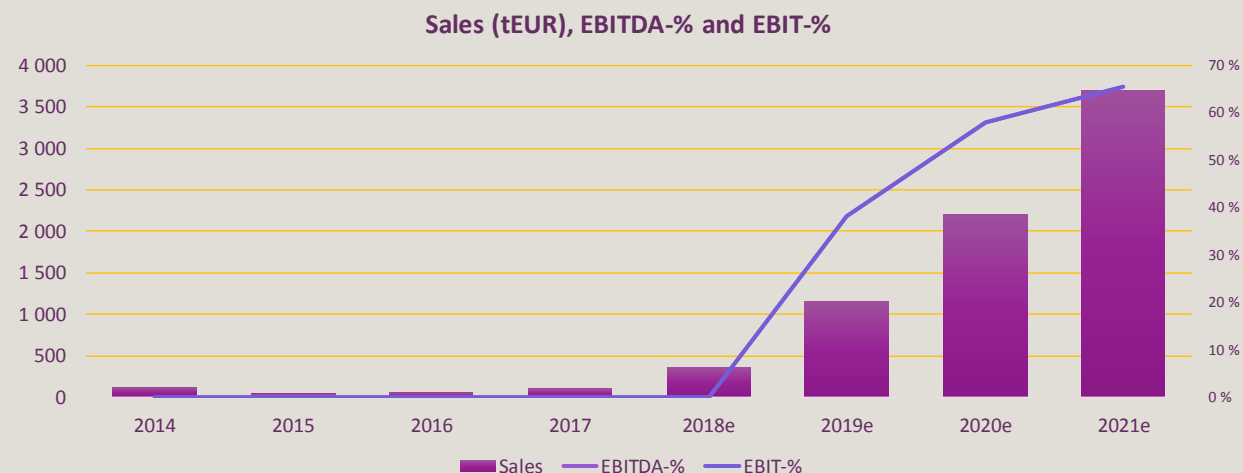
The company has high growth and profitability estimates which we think are not plausible. Our growth scenario for Halax is more cautious. Please also note that we are not presenting a company valuation at this point, as the new product has not yet generated any net sales for the company.

A few points an investor should know when considering investing into Halax: the company has booked 584 TEUR into capitalized long-term expenditures, which will diminish the company's distributable retained profit and also diminish its net profit in the future through yearly depreciation. Financial expenses (roughly an 11% interest, according to our calculations) are becoming a burden to profitability. The company has two ongoing lawsuits concerning unpaid subscription of shares in previous emission totalling 41 TEUR and current accounts receivable are 37 TEUR. The bookkeeper has noted that Halax Asia Ltd was acquired before 2017 but it was not included in the account statement for the previous years. The company posted losses of -504 TEUR in 2017 and its distributable equity was -592 TEUR.

The company has no registered patents for its old products or new ideas.

We consider investing in the company to involve a very high risk.

Halax Key figures



Source: Halax Ltd



Value drivers

The company's value creation is dependent on growth and EBITDA margin development. If the company succeeds in commercialising the new analyser and is able to implement licencing deals, this will add value to the company. The licencing model is scalable and would help to scale up growth.



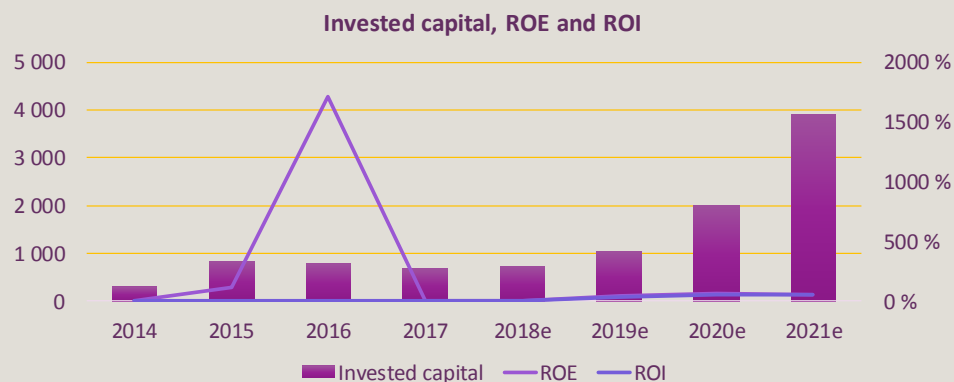
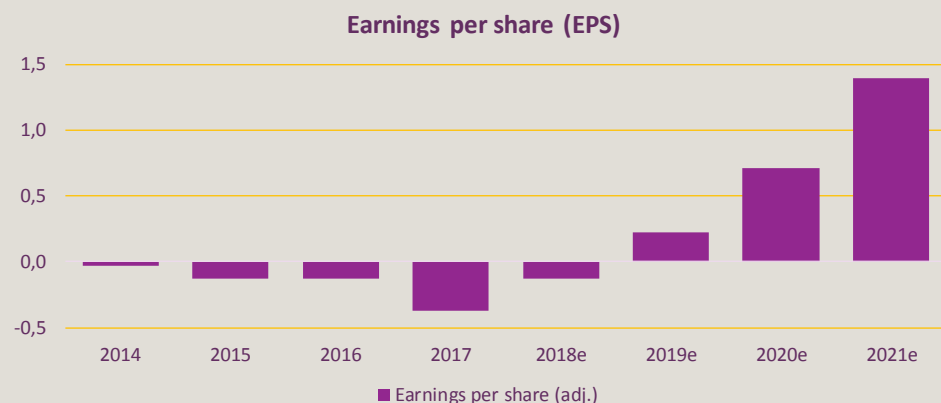
Risks

Risks are related to the new product and the financial situation of the company. The company has burden from its previous business related to capitalized expenditures and high interest bearing debts. The development and commercialisation of the new product involves a risk and we have not yet seen any evidence of the product being able to do what the company expects it to do.

	2014	2015	2016	2017	2018e	2019e	2020e	2021e
Sales	126	33	48	101	362	1 150	2 200	3 700
<i>Sales growth-%</i>	0 %	-74 %	45 %	110 %	258 %	218 %	91 %	68 %
EBITDA (adj.)	-7	-64	-43	-381	-111	438	1 274	2 421
<i>EBITDA-%</i>	0 %	0 %	0 %	0 %	0 %	38 %	58 %	65 %
EBIT (adj.)	-7	-111	-106	-461	-111	438	1 274	2 421
<i>EBIT-%</i>	0 %	0 %	0 %	0 %	0 %	38 %	58 %	65 %

Source: Halax Ltd, calculations by Repo Media.

Halax performance measures (1/2)



Source: Halax Ltd, calculations by Repo Media.

	2014	2015	2016	2017	2018e	2019e	2020e	2021e
ROE	0 %	116 %	1710 %	0 %	0 %	47 %	60 %	54 %
ROI	0 %	0 %	0 %	0 %	0 %	34 %	51 %	50 %
ROA	0 %	0 %	0 %	0 %	0 %	22 %	40 %	43 %
P/E	0,0	0,0	-	-	-	24,3	7,6	3,9
P/B	0,0	0,0	-	21,7	21,8	11,5	4,6	2,1
P/S			127,8	61,2	20,4	6,4	3,4	2,0
EV/Sales	0,0	0,0	143,8	62,7	21,5	6,7	3,5	2,1
EV/EBITDA	0,0	0,0	-	-	-	17,7	6,0	3,2
EV/EBIT	0,0	0,0	-	-	-	17,7	6,0	3,2
Earnings per share (adj.)	0,0	-0,1	-0,1	-0,4	-0,1	0,2	0,7	1,4

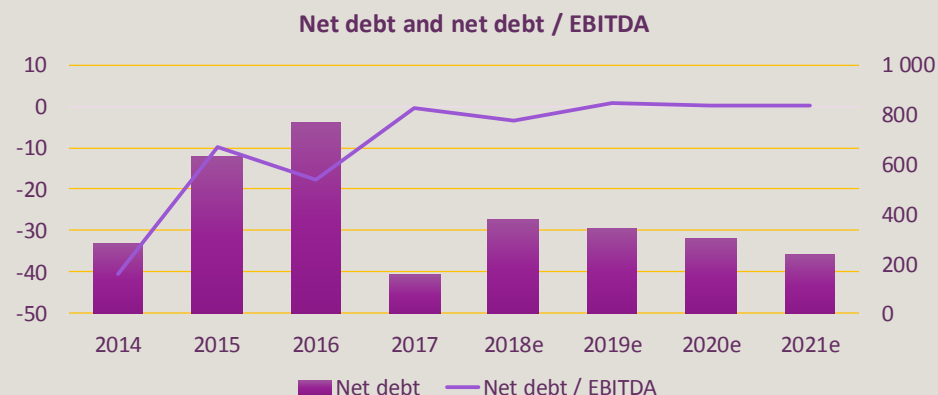
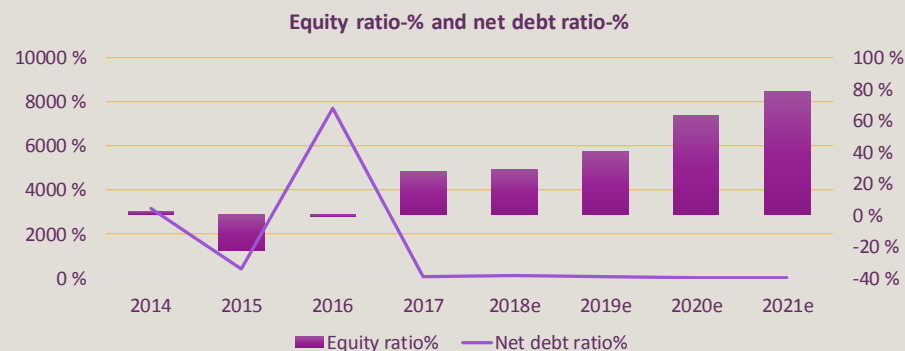
Source: Halax Ltd, calculations by Repo Media.

Performance and profitability

The company has capitalized development expenditures on the balance sheet, which improved their net earnings by +208 TEUR in 2017. Reported net earnings were -504 TEUR in 2017. Valuation multiples are calculated with the equity offering price.

The forecasts are based on a minimum level of subscribed equity offering of +300 thousand euros in equity.

Halax performance measures (2/2)



Source: Halax Ltd, calculations by Repo Media.

	2014	2015	2016	2017	2018e	2019e	2020e
Equity ratio%	2 %	-23 %	-1 %	28 %	29 %	40 %	63 %
Debt ratio-%	3344 %	451 %	7700 %	138 %	116 %	61 %	24 %
Net debt ratio%	3156 %	422 %	7680 %	55 %	111 %	54 %	19 %
Net debt / EBITDA	-40,6	-9,9	-17,9	-0,4	-3,4	0,8	0,2
Total assets	426	648	844	1 021	1 158	1 590	2 563
Shareholders equity	9	-150	-10	284	339	644	1 617
Interest bearing debt	301	677	770	393	393	393	393
Cash and cash equivalents	17	44	2	237	15	48	92
Non-interest bearing debt	116	121	84	344	426	553	553
Invested capital	310	827	780	677	732	1 037	2 010
Net debt	284	633	768	156	378	345	301

Source: Halax Ltd, calculations by Repo Media.

Balance sheet ratios

Equity ratio is low even after the minimum level of equity offering. The company could soon be in need of an additional funding round.

The forecasts are based on a minimum level of subscribed equity offering of +300 thousand euros in equity.

Halax risk profile



Total risk = 5

(1 = very low risk, 2 = low risk, 3 = neutral risk, 4 = high risk, 5 = very high risk)

Sales

Cyclical sales = 5

Variation of sales = 5

Income diversification = 5

Risk measure = 5

Sales risk

The risks related to sales and income diversification are very high. The product is still in the development phase and there are no reported sales yet.

Cost structure

Fixed costs = 5

Investments and profitability

= 5

Risk measure = 5

Cost structure risk

The risks related to the cost structure are very high. Fixed cost are now larger than sales and the company is not profitable.

Capital investments

Operating cash flow variation

= 5

Capital intensity and financing

= 5

Risk measure = 5

Capital investment risk

The capital investments needed to finance growth and the commercialisation of the product are large and cash flow is negative. We consider the capital investment risk to be very high.

Important information and disclaimer



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The valuation of a company is based on the probabilities of three different scenarios. Repo Media applies the First Chicago method, a business valuation method used by venture capital investors. In the three scenarios (strong, moderate, weak), the forecasted future free cash flows are discounted to a present value using the company's required return. The present values (business values) of the discounted cash flows under the three scenarios are weighted with the probability of each scenario. The final value of the investment is calculated using the weighted sum of each scenario. The probability of each scenario is calculated on the basis of the variance of the company's EBITDA-%, 2) the Repo Media scoring matrix and 3) the company-specific risk value.

Notes





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