

Neonode

Sector: Human Interaction

New Paradigm of Contactless Touch

Redeye thinks Neonode is favored by a new paradigm of contactless touch. We raise our base case due to an improved Redeye Rating and higher long-term estimates, primarily for steering wheels.

A new contactless paradigm for touch sensors

We think Corona is a wakeup call making people understand the hazard of touching surfaces on ATMs, vending machines, and elevators etc. A UK survey by Foolproof found that 72% of the participants had either worn gloves or wiped off a public touch surface, and 80% say they will change how they engage with touchscreens. Contactless touch technology is therefore, in our view, a game-changing, structural growth opportunity over many years. Neonode has been banging this drum for a decade, and consequently possess a potential golden nugget. We are not expecting instantly skyrocketing sales, but the company is in several discussions, indicating a growing interest.

HMI steering wheels is the main growth driver for Autoliv

Autoliv's customers require electrification of the products, namely the HMI steering wheel. Autoliv says the fastest growing market will be in the steering wheels due to higher-value steering wheels with additional features, making it an integral part of its strategy. We find it unrealistic that Autoliv would not fight to defend its 38% market share in steering wheels when more advanced steering wheels are now being required by customers.

Raising our base case to USD 5 (3)

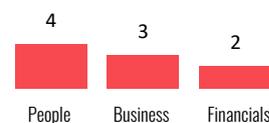
Prior to the report, the stock turned parabolic, which we think was driven by increased interest and speculation around Chinese elevators and patent monetization. We regard the report reaction as primarily profit taking. A revaluation from the bombed-out levels was justified, nonetheless. As we flagged in our last update, we increase our People rating from 3 to 4 due to the track record and execution from the new CEO, which lowers the required rate of return from 13% to 12%. We also raise our long-term estimates, primarily for steering wheels. Altogether, our base case jumps from USD 3 to 5. We want to emphasize that this is a long-term view. It's going to take time - a whole lot of precious time. Nevertheless, if the short positions of over 0.3m shares would be covered over the market, following e.g., a successful patent deal for Aequitas, we think the stock could surpass our bull case of USD 10.

KEY FINANCIALS (USDm)	2018	2019	2020E	2021E	2022E	2023E
Net sales	9	7	6	14	14	29
EBITDA	-3	-3	-2	2	-1	8
EBIT	-4	-6	-5	1	-2	7
EPS (adj.)	-0.7	-0.6	-0.5	0.1	-0.2	0.7
EV/Sales	0.5	2.5	7.3	2.8	3.1	1.3
EV/EBITDA	-1.5	-6.4	-25.7	21.9	-38.2	5.1
EV/EBIT	-1.1	-2.9	-8.5	28.5	-20.8	5.8
P/E	-2.5	-3.0	-8.8	28.9	-19.9	6.2

FAIR VALUE RANGE

BEAR	BASE	BULL
2.0	5.0	10.0

REDEYE RATING



KEY STATS

Ticker	NEON.OQ
Market	NASDAQ
Share Price (USD)	4.0
Market Cap (MUSD)	41
Net Debt 20E (MUSD)	-2
Free Float	76 %
Avg. daily volume ('000)	12

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New Paradigm of Contactless Touch

We see some silver linings in the weak report, e.g. contactless touch being a game changer, an increased partner network in US and Europe, and new people entering (see [our comment](#) on the new VP of HMI Solutions, Jonas Wærn). The new team has been shaped, although we assume a little more change could occur. We have a positive view of the strategic review and restructuring but, as Neonode also pointed out in the report, this is not a quick fix. We think the company did a good job in explaining the fairly long lead times in its business. New HMI Solutions deals that are closed immediately could affect the end of 2021, at the earliest.

The company mentioned new customer projects and opportunities across the board, with new customers and old customers, in both touch and gesture. Some of these opportunities are breaking new ground, e.g. military and white goods. We believe lead times are extensive here as well.

Neonode says the review of strategies and opportunities have resulted in several measures, e.g. increased focus. In our last update, we posed a question about the scalability in HMI Solutions. We assume the way to think about this is that the company could come a long way with only a few large OEM or ODM partners. There is a desire to grow with the customers by increasing the footprint. However, one key difference, in our view, is the CEO's proven track record in doing it, meaning it is more than just a desire. Moreover, Neonode wants to focus and target segments where the tech has an edge, e.g. med-tech, military, aircraft and industry. This is boilerplate communication, in our view. We have not seen it explicitly dropping some areas, as of yet. Both these concepts of focus and the search for viable niches were initiated before, but in our opinion the new CEO, Urban Forssell, is taking decisive action, to a greater extent. We also think he is fearless and moves relatively fast in creating the new Neonode.

In general, our take is that the viable niches of professional users in the rugged industries are not too small. It all comes down to the pricing, which is based on how unique and important the company's tech is for the customers. As we lack pricing information, it is hard to accurately calculate the addressable markets. However, if we take the military industry as a theoretical example; there are e.g. an addressable market of over 15m active duty soldiers (excl. totalitarian states) and millions of vehicles. Pricing should be favorable, considering Neonode's technology does not interfere with other tech, as opposed to competition. If Neonode can have a 5x better ASP than in printers, the addressable military market should exceed USD 50m. If it is 5x higher than automotive, we are rather talking about USD +600m. The reality should likely be somewhere in between, and then we have not even considered the higher ASP in selling modules. However, our point is not the exact number, but rather just highlighting that we think these niche markets are larger than many would first think.

In a Corona update in the report, Neonode highlighted a disturbance from the virus due to pausing of travel and remote work. Some discussions are being prolonged, and sales are expected to drop in automotive and printers. We believe there will be a lagging effect into Q3 sales as royalty revenue is recognized with a delay. However, in a longer perspective, as we will now discuss, the pandemic has started a very interesting positive market movement for contactless touch.

Contactless touch tech is a golden nugget

As we previously have mentioned, the Corona virus is a wakeup call, with no turning back, in our view. People now begin to understand the dangers of touching surfaces or buttons on ATMs, vending machines or elevators etc. For example, in a UK survey by Foolproof, 72% of

the participants had either worn gloves or wiped off a public touch surface, and 80% say they will change how they engage with publicly available technology (touchscreens). Contactless touch technology is therefore, in our view, a game-changing, structural growth opportunity that we think will play out over many years. Neonode has been banging this drum for a decade, and consequently possess a potential golden nugget. We are not expecting instantly skyrocketing sales, although as with anything Corona-related, the uncertainty is major. The company is in several discussions, indicating a growing interest. One example of a customer is Yesar - a system integrator of holographic solutions for e.g. elevators. We assume there are many incoming calls, but also believe Neonode needs to do a lot of educative work, since we are talking about a paradigm shift.

Auto: HMI Steering wheels is the main growth driver for Autoliv

Autoliv has been working with setting up a mechatronics business to meet the customers' demand of electrification of its products, including the HMI steering wheel. We think the slow speed is a bit frustrating, but last year, it was said to be going according to plan. From Autoliv's communication, as we will outline below, we think the HMI steering wheel is an integral part of its future. Now, this is not news. Autoliv has since long seen the HMI steering wheel as the link between the driver and the ADAS systems. Sensors in the steering wheel and the seatbelt can measure the driver's ability to handle the vehicle, which could e.g. be used to activate ADAS functions, or coaching the driver into driving safer. Autoliv expects its market of seatbelts and airbags, including steering wheels, to grow from USD 20bn to 23bn over the next 3-5 years, driven by more content per vehicle. The highest growth rate, according to Autoliv, will be in steering wheels due to the *"trend toward higher-value steering wheels with leather and additional features."* We find it unrealistic that Autoliv would not fight to defend its 38% market share in steering wheels (+20m vehicles) when more advanced steering wheels are now being required by customers. Autoliv has delivered steering wheels with hand sensor detection for BMW since 2013. Thus, we view it more as a question of how fast the customers want to go.

Q1: Significantly lower costs

The sales decrease was overall as we feared, across the board. The operating loss of USD -1.1m came in significantly lower though (expected -1.8m). It was driven by 27% lower R&D costs compared to Q4, related to general cost reductions, currency (USD/SEK) and some resources transferred to marketing.

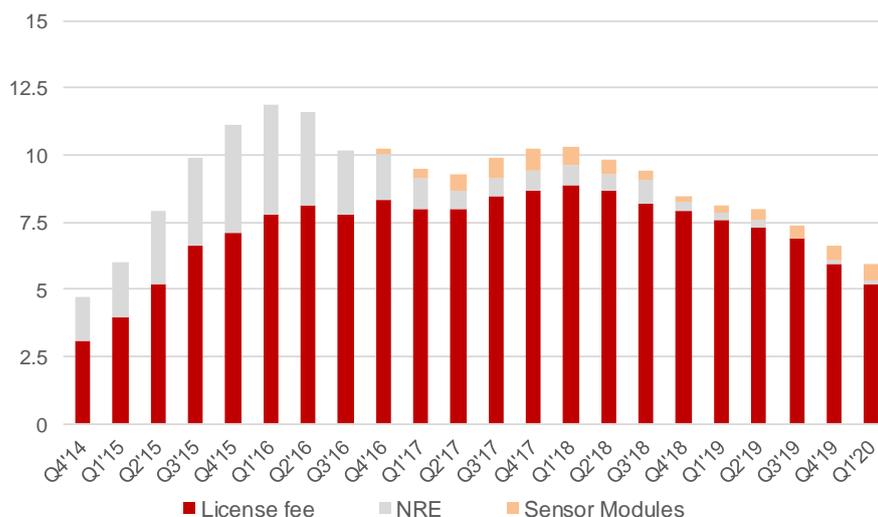
Neonode - Expected vs. Outcome				
SEKm	Q1'19	Q1'20E	Outcome	Diff
Sales	2.0	1.4	1.3	-0.1
Operating profit	-0.7	-1.8	-1.1	0.7
PTP	-0.7	-1.8	-1.1	0.7
EPS, USD	-0.07	-0.20	-0.10	0.10
Salesgrowth	-15.3%	-29.4%	-35.7%	
Grossmargin	95.0%	87.8%	96.6%	
EBIT margin	-33.2%	-126.2%	-84.2%	
EPS growth	n/a	n/a	n/a	

Source: Neonode, Redeye Research

Neonode has consistently been running with only six dedicated sales and marketing employees. However, many of the other employees are very engaged in sales activities. There is also a lot of sales muscle in the partnerships. Nevertheless, we think the company might need a few more heads to exploit the contactless touch opportunity. The market is ripe, although customers need to be educated.

The stable sales decline during the past two years (see the rolling 12-month graph below) looks quite remarkable, although this a consequence of the industry and the long lead times. A successful execution would have a reverse pattern. Comparisons with Fingerprint Cards is therefore not very accurate for Neonode, in our view.

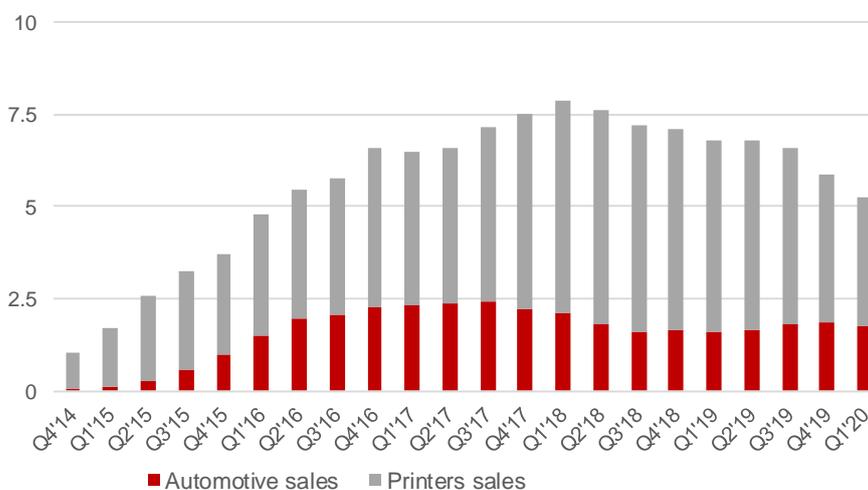
Sales per segment - rolling 12 months (USD million)



Source: Redeye Research, Neonode

The Q1'20 decline of -19% and -42% in automotive and printers translate into the following graph:

R12M total Printers & Automotive revenue (USD million)



Source: Redeye Research, Neonode

From the downward sales trend, it is natural to think about if someone is eating Neonode's lunch. New technologies that challenge the pro cap touch paradigm continue to pop up regularly, but we have not seen anything that seems clearly destined to change the game.

Cash at the end of the period of USD1.2m suggests an imminent capital raise. This should not come as a surprise though, and it is included in our estimates.

No takeoff yet in HMI Products

The first med-tech customer has started selling a mobile ultrasonic examination system. We think the other projects mentioned in military and white goods are module projects for HMI Products. Neonode currently only has three purchase agreements in HMI Products (four in the Q4 update). We do not know how the other customers have sourced their products, but it could possibly be directly over Digi-Key. Evaluation kits sold amount to 740, which is only about one third of Acconeer. Neither of the two companies are in the business of selling evaluation kits for a living but the EVKs can be seen as a proxy for the interest in the technology. We believe head to head competition with Acconeer's radar is limited to a few use cases, and that the two technologies in general are complementary.

Critical phase for the patent program

The patent program by Aequitas is entering an interesting phase, following one year's work to monetize the patents. If Aequitas has not made progress (met the milestones) now, or do so rather immediately, Neonode can revoke the patents. If we do not hear anything similar, we will make the assumption that Aequitas (and Neonode indirectly) has a good case. About 1 billion smartphones were sold in US during the past six years. As for the licensing BOM of a phone, Imint has e.g. had a royalty of USD 0.03-0.05 for its algorithm (video stabilization). A similar royalty per phone would imply USD 30-50m for Neonode, which can be compared to USD 14m in our bull case.

Remote Sensing: Engaged with a European premium OEM

The company says it sees a strong interest for the driver monitoring (DMS) solution. The OEM pipeline for proof of concept for H2'20 has increased, but one should note that we are merely talking about customer discussions. Our view is that procurements for the 2022-2023 launches have all been finished already, meaning the next generation tenders are 2-3 years out. Adding 2-3 years until SOP (start of production), we believe royalty revenue cannot be earned before 2024. This roughly matches the year 2024 mentioned by Neonode.

Marketing towards both OEMs and tier1s has increased and been well received. One way car OEMs, in particular premium manufacturers, have been wanting to differentiate themselves, is by providing unique solutions with e.g. its own software. Neonode stated that it is engaged with a European premium OEM and "*shortlisted for sourcing process for 2024+ platform design win*". There are five European premium OEMs (six including Porsche). Smart Eye recently announced new platforms from three European premium OEMs, whereof two were second-generation DMS for existing OEM end customers. We believe Smart Eye currently has contracts with five of the six European premium OEMs (sharing BMW with Seeing Machines) and that Seeing Machines has won the last OEM. The duopoly will likely be broken in the future, but the key point here is that breaking into DMS, as in any auto application, requires several years of consistent, hard work.

Similar to Neonode, we also think DMS is an extremely interesting market, albeit crowded, but we are a bit negatively surprised that there are no other nearer-term opportunities in auto for the company to talk about, instead of DMS that is ~4 years out, with uncertain prospects. We see a major challenge for Neonode in trying to catch up with Smart Eye and Seeing Machines that both have worked with driver monitoring for 20 years and are, in essence, pure play DMS companies, as opposed to Neonode whose focus is diverted by other kind of applications in various different markets. If the new DMS area is the most promising auto opportunity, we think it does not make a good case for the other, auto solutions that the company has previously been working on, namely tailgate and entry systems.

Neonode has identified a need for more cost-efficient driver monitoring that is compliant with EU's general safety regulations, applicable for all new vehicles from year 2024. Neonode says its DMS software platform has a minor footprint and can be run with good performance on small, low-memory processors, even with low resolution cameras, which allows for a low total system cost. The company also wants to make a statement that there are other ways to detect drowsiness and distraction than eye tracking. Forssell, in this context made a comparison with NIRA Dynamics, where the first, conventional solution on the market was to measure the tire pressure by a sensor in the tire, whereas NIRA's solution is 100% software based.

We lack some pieces of the puzzle e.g. how much Neonode has invested and will invest in DMS, but Neonode cannot say more at this point due to commercial reasons. What we do know is that Neonode's software platform will be flexible, scalable and hardware agnostic. It will also use efficient machine learning algorithms. We think all these characteristics are important. The first ones are hard to evaluate in any way for an outsider, but for the AI part we see a potential competitive disadvantage for Neonode in the size of the datasets. As the saying in AI goes, the one with the most data usually wins. Seeing Machines has long been touting its 4.2bn kilometers of driving data with 6.5m registered distraction events, claiming it to be a major competitive edge. The data has not helped it in fending off Smart Eye, thus far, but it is most certainly not a disadvantage. Nevertheless, we believe DMS will be a large market – big enough for a few more players, allowing both Seeing Machines and Smart Eye to continue growing, while at the same time feeding entrants like Neonode. As a final remark, we have not at this point included any DMS revenue in our Neonode assumptions, since we are awaiting more data points.

Financial estimates

The assumption changes in our base case are made for the longer run. In the short term, we expect the same old situation (see the table below) as there was only one new license agreement in 2019 (net +1). 16 of the 42 HMI solutions customers are shipping. We assume the majority of the non-shipping customers are outdated.

Forecast adjustments				
(USDm)		2020E	2021E	2022E
Sales	Old	6	14	14
	New	6	14	14
<i>% change</i>		-11%	2%	0%
EBIT	Old	-6	1	-2
	New	-5	1	-2
<i>% change</i>		-22%	141%	0%
Profit before tax	Old	-6	1	-2
	New	-5	1	-2
<i>% change</i>		-23%	141%	0%
Earnings per share	Old	-0.61	0.06	-0.20
	New	-0.47	0.14	-0.21
<i>% change</i>		-22%	149%	3%

Source: Redeye Research, Neonode

In detail, our earnings estimates are summarized below:

Short term sales & earnings assumptions				
(USD million)		2020E	2021E	2022E
Total sales		6	14	14
<i>Sales growth (%)</i>		-16%	159%	-4%
<i>Group gross margin</i>		87%	91%	80%
OPEX		-10	-12	-13
EBIT		-5	1	-2
EBIT margin		-85%	10%	-15%
Pre-tax profit		-5	1	-2
Net earnings		-5	1	-2
EPS		-0.47	0.14	-0.21

Source: Redeye Research, Neonode

Sales assumptions: Automotive				
(MUSD)		2020E	2021E	2022E
Total sales		1.5	1.9	5.0
<i>whereof infotainment (%)</i>		100%	100%	59%
<i>whereof Autoliv steering wheels (%)</i>		0%	0%	26%
<i>whereof tailgate (%)</i>		0%	0%	10%
<i>whereof door collision avoidance & door handles (%)</i>		0%	0%	5%
<i>Sales growth (%)</i>		-19%	25%	166%
Total Neonode units shipped (mil)		0.9	1.0	1.9
<i>whereof modules (%)</i>		0%	0%	11%
<i>whereof licensing (%)</i>		100%	100%	89%
<i>Volume growth (%)</i>		-10%	20%	83%
Blended ASP (USD)		1.7	1.8	2.6

Source: Redeye Research, Neonode

Sales assumptions: Printers				
(MUSD)	2020E	2021E	2022E	
Total sales	2.9	3.3	4.8	
<i>whereof HP (%)</i>	65%	55%	52%	
<i>whereof others (%)</i>	51%	45%	48%	
<i>Sales growth (%)</i>	-27%	12%	47%	
Total Neonode units shipped (mil)	4.4	5.1	7.4	
<i>whereof modules (%)</i>	0%	0%	0%	
<i>whereof licensing (%)</i>	100%	100%	100%	
<i>Volume growth (%)</i>	-36%	14%	47%	
Blended ASP (USD)	0.7	0.7	0.7	

Source: Redeye Research, Neonode

Sales assumptions: Other sensor modules				
(MUSD)	2020E	2021E	2022E	
Total sales	0.9	1.8	2.8	
<i>Sales growth (%)</i>	58%	100%	59%	
Total Neonode units shipped (')	92	158	215	
<i>Volume growth (%)</i>	227%	72%	0%	
Blended ASP (USD)	10	11	13	

Source: Redeye Research, Neonode

Sales assumptions: E-readers & other				
(MUSD)	2020E	2021E	2022E	
Total sales	0.3	7.5	1.3	
<i>whereof E-readers</i>	32%	0%	15%	
<i>whereof NRE & other</i>	68%	7%	85%	
<i>whereof Aequitas (enforcement/licensing of patents)</i>		67%	385%	
<i>Sales growth (%)</i>	12%	2801%	-83%	
Total Neonode units shipped (mil)	0.2	0.0	0.5	
<i>Volume growth (%)</i>	-85%	-84%	1900%	
ASP excl. NRE (USD)	0.5	0.4	0.4	

Source: Redeye Research, Neonode

Quarterly Estimates

Quarterly estimates (million USD)											
SEKm	2018	Q1'19	Q2'19	Q3'19	Q4'19	2019	Q1'20	Q2'20	Q3'20	Q4'20	2020
Sales	8.5	2.0	1.7	1.3	1.6	6.6	1.3	1.2	1.2	1.8	5.6
<i>Sales growth (%)</i>	-17%	-15%	-9%	-32%	-32%	-22%	-36%	-28%	-7%	13%	-16%
EBIT	-3.9	-0.7	-1.3	-1.2	-2.6	-5.7	-1.1	-1.0	-1.3	-1.4	-4.8
PTP	-3.9	-0.7	-1.3	-1.2	-2.6	-5.8	-1.1	-1.0	-1.3	-1.4	-4.8
EPS (USD)	-0.67	-0.07	-0.15	-0.13	-0.29	-0.64	-0.10	-0.11	-0.14	-0.14	-0.47
EBIT margin (%)	-45%	-33%	-77%	-91%	-159%	-86%	-84%	-82%	-103%	-77%	-86%
Gross margin (%)	89%	95%	96%	95%	72%	90%	97%	86%	82%	85%	87%
EPS growth (%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Redeye Research, Neonode

Investment Case

Turnaround case turned credible with new main owners & management

Limited downside from underlying values that could be unlocked

Major autotech opportunity

Break-even and large module deals to drive the stock price

Turnaround case turned credible with new main owners & management

The stock market's confidence in Neonode has been low since way back, for very good historical reasons, in our view, most notably the communication. Sales have deteriorated, but the low valuation is also a punishment for old sins. However, this means that there are very clear reasons for why shares are undervalued. The Neonode turnaround case has turned credible, due to a promising set of new people. Besides a new CEO with a successful autotech track record, the new owners and board members are very engaged and involved in the company. The COB comes from a long career in private equity where the COB works tight with Management. The new owners also have excellent track records in business and investing. The new board decided to focus and closed several far-fetched, non-core projects initiated by previous Management. Moreover, the failed change in business model was reversed. The company had told the customers they could only buy modules and not licenses going forward. This decision was reversed around year-end 2017 and customers are now free to choose. We believe the lead times are about 2-3 years, meaning we should soon begin to see some results. Despite all of Neonode's failures in the past, the company has only lost a handful of customers, which is remarkable and implies a strong value proposition for the customers. Our conclusion is that the technology and customer benefits are fantastic while execution and communication have been lousy. All in all, there are evidence suggesting that Neonode could, indeed, finally turn.

Limited downside from underlying values that could be unlocked

Neonode's has a recurring license revenue base of about USD 5-6m per year. The burn rate is about USD 1m per quarter, meaning there should be a plan B in unlocking large values tomorrow by cutting costs and earn license revenue with 100 % margin. This opportunity is not new in itself, but the difference, in our own view, is that the new main owners are not sentimental and will not tolerate more years of disappointment, meaning these values will eventually be unlocked if the business does not turn.

Major autotech opportunity

Smart Eye has the same market and drivers etc. as Neonode but the valuation differs by several factors. In addition, Neonode has higher ASP and even better barriers to entry (hardware vs software) compared to Smart Eye. Thus, we have reason to believe that the perceptual change could be quite substantial, should Neonode be perceived as a hot autotech company. If Neonode would manage to close one single automotive contract it could have a value the size of half of today's market cap. As an example, We believe the steering wheel partnership with Autoliv could alone be worth USD 100m, although this lies a couple of years down the road, and consequently is not on the stock market's radar. Euro NCAP is now mandating driver monitoring technology but it still does not have any activities within hands on the steering wheel. According to our industry sources though, it is likely that such activities could start going forward.

Break-even and large module deals to drive the stock price

We argue that financial reports with black figures are needed in order to change the perception of investors and move the stock. In addition, large module contracts, especially in auto, are important catalysts for the Neonode shares (but of course the company also need to deliver on those contracts - not only announce them).

Valuation

Bear Case 2.0 USD

Our investment case relies to a great extent on the assumption that Neonode will eventually succeed in its module business. In our bear case we assume Neonode shuts down the module fab in 2021 and therefore can cut OPEX by 40%. By lowering its ambitions and laying off people Neonode could maintain high license profit margins but would then become a company of minor size with limited growth possibilities. We believe Neonode can have a decent success in monetizing licenses in its old areas and keep printer sales stable, but we do not see any traction in new verticals such as med-tech and military etc. The main difference in our bear case compared to our base scenario is the automotive modules. However, we expect steering wheel licensing revenue, albeit a bit delayed. We assume the focus, in general, will be on license deals. In total we forecast volumes of 3 million in automotive during year 2025, meaning half the volumes and half the revenue of our base case. We believe that one big risk in automotive is tier-1 suppliers launching their own optical solutions and that this materializes in a reasonably pessimistic scenario. In our bear case we also apply a higher margin of safety when it comes to the long-term technology risks as the many shortcomings of pro cap provide a massive incentive for development of existing and new technologies to replace pro cap. However, we do believe that pro cap, in a bear case, would prove to be more viable than expected, preventing Neonode from expanding. Basically, we expect a status quo compared to what the company currently delivers. With the assumptions above we expect a slower CAGR sales growth of 19% during 2019-2025 and 4% during 2026-2028. Neonode would break even in the end of 2021 from savings and layoffs (a 40% OPEX reduction) and would then reach an EBIT margin of ~15% during 2022-2025 and a long-term EBIT margin of 10 percent.

Base Case 5.0 USD

In our scenario analysis we use a required rate of return of 12%. In our base case we expect Neonode to find product/market-fit in automotive and be able to provide modules, although it will take some time. We expect modules to account for about half of automotive volumes in 2023. In printers, however, we do not expect any module conversion at all. We estimate a 38% CAGR automotive volume growth during 2019-2025 where infotainment volumes grow to 1.6 million - slower than the market. The remaining growth is divided by modules from collision avoidance sensors, tailgates and licenses for steering wheels. Steering wheels are the most important area given the high ASP, although we use more conservative ramp-up assumptions. In total, we forecast about 7 million sensor modules and licenses in automotive during year 2025. As for printers we assume an addressable market of 50 million units taking into account higher touch penetration but less focus from Neonode on the low-end printers. We assume Neonode can grow its volumes by a CAGR of 8% to 11m (compared to 9m in 2016), reaching a market share of about 20% and a CAGR sales growth of 8% during years 2019-2025. We expect other sensor module volumes reaching around 340 000 in 2025 since the new segments, like med-tech, have smaller volumes. We estimate a blended ASP of about USD 10-16 during the period, meaning sales reaching USD 5m in 2025. As for AirBar we expect it to be discontinued and not sold to a third party. We assume average module gross margins of about 45 percent for all module applications during 2018-2025. Our OPEX assumptions implies scalability as we expect a CAGR OPEX growth of only 7% during 2019-2025, considerably less than the sales growth. From the assumptions mentioned above we derive a CAGR sales growth of 35% during years 2019-2025. The sustainable break-even is estimated around 2023 with

Bull Case 10.0 USD

In bull case we assume that there are no more hick-ups in the module business. We also believe that the cars in 2025 would include on average around 30% more modules than our base case, due to tailgate and collision avoidance sensors. We expect higher volumes for the steering wheel. If Autoliv maintains a 50+ percent win ratio on new contracts and consequently approaches its target of doubling its market share Neonode should sooner or later get a piece of the pie. Besides higher automotive revenue, our bull case also differs from our base case when it comes to new verticals. We expect 50% higher volumes from new verticals in 2025 compared to our base case, most notably related to the med-tech and military areas, where we believe Neonode has a strong value proposition. In addition, we assume a twice as high patent enforcement fee from Aequitas (USD ~14m). From the assumptions above we estimate a CAGR sales growth of 45% during years 2019-2025 with the EBIT margin averaging 22% during 2022-2027. Hereafter we expect that margins will reach a sustainable, long-term EBIT margin of a solid 25% due to scalability and lower investment needs.

a temporary profit around 2021 due to a one-off payment of USD 7m related to Aequitas and enforcement of the patents. We see the EBIT margin reaching 23% during 2023, whereafter margins will start to approach the long-term EBIT margin of 16%.

Catalysts

Patent Monetization

Neonode has a contract with Aequis where Aequis will try to monetize some of Neonode's patent for a 50/50 revenue share. In return, Aequis covers all the costs of the process. Neonode can revoke the patents within a few weeks if Aequis has not met certain milestones. If Neonode does not revoke the patents, we believe it has a great case in receiving license payments from patent infringers.

IMPACT					
Downside		Upside		Time Frame	
Significance	Likelihood	Significance	Likelihood		
Minor	Possible	Major	Possible	Mid	

Major module deals

In the fall of 2016 Neonode received a module deal of in total USD 11 million related to door handle modules for one car model. Similar deals would have a major impact on the share price. We especially believe that a design win for the steering wheel together with Autoliv/Veoneer would be positive as touch in steering wheels is crucial in handing over from automatic to manual driving.

IMPACT					
Downside		Upside		Time Frame	
Significance	Likelihood	Significance	Likelihood		
Minor	Possible	Major	Possible	Mid	

Break-even

We expect the reaching of break-even in the end of 2021 which would be an important milestone for the stock market to grasp that Neonode has left the losses behind and hit the point of inflection.

IMPACT					
Downside		Upside		Time Frame	
Significance	Likelihood	Significance	Likelihood		
Minor	Possible	Major	Possible	Long	

Summary Redeye Rating

The rating consists of three valuation keys, each constituting an overall assessment of several factors that are rated on a scale of 0 to 1 points. The maximum score for a valuation key is 5 points.

Rating changes in the report

We raise our People rating from 3 to 4, as mentioned above.

People: 4

The Board members are aboard, holding substantial amounts of shares, particularly the COB, Ulf Rosberg, who holds 18 %. Reputable investor Peter Lindell owns 17 %. These new main owners come from the private equity industry and we believe they will not tolerate more mis-management. The new CEO Urban Forssell that joined in January 2020 has a successful track record in building autotech businesses, which we believe is important for Neonode as automotive is its number one growth area. Overall, Management has been long in the organization or have experience from adjacent industries. Neonode has earlier missed its guidance on several occasions causing stock market mistrust, although operationally it has managed to pivot from e-readers to automotive and printing, demonstrating years of consistent hard work in order to be auto qualified. The large investments thus could pay off. For a higher ownership score we would primarily therefore like to see share purchases from the Management as executives only have minor holdings.

Business: 3

With the many competitive advantages of its unique, patented technology, Neonode is poised to benefit from the generally growing sensor penetration for touch and gesture applications. Following challenging qualification phases of several years, Neonode managed to break into automotive (infotainment), launching over 30 car models with a large number of different tier-1s. We believe there is an opportunity to add several more use cases in automotive, e.g. the steering wheel partnership with Autoliv. In addition, the modules open up a world of new opportunities in segments that previously were not worthwhile due to low volumes or extensive integration work, e.g. medtech. The company has detected viable niches in rugged touch for professional users and touchless touch.

Financials: 2

As Neonode never before has been able to reach profitability our retrospective profitability Redeye Rating can be no more than 0. However, we believe that Neonode slowly is getting closer and closer to the point of break-even. The base of license revenue together with scalability and the low costs indicate that Neonode seems to have the ingredients it takes to be profitable in the future. At that point, the rating would start to gradually increase. Neonode has a lean balance sheet, basically without debt or capitalized assets. Neonode did a USD 4.7m private placement in December 2018, but our estimates assume another financing round in mid-2020. As for operative risks, there is a rather narrow product portfolio and a major dependence on a few customers.

INCOME STATEMENT	2018	2019	2020E	2021E	2022E
Net sales	9	7	6	14	14
Total operating costs	-11	-9	-7	-13	-15
EBITDA	-3	-3	-2	2	-1
Depreciation	-1	-3	-3	0	-1
Amortization	0	0	0	0	0
Impairment charges	0	0	0	0	0
EBIT	-4	-6	-5	1	-2
Share in profits	0	0	0	0	0
Net financial items	0	0	0	0	0
Exchange rate dif.	0	0	0	0	0
Pre-tax profit	-4	-6	-5	1	-2
Tax	0	0	0	0	0
Net earnings	-4	-6	-5	1	-2

BALANCE SHEET	2018	2019	2020E	2021E	2022E
Assets					
<i>Current assets</i>					
Cash in banks	7	2	2	2	1
Receivables	3	2	2	5	4
Inventories	1	1	1	2	2
Other current assets	0	0	0	0	0
Current assets	10	5	5	9	7
<i>Fixed assets</i>					
Tangible assets	2	2	0	1	1
Associated comp.	0	0	0	0	0
Investments	0	0	0	0	0
Goodwill	0	0	0	0	0
Cap. exp. for dev.	0	0	0	0	0
0 intangible rights	0	0	0	0	0
0 non-current assets	0	0	0	0	0
Total fixed assets	3	2	0	1	1
Deferred tax assets	0	0	0	0	0
Total (assets)	13	7	5	10	8
Liabilities					
<i>Current liabilities</i>					
Short-term debt	0	0	0	0	1
Accounts payable	2	3	2	5	5
0 current liabilities	0	0	0	0	0
Current liabilities	2	3	2	5	6
Long-term debt	0	0	0	0	0
0 long-term liabilities	1	1	1	1	1
Convertibles	0	0	0	0	0
Total Liabilities	3	4	3	6	7
Deferred tax liab	0	0	0	0	0
Provisions	0	0	0	0	0
Shareholders' equity	12	6	5	6	4
Minority interest (BS)	-2	-3	-3	-3	-3
Minority & equity	10	4	2	4	2
Total liab & SE	13	7	5	10	8

FREE CASH FLOW	2018	2019	2020E	2021E	2022E
Net sales	9	7	6	14	14
Total operating costs	-11	-9	-7	-13	-15
Depreciations total	-1	-3	-3	0	-1
EBIT	-4	-6	-5	1	-2
Taxes on EBIT	0	0	0	0	0
NOPLAT	-4	-6	-5	1	-2
Depreciation	1	3	3	0	1
Gross cash flow	-3	-3	-1	2	-1
Change in WC	-1	1	0	-1	0
Gross CAPEX	0	-2	-2	-1	-1
Free cash flow	-4	-4	-3	0	-2

CAPITAL STRUCTURE	2018	2019	2020E	2021E	2022E
Equity ratio	74%	52%	43%	38%	19%
Debt/equity ratio	0%	6%	8%	6%	32%
Net debt	-7	-2	-2	-2	1
Capital employed	3	2	0	2	2
Capital turnover rate	0.6	0.9	1.1	1.5	1.7

GROWTH	2018	2019	2020E	2021E	2022E
Sales growth	-17%	-22%	-16%	160%	-4%
EPS growth (adj)	600%	-4%	-29%	-131%	-245%

DCF VALUATION		CASH FLOW, MUSD	
WACC (%)	11.6 %	NPV FCF (2020-2021)	-5
		NPV FCF (2022-2028)	26
		NPV FCF (2029-)	25
		Non-operating assets	1
		Interest-bearing debt	0
		Fair value estimate MUSD	47
Assumptions 2020-2026 (%)			
Average sales growth	41.1 %	Fair value e. per share, USD	4.7
EBIT margin	1.6 %	Share price, USD	4.0

PROFITABILITY	2018	2019	2020E	2021E	2022E
ROE	-38%	-62%	-83%	26%	-40%
ROCE	-44%	-82%	-139%	43%	-59%
ROIC	-187%	-175%	-245%	288%	-102%
EBITDA margin	-34%	-38%	-28%	13%	-8%
EBIT margin	-45%	-86%	-86%	10%	-15%
Net margin	-46%	-85%	-83%	10%	-15%

DATA PER SHARE	2018	2019	2020E	2021E	2022E
EPS	-0.67	-0.64	-0.46	0.14	-0.20
EPS adj	-0.67	-0.64	-0.46	0.14	-0.20
Dividend	0.00	0.00	0.00	0.00	0.00
Net debt	-1.12	-0.22	-0.17	-0.16	0.06
Total shares	5.86	8.80	10.17	10.17	10.17

VALUATION	2018	2019	2020E	2021E	2022E
EV	4.4	16.4	40.3	40.4	42.7
P/E	-2.5	-3.0	-8.8	28.9	-19.9
P/E diluted	-2.5	-3.0	-8.8	28.9	-19.9
P/Sales	1.1	2.6	7.4	2.8	2.9
EV/Sales	0.5	2.5	7.3	2.8	3.1
EV/EBITDA	-1.5	-6.4	-25.7	21.9	-38.2
EV/EBIT	-1.1	-2.9	-8.5	28.5	-20.8
P/BV	0.8	2.7	8.6	6.6	9.9

SHARE PERFORMANCE		GROWTH/YEAR	18/20E
1 month	71.1 %	Net sales	-19.3 %
3 month	66.1 %	Operating profit adj	10.8 %
12 month	22.9 %	EPS, just	-17.6 %
Since start of the year	107.2 %	Equity	-52.5 %

SHAREHOLDER STRUCTURE %	CAPITAL	VOTES
Ulf Rosberg	17.3 %	17.3 %
Peter Lindell	16.7 %	17.4 %
AWM Investment	6.0 %	6.0 %
Carl Grevelius	5.1 %	5.1 %
Andreas Bunge	1.1 %	1.1 %
Blackrock Inc	1.1 %	1.1 %
Vanguard Group	0.5 %	0.5 %
Geode Capital Management	0.2 %	0.2 %
FMR LLC	0.2 %	0.2 %
Credit Suisse Group	0.2 %	0.2 %

SHARE INFORMATION	
Reuters code	NEON.OQ
List	NASDAQ
Share price	4.0
Total shares, million	10.2
Market Cap, MUSD	40.9

MANAGEMENT & BOARD	
CEO	Urban Forssell
CFO	Maria Ek
IR	David Brunton
Chairman	Ulf Rosberg

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Redeye Rating and Background Definitions

Company Quality

Company Quality is based on a set of quality checks across three categories; PEOPLE, BUSINESS, FINANCE. These are the building blocks that enable a company to deliver sustained operational outperformance and attractive long-term earnings growth.

Each category is grouped into multiple sub-categories assessed by five checks. These are based on widely accepted and tested investment criteria and used by demonstrably successful investors and investment firms. Each sub-category may also include a complementary check that provides additional information to assist with investment decision-making.

If a check is successful, it is assigned a score of one point; the total successful checks are added to give a score for each sub-category. The overall score for a category is the average of all sub-category scores, based on a scale that ranges from 0 to 5 rounded up to the nearest whole number. The overall score for each category is then used to generate the size of the bar in the Company Quality graphic.

People

At the end of the day, people drive profits. Not numbers. Understanding the motivations of people behind a business is a significant part of understanding the long-term drive of the company. It all comes down to doing business with people you trust, or at least avoiding dealing with people of questionable character.

The People rating is based on quantitative scores in seven categories:

- Passion, Execution, Capital Allocation, Communication, Compensation, Ownership, and Board.

Business

If you don't understand the competitive environment and don't have a clear sense of how the business will engage customers, create value and consistently deliver that value at a profit, you won't succeed as an investor. Knowing the business model inside out will provide you some level of certainty and reduce the risk when you buy a stock.

The Business rating is based on quantitative scores grouped into five sub-categories:

- Business Scalability, Market Structure, Value Proposition, Economic Moat, and Operational Risks.

Financials

Investing is part art, part science. Financial ratios make up most of the science. Ratios are used to evaluate the financial soundness of a business. Also, these ratios are key factors that will impact a company's financial performance and valuation. However, you only need a few to determine whether a company is financially strong or weak.

The Financial rating is based on quantitative scores that are grouped into five separate categories:

- Earnings Power, Profit Margin, Growth Rate, Financial Health, and Earnings Quality.

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Disclaimer

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Redeye Rating (2020-05-15)

Rating	People	Business	Financials
5p	13	11	4
3p - 4p	104	79	30
0p - 2p	8	35	91
Company N	125	125	125

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Westman owns shares in the company : Yes

Havan owns shares in the company : No

Redeye performs/have performed services for the Company and receives/have received compensation from the Company in connection with this.