Investor Day

Thursday, 31st May 2018

Creating a Trusted Leader in Mobility

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Role, Veoneer

We have now changed ourselves into Veoneer. Quick change. So welcome to those of you in the room. Welcome to the webcast teleconference. So, we are Veoneer. As you know, we are the new kid on the block but we are, as today will show, a very experienced kid. My Name is Thomas Jönsson and I will be working in communications and investor relations for the year moving forward. And I just want to mention to this audience that also investor relations and I will be working together with Ray Pekar who many of you know and who might be in the room or very near the room.

Yes, so moving into the program. This is the safe harbor statement and as you all know, this is an integral part of all the presentations including the Q&As that are about to follow. And let me take you to the program.

We will start with the welcome. That is what I am doing now, hopefully to everybody's pleasure. But then we will listen to Jan Carlson, who will talk about creating a trusted leader in mobility, really outlining the corporate strategy and of course, now Jan steps in as the President and CEO of Veoneer. We will then listen to our market and sales outlook presented by Art Blanchford, who is the Executive Vice President for Sales and Product Planning of Veoneer moving forward. And after that, operations and technologies where Johan Löfvenholm, who is Chief Operating Officer, will take us through an overview. Then we will do it slightly differently maybe than from the normal investor day, where we will deep dive into three specific areas. We thought it is important to look at some of the key areas that we think will drive growth and where we think there's a lot of competitive discussion as well. So, we will look at the areas of Vision, software and then also a long-term research focus. After that short break, Mathias Hermansson, as you know, was appointed CFO of Veoneer back in January – new to our company, new to our industry – will talk about value creation and our financial strategy moving forward. Then we'll move into a Q&A.

That's our program. I hope you will enjoy it. And just – let's see if I can give you this now.

We are Veoneer. New company. New company name. I hope all of you will say it many, many, many times over the years to come. And it's easy. It's Veoneer. But for those of us who are not native English, I have noticed that sometimes this causes a little bit of problems. So I will now do this once and I promise I will never do it again. But it is… 'Ve – o – neer'. Three syllables. 'Ve – o – neer'. We are Veoneer. All right.

Creating a Trusted Leader in Mobility

Jan Carlson

Chief Executive Officer, Veoneer

J: Thank you, Thomas. Yes. This is really fun and exciting. Can you hear me? Good. I'm not sure if the mike is working but… Okay. Right, very good. It is exciting to be here and it is actually extremely exciting for me personally to stand here and be part of a new-born company. I have been with Autoliv, as you know, for many, many years and now to have this opportunity to launch a new company in such an interesting space is extremely exciting.

I would like to welcome you all here, all of you, of course, here in the room and also I would like to welcome everyone on the webcast. All of you extremely welcome to this afternoon.

I am proud to be here today, as I said. Before we go into the real presentation, I would like to show you a short little movie.

[Video Presentation]

We are waiting because we have some problems with the loudspeaker system here. In the room, there's problem. So for all of you here on the webcast, just bear with us for a short moment. And as you know, it's all about reliability. And we know how it is when it's not working properly. Now this is not loud enough to hear in the presentation room. So maybe we should… Oh, look at this. Okay, it's working.

So I hope everyone on the webcast can hear us all so well and now we are up and running here with the loudspeaker systems in Stockholm. So let's move on and have a brief look on our introductory movie.

[Video Presentation]

Our purpose – Creating Trust in Mobility

Our purpose in Veoneer is just to create trust in mobility. A new unique technology company is created with a strong heritage and DNA of safety and saving lives, delivering quality and robustness and also a sharp edge in state of the art technologies for future mobility.

As we move forward in today's environment, and as you will see in our equity story here today, we are well prepared and committed to not only have the trust of our OEMs but equally important also to gain the trust from the greater society and the consumers who actually are experiencing our products every day.

Addressing a Market of Around $43 Bn in 2025

As illustrated here on this page, the blue bars in the base line is the base line addressable market. This opportunity is what we presented to you in the CMD in 2017. But since then, we have also started to update our scope to include additional products beyond our previous definition. And more specifically here, these products include driver monitoring system, digital mapping and connectivity systems. These active safety market

opportunities would increase our overall addressable market by roughly $6 billion in 2025. And our overall addressable market would then grow to around $50 billion in 2025, corresponding to accumulated average growth rate of 12.%

Substantial Growth in the Active Safety Market

If we look into some details here, we can see active safety is the main driver of our market growth. And as eluded to on the previous slide, the 2025 market size would increase to around $30 billion from around $24 billion, as we communicated on the last CMD. This increase is mainly due to the product scope I just mentioned here that we are evaluating, but also somewhat coming from increased penetration of vehicles with ADAS and autonomous drive features. And that is due to a growing customer demand and increasing regulatory and rating requirements. And as a consequence, here on this page we would see an average growth rate of active safety market to approximately 25% through 2025.

Take Rate Increases Drive Content per Vehicle in Active Safety

Two of the more important drivers for the market and content for vehicles are vision and radar where we, by 2022, estimate approximately 50% of the vehicles will have a forward looking camera and roughly around 20% of the vehicles will have five radars. And we estimate the content per vehicle in 2025 to be between $225 and $275, and that is up due to the wider-addressable market, but also, as I mentioned, through quicker adoption of cameras and radars and other technologies like LiDAR.

May 17, 2018 Proposed EU Mandate

Another important factor, of course, is always the regulatory and mandated requirements. As some of you may have seen already a couple of weeks ago, the European Commission has proposed a new mandate for vehicle safety systems for new features. And this mandate is aimed to be introduced in the beginning of the next decade, some 2021 or 2022 and it would includecertain features and functions to be mandated in all new vehicles for consumer purchase. Assuming that this proposed timing is approved, it could drive faster adoption of the systems, as mentioned on the slide, and that is actually faster than the NCAP rating in such case would bring.

Continued Execution Since Capital Markets Day – Sept. 2017

Since our last CMD, we have continued to deliver results and that will keep us on track towards our targets. We can report here a record order intake over the last 12 months. We have a level 3 system awarded from Geely, including Zenuity software. We have two major Vision contracts and we have a driving monitoring contract win.

In addition, we have made complementary acquisitions in LiDAR, which is the Fotonic acquisition, and we have added approximately 500 software engineers.

Tremendous Order Intake Increase Over Last Three Years

Due to new and robust product portfolio, our order intake nearly quadrupled over the last two years. Our new orders ranged from individual component orders, singular products to complete systems and our strong momentum continues as our last 12 month order intake of $1.1 billion is 48% above the prior 12 months. And the last 12 month order volume

corresponds to a lifetime value of between $5 and $6 billion. Of this $1.1 billion, more than $600 million is coming from active safety. And that same number for 2017 was $450 million.

Active Safety Customer Base Strengthened…with Accelerating Pace of Customer Wins

This slide shows the progress with our customer base. During 2016 and 2017, we made significant improvements, increasing the number of customers where we are on the bid list or technically approved or awarded business. This progress was based upon a new product portfolio that we launched in the beginning of 2016. This is how the same page looked like nine months later.

The changes here are marked in red and, as you can see, we have continued to make significant progress. Five more customers on the bid list, four more customers where we are technically qualified and two new customers awarded business to us. First business awards in LiDAR, driver monitoring, RoadScape and in software features. So significant progress over the last nine months.

Significant Ramp-up of Active Safety New Program Launches as of Sept – 2017 CMD

We also showed this page on the last CMD. This is significant start fof productions and orders awarded between first half 2016 and September 2017. And updating this page to where we are today, you can see that we have added more than 10 important orders since September last year. We have SOPs in new product areas, we have additional launches in all other product areas, and also here a significant progress over the last nine months.

Successful Customer Base Expansion Across Segments

Our active safety contomer base has doubled and with those we were engaged in active pursuit with has increased five times between 2013 and today. We estimate that our current market share in active safety today is around 15%.

And as you can see from this slide, it's not only in active safety we are making good progress. It is also in the other product areas. In restraint control, we have increased with 40% since 2013 and this is making us the market leader in this product area with the market share of roughly 25%. In brake control, the effect of forming a joint venture has been significant. In 2013, the number reflected the situation for Nissin Kogyo only and today you can see that we have a significant improvement to eight customers on the bid list technically qualified or business awarded from.

A Tech Company Delivering Automotive Grade

Our products are widely installed, which is an important factor. In active safety, we have more than 175 models installed. We are heading towards over 260 models in 2022. Over the years, we have delivered around 4 million cameras and more than 30 million radar units. And this is along with around 750 million electronic control units and crash sensors. A great track record of delivering robust reliable technology meeting automotive grade.

A Tech Company Committed to Creating Trust in Mobility

And now this set of achievements for us is what makes Veoneer so well positioned in our infrastructure and portfolio IP. We have a very strong IP portfolio in the form of approximately 500 product families directly related to the scope of ADAS, autonomous drive and safety electronics. In total, we have around 100 vehicles between Veoneer and Zenuity that are collecting data for ADAS and autonomous drive applications. And we have collected more than 15 petabytes of data. And Zenuity is collecting approximately 16 terabytes of data per car and per day for each day of driving.

How to Meet the Challenges of Autonomous Driving?

So if we now look to the situation today, we said in the beginning that it's all about trust and for some time, we have seen an ongoing race in the autonomous drive area between tech companies, tier 1's and OEMs on how to demonstrate an even higher capability and more features of autonomous drive. Unfortunately, though, we are seeing consumer confidence in self-driving technology being reduced and that is probably in light of the accidents and events that we have seen tragically happening over the last quarters. And to be able to gain this trust, the industry needs now to focus and produce systems that is maximizing reliability, robustness and reliability towards traditional automotive grade solutions, rather than maximizing number of features. And that is exactly the purpose of Veoneer. Creating trust in mobility.

Veoneer – our purpose

Our insight is that in the complex new reality, our customers need an expert partner working in new ways. And our core strategy is to deliver innovative solutions you can trust. And we will execute this strategy through our core pillars: flawless execution, customer-centric collaboration and human-centric innovation. This is the core of Veoneer.

Execution of our Core Pillars to Create Trust in Mobility

It is through relentless execution we will make Veoneer's strategy reality. And all core pillars are supporting our strategy that is already a part of the Veoneer's DNA from the start. Strong execution has given us the number one position in quality. Our technology is almost all cases developed together with customers in collaboration with customers throughout the world. And our future innovation focused on the learning intelligent vehicle is oriented towards human machine interaction.

Uniquely Positioned to Lead Mobility Innovation

Veoneer is in a perfect position to be the trusted expert partner for future mobility. We believe we are the world's biggest pure play in our domain, building on automotive grade heritage in our DNA for development and scalable manufacturing to meet the highest safety standard switch increasingly optimized cost on one hand, further developing state of the art technology in our sensor systems and advanced software on the other hand. This is how we are bringing the best of the automotive ecosystem together with the tech world to create this unique position as the trusted expert pattern for future mobility.

Software Features as Additional Future Revenue Stream

Our current offering bundles, quite often, hardware and software where software is coming more or less subsidized, embedded in the hardware. With more investments in software and the higher level of automation, there will be an increasing separation between hardware and software. This is driven by hardware being increasingly more powerful and more centralized, other reasons are that an increased number of features, new business models will enable where revenue can come from either being paid for sending or receiving data. Upgrades and over the air possibilities will also support a separation of software revenue being bundled into the hardware.

Veoneer's Software Model – Customized for the Customer

Here, we have an illustration of Veoneer and Zenuity business model and revenue model. The business model starts with Veoneer addressing their entire OEM market, except Volvo. Veoneer provides an integrated system and customer application to the vehicle OEMs. Zenuity supplies ADAS and autonomous drive software and hardware agnostics to Veoneer.

The revenue model controls – Veoneer controls the pricing to the vehicle OEMs. This software – this includes software from Zenuity, hardware and related software and service from Veoneer. The business model also builds on that Zenuity charges Veoneer a fee per unit for software and different features. And Zenuity is charging Volvo a fee per unit on the same terms.

Our ADAS / AD Ecosystem, Complemented by Partnerships

To become an integrator of future autonomous drive technologies, you need an entire ecosystem in place and access to buy a variety of knowledge. Veoneer has developed an ecosystem of strategic partnerships to complement our own capabilities. This will enable us to be a system integrator and capitalize on cutting edge technologies without investing in everything ourselves. Within Veoneer, we will always make sure that we have a state of the art technology at our core to be an attractive contributor to future collaborations.

Hardware & Software Evolution Towards Autonomous Driving

Higher level of autonomy requires also substantially more sensors. In level one, the driver assistance case here to the left of this page is a lower single digit number of sensors. This is growing to more than 15 sensors in level three and more than 25 sensors in level four and level five. And the estimate value for these sensors is growing from approximately $100 to 500 for level one to somewhere between – up to $10,000 for the higher cases level four and level five. This number is an approximate number because we don't really know yet how the ultimate production cost will turn out to be. This is an early stage and is an early estimation but it points to that there is a big market potential for Veoneer when there is an increasing number of vehicles that will go to level three and beyond.

Creating Trust in Mobility

On this page, we have summarized our core competitive strengths that will enable us to be this trusted expert partner. Our people and their dedication to quality and robustness, our proven track record of innovation, a world class ecosystem which includes several partners and a global footprint.

Our Associates are the Architects of Our Success

Starting with the people, engineering is a talent – is a key differentiator for Veoneer. Our people here represent 3,700 in engineering, which is roughly doubling over the last two years. 65% of all people in the engineering are software oriented and focused on software as a whole over the company. In addition, we have around 500 people focused on software in Zenuity. We have 600 people focused only on Vision. And we are, we believe, an attractive company because we are a leader in one of the most interesting domains currently out there. This autonomous drive space is, of course, drawing a lot of attention because it gives you an opportunity to work with the latest technology in a dynamic environment but it also means something for mankind as a whole. It is a meaningful exercise we are doing because we are ultimately saving lives and contributing to society at large.

Proven Track-Record of Commercializing Many World Firsts

We have a proven ability to commercialize world firsts. Development and technology is not something that is new. We have a long history in this case. We started in 1980s with airbag controllers and we have seen an accelerating pace over the last number of years in commercializing world firsts in electronics. In the last decade, we started the architectural change of safety electronics by merging the inertia measurement unit into our airbag controller. And earlier this decade, we launched the world's first autonomous emergency braking based on vision only with BMW and based on radar only with Mercedes.

A Global Footprint – Leading "Pure-Play" in Safety Electronics

We have a fantastic starting point with our global organization. It's represented in 13 countries. We have 9 manufacturing sites and we have 17 tech centers. In addition, our strong customer base and footprint of 22 OEMs drove our sales in 2017 to $2.3 billion. In total, we have a global workforce of 7,600 associates, so approximately 50% of those are in the engineering side. And close to a third of the 7,600 is in software engineering.

Serving Blue-Chip OEMs Across All Key Regions

We serve all the leading OEMs already globally and we have an increasing balance across our customers. With Honda and Daimler as the largest customers today. And we have a stable split over the different regions with a significant exposure also to the expanding market and emerging markets, in particular in China.

Unchanged Medium-Term Targets and Long-Term Ambition

So our targets remain unchanged since our CMD in 2017. But based upon our evaluation, as I mentioned earlier, for a wider accessible market, we have updated the long-term ambition for active safety. We have updated this for 2025 from around $4 billion to more than $4 billion. We see a double digit growth with a significant margin improvement over the upcoming years and our targets for 2020, we expected $3 billion revenue, out of which more than $1 billion coming from active safety and our 2022 target, we expect a $4 billion revenue with roughly around $2 billion coming from active safety. And as I said, our ambition revenue for 2025 in total is more than $6 billion but now out of that more than $4 billion is coming from active safety.

Summary Key Investment Highlights

Just wanted to summarize the key investment highlights for Veoneer. Why to invest in Veoneer? Well, first of all, we have an exceptional technology and exceptional growth opportunity. A strong double-digit growth over the upcoming years where content per vehicle in active safety by 2025 is expected to be five times what we see today.

We are a technology company dedicated to safety, advanced driver assistance and autonomous driving. Our active safety products are currently installed, as I mentioned, in 175 models. We have a heritage of shipping high quality products over many, many years. This will enable us to safeguard reliability and robustness of our products going forward.

We have a proven track record and heritage in automotive safety. We have now a record annualized order intake of $1.1 billion over the last 12 months, up 48%, where of $600 million of this $1.1 billion over the last 12 months is coming from active safety. And lastly, we are focusing to create long-term value for our stakeholders. Our 7,600 associates support the long-term focus on quality, reliability and to create a double digit operating margin for the long term.

And with that, I would like to take the opportunity to introduce Art on stage. Art, welcome up. You are going to present to us the sales part of this. Art, Executive Vice President in Sales and Product planning. Thank you.

Our Market and Sales Outlook

Art Blanchford

Executive Vice President, Sales and Product

Thank you very much. Thank you very much, Jan. And for those of you who don't know me, like Jan said, Art Blanchford. I have also been with Autoliv for a very long time, even a little bit longer than Jan, and have been in many areas. Been in Operations, Sales, Engineering, Program Management in all three regions of the company. And I have to say, it's very exciting to be now in charge of the sales and market planning for this big start-up company that we have. So it's a very, very exciting opportunity.

So thanks for the opportunity to be here today. I'm going to share a little bit about our market outlook and our sales outlook. A little bit more detail than what you have seen so far from Jan.

Leading Market Position in Large and Rapid Growing Market

Taking a first look at the overall market, we're already in a very exciting market. 2017, it's already a $20 billion market. And as Jan said, it's expected to grow to approaching $50 billion if we consider the new product areas and the new mandates that are coming now, we'll be approaching a $50 billion addressable market by 2025, which represents a 12% compound at annual growth rate over that period. Considering that light vehicles is only 2%, that's quite an exciting place to be inside of the vehicle market. And today, we are already among the leaders in active safety and the clear leader in restraints controls. And while we're not the market leader in brake systems, we are leading in the advance technology of new brake systems where all the growth is, which you'll see in a minute.

So I think, as a whole, we're in a very exciting position in a very exciting market.

Substantial Growth in Active Safety Market

So as said, most of the growth is in active safety. As you can see here, growing from $5 billion last year to approaching $30 billion with its additional market upside by 2025. That makes a compound of growth rate of 25% over that business planning period. And a lot of that growth, as Jan has mentioned, is in this new technology areas that are not fully understood yet but are coming faster than we have thought that they would come.

So what are the main drivers for this active safety market? It's really coming from growing customer – and here when I say customer, it's customer and consumer demand. It's not just our OEM customers but the consumers themselves – increased demand from safety and convenience, brand differentiation between the OEMs, then really increasing regulation and/or safety ratings. Even if it's not regulation, the safety ratings drive consumer buy and that's increasing those ratings in the content. And then clearly more long term, this race toward achieving fully autonomous vehicles. Right, and that will drive a lot in the long term.

Increasing Customer Demand for Active Safety Features

So let's look in a little bit more detail on each one of these. So clearly both customer and consumer demand, you see in our Mercedes advertising that they can drive better than you can. Alright. And in some cases, that's probably true. Better than I can. There's a lot of other ones being driven. You know, lane keeping, convenience feature for lane keeping. You know, Cadillac has just introduced this super-cruise, which is really the first – unlike Tesla's prototype – system that can drive hands-free in a safe way, also with driver monitoring systems. Blind spot, which Veoneer has a huge take rate in the radars that you saw, the 30 million sensors of radars that we've supplied, which is blind spot is becoming more and more standard and demanded by consumers. And I want to give one other example here. It's not just the regulation, I mean, that's pulling this. In 2017 in North America, there's 20 OEMs that sell cars in North America. And in 2017, they all signed up to this MOU to make autonomous emergency breaking standard by 2022. That's without regulation. That's been driven by consumers and by our customers. So that's pretty fantastic on its own.

But on top of that, many of them have already committed to doing it earlier than 2022. For example, every new Toyota launch now in North America, already today, as of September last year is having 100% AEB penetration. There's other features consumers are driving, like automated head lamps and active cruise control as well that are being driven by consumers. So there's major trends, both in regulation but also from customers and consumers.

ADAS Critical to Achieve Higher Safety Ratings

So next we'll talk about regulation and safety ratings as a whole. And I know this slide is a little bit busy but if you look here, each one of these features is in the roadmap for Euro NCAP safety ratings. Not so long in the future, right. It's 2018 through to latest 2024. And this is separate than what Jan was talking about with the mandates that could be requiring things to be 100% but each of these, including driver monitoring and

connectivity, V2X, various features with AEB. If they become part of NCAP, which is now expected, this will drive take rates also very quickly because it's proven that a five-star safety rating is really a purchase decision driver for consumers and these would be necessary in Europe and in fast followers like China or maybe even leap-froggers like China to have these in all of those cars to get the five star rating.

I'll give one example here, just thinking about AEB take rates. Last year was 10% and by 2025, using various technologies, we estimate it'll be greater than 70% of cars of the whole world will have AEB.

Hardware Need for Various Levels of Autonomy

And then the third area looking at full autonomy. As we come towards full autonomy, how does that drive take rates? And as Jan mentioned, right, there's, you know, a few sensors in the level one car up to 25 sensors over in the level four/five car, which drives a tremendous amount of content and sales opportunity per vehicle. Even if this is a long way out, here in level three, which is coming now, there's over 15 sensors. And as Jan also said, it's not clear what the actual cost of those will be as we get them fully industrialized but it's a great upside in the longer term to continue to growth of this company as we go forward.

Estimated Take Rates for Selected Active Safety Products

So looking at some of those take rates in a little bit more detail. Right, as you can see, forward looking cameras. You know, we have a 34 point or a 3x increase in take rates from 17 just to 51. And then if you break down the radars in a little bit more detail, so we have this long range frontal radars mostly here in Europe. The mid-range, which are used in other areas also for AEB, and then side and rear corner radars. And again, you see anywhere from a two to three and a half times increase in penetration rate over the next few years. Alright, and this has been driven by the things that we've talked about over the last few slides. And then ADAS controllers, one of the fastest growing areas as we need more and more computation power, right. Today, we've only seen about 3% take rate. By 2022, again, 4x that at 13% take rate for these super brains that are going to be running ADAS controls centrally as we go forward with active safety.

Restraint Control Systems Market Largely Unchanged

And I want to talk a little bit about restraints control systems. Some people say this is not quite as an exciting market and in some ways it isn't but it's absolutely foundational and key for the success of Veoneer. The market is stable. Right, we have this slow LPB growth and then we have normal cost reductions in the automotive industry, so it makes the market about flat. But we have – and then there's also – you know, we have also some offset as we start to combine ADAS controllers into a safety domain controller both with RCS and active safety coming together and together with event data recorders, black boxes, if you will. That's keeping the market about flat. But really to me it's absolutely key because it's the leadership here, as Jan talked about the trust that we've developed and the ability to make technology automotive grade and that trust comes from the history of the 750 million RCS units that we have in the field with the lowest recall rate out there. So this is what makes it possible for the OEMs to trust us right now to bring the advanced technology into the car.

Next Generation Braking Systems Driving Market Growth

So then let's talk a little bit about brakes. And again, this is where we had the smallest market share, in our brake control systems, but if you look at the market as a whole, it's at 3% growth, that's roughly doubling the LVP over this period but more than all of the growth is a next generation or advanced braking systems. These are braking systems that improved fuel economy, reduced manufacturing cost, reduced repair cost, right, are good for electronic vehicles, regenerative braking, electrical vehicles. And this is something that we're starting already here in 2020 and this part of the market, which is more than all of the growth, we have the best technology. So it's a subset of the market, it's not that we're going to be the overall market share leader here any time soon but in this growth part of the market, we're in a very good position.

Successful Customer Base Expansion Across Segments…

And if you look at – and you saw this slide in Jan's but I'm going to take another minute on it. If you look at what we have done, because this is really the hard work of being ready to take advantage of this, is what have we done to make ourselves ready to be able to take the orders, ready to be the trusted partner for mobility with our customers.

So from 2013 until today in active safety, you know, we have five customers with booked orders in 2013 and we have 10 customers today. But even then, we were only in discussion, we were only on the bid list, the first step of taking new orders with only two customers at that time. And since then, we have then ten that we have orders with, we have six where we are technically qualified and an additional three where we are on the bid list in active safety. So overall, almost an increase of two fold from where we were in 2013 and starting to approach the full customer base. When we talk about a full customer base, it's 27 customers here that make, you know, 97% of the vehicles in the world that we deal with. We have one – some of those grouped together for some of the smaller Chinese OEMs but 27 of these and 19 of them we are in active discussions to becoming their trusted partner in active safety. So this is a huge step forward. And in restraints control, one of the things that's very interesting about restraints control, Jan mentioned we had 25% market share, with the customers we've been in for a long time, we have approximately 50% market share. So we really needed to grow our customer base. So that's what we've done over the last few years. We've gone from 17 customers to 20 and as we start to grow those customers' market shares we're going to continue to extend our lead in restraints control market's share and we have four other customers we're actively in discussion with right now to bring on. So this is also a very big growth and a very strong foundation to grow from and we know once we're in customers because of our proven track record, then we grow to a significant market share in those customers. And then as Jan mentioned in brakes too, it's amazing, you know, coming from one plus one in 2013 and now to eight customers on the brake side that we're dealing with and four that are booked.

…Increasingly Diversified Today

So I think we've really made tremendous progress. You can see that in this chart. So it's just another way of looking at it. Again, from 2013 until where we are today. And as Jan mentioned, even very strong continued acceleration in this customer progress since the capital market days in September in Frankfurt, which many of you are at. So this is very

strong progress and this is something I measure with my team every two weeks. What's our focus, what's the strategy customers, what's the next steps we need to have, what are the next boxes we need to be filled and how are we going after those and how are we going to build the road that we can drive down to get the orders that you have seen coming in.

Tremendous Order Intake Increase Over Last Three Years

And speaking of those orders, that's also been a pretty good story because the work has been done by the guys you're going to hear from a little bit later on the technology side to give us the ability to increase our order intake in the last wo years by three and a half times. And then even in the last 12 months compared to the previous 1 months, which obviously includes half of this nice step, we still have a 50% increase in the last 12 months in the number of orders that we have in. And if we look at some of these that are specifically interesting to me, you know, getting our first mono-vision order with a new global OEM, just this first quarter. First major drive monitoring system order with a major global OEM. First level three system, the first one awarded in China comes to Veoneer. And I'll talk about that more in a minute. Right, another large vision order in Asia. First LiDAR order last fall. And then last summer a repeat large radar order from a repeat customer. RCS also, we just got the latest generation, we call it the SC3. Latest generation just sourced this quarter. And then a big point to me on brakes is we got our second major order from one of our new OEMs on brakes showing a trust in the execution there.

Veoneer Outcompetes for L3 Awards

I want to talk a minute about what it takes to compete and when for a level 3 systems. And this is really interesting. The process sis two years to work through the requirements with the customer and it's – I know this is the Geely order that we won in China and I've heard some of you say 'ah but it's a captive customer because they are somehow owners of Volvo or joint venture with Zenuity. I can tell you from the sales process, this is not a captive customer. There's five guys in there, narrowed to three, we fought like hell with those three and what it came down to is being able to demonstrate the capability and the trust, the way of working with the customer different than the other guys that they could believe we could execute this. And was just awarded in first quarter this year and it was so tough a fight that we did not win all the sensors. We're responsible for the whole system and we have a lot of the sensors but we didn't win all of the sensors. So it's a great example of how our customer centric focus is allowing us to win orders.

Summary

So if we look at the overall picture here, it is a very, very exciting market to be in. There's no doubt. And specifically, it's a very exciting time for this company. We have the platform, we have the technology, we have the runway. And as you can see, we have been executing on those orders to capture the growth in this very exciting market.

So with that, we're going to turn it over to Jan and his team to talk about this technology that's enabling us to win in the marketplace. So with that, I welcome up Johan Löfvenholm, our COO.

Operations and Technology

Johan Löfvenholm

Chief Operating Officer, Veoneer

Thank you very much. Very excited to be here in front of you again. Now in the shape of the COO of Veoneer. Without reliable and robust solutions, we tend to not trust technology. When there's no trust in technology, there will be no self-driving cars in the future. Now as a tech company, Veoneer has a very unique position to take on that challenge. We have a heritage from our Autoliv DNA which has taken us through generating innovations, saving lives in both active safety and passage safety for many, many years. We are delivering 2.5 million products, automotive grade units weekly to our customers throughout the world. We do so on time and we do it with a relentless focus on delivering zero defects. This doesn't come for free. It comes from many, many years of blood, sweat and tears, hard work, improving our production capabilities through the Autoliv production system, driving Q5 mentality and the quest towards zero defects through Q5. That is what takes us into the position so we can take on the challenge and driving the trust in the right direction.

One proof point which has already been shown is to the right in this picture, where you see we are below 1% of the involved parties in automotive recalls in safety electronics since 2010. Compare that percentage towards the applicable market share over this time, which somewhere between 20 and 25%.

Our Customers Are Global and So Are We

We have created this foot print to serve our customers in the best way. Through our nine plants, we deliver product and we like to be close to our customers when we engineer our product in our 17 tech centers. We developed the products together in collaboration with our customers and it's an important factor, not only through speed but also through the effectiveness of our development that we do it together and close and local customer.

Another benefit of this footprint is that we flow the talent. As we grow and as we take on all of the new business that Art just explained, we need the very best people and we need to attract them where they are, so we follow the talent in our footprint. That is one of the success factors where we were able to on board – attract and on board around 1,000 engineers last year.

Our Vision

Five years ago, we sat down and we created a pyramid. You've seen this before. We set it out as a vision on what does it take, what are the requirements to build the capabilities, to be the long term strategic partner, full system partner for active safety towards autonomous driving.

Today, we look at this pyramids being a full stack of capabilities. Veoneer can offer all of this either directly or through our partners with joint ventures.

Our Technology Showcase

Looking at our product portfolio, we usually show it this way. You can see our three different product lines here in the shape and form of the restrain control systems with our airbag controllers and our crash sensors. You see our active safety products on the picture here with all the different sensor technologies. You see them with the ADAS controller. Our brake systems are also on the map here. Actuation and control. I like this picture. But I'll show you a picture that I like even more.

Our Safety System Approach

So I'd like to introduce a new way of looking at our three product lines and how our products fit together to deliver even more value when you bring them together in a system approach and what we mean when we talk about the system integration.

So we still see our different product lines here to the right and I'll start showing them really from how we take in signals into the vehicle and how we process the signals and how we actuate from that. What different roles do our products play in that world? So starting from the sensor side, you see that already here we have both components and sensors from the restraint controls systems from our pressure and g-based crash sensors but then of course also all of the different technologies in active safety sensing. Another point of this is also to see that still at this day there is a lot of software embedded in these senor system and we tried to illustrate that with the shading of the puzzle pieces here.

Now this is of course an important part of bringing the information into the system and when we do that in the second step, we call it either decision making or vehicle control and connectivity but what happens is from sensor fusion into decision making and vehicle control, now we have the capabilities to the full Zenuity software story and we'll hear a little bit more of that in a while. But also in this part, you will see that our restraint controllers and brake controllers are also making work in this part of the vehicle. And then finally going to the actuation part, of course one of the most important actuators when we talk about safety is brakes. So this is the natural place for brake systems.

This is the what - by having people understand how to use these pieces of the puzzle, we can deliver value a system integrators. But the how is another important factor here. And the how is really the difference when you build the trust with the driver, with the passenger of the vehicle. How we expose the technology to you. That can be done in many different ways. You can do it in a good way. You can do it in a not so good way. And if you do it in the efficient way, that's when you build the trust in a human machine interface.

Core differentiating Innovations

Now we're coming to an extremely exciting part of this presentation because now I get to spend even more time on technology. So we will take a little bit of a deep dive into three very important areas: the Vision area, the software stack area with Zenuity and the research area, specifically on human system interface. To do that, I have asked for some help.

So with me today, I have Salah Hadi, who is our Director for Vision Systems, I have Erik Coelingh who is from Zenuity, the technology advisor, and I have Ola Boström, who is our Vice President for research and Patents.

So if I can ask Salah to come up on stage and start the first technology presentation. Thank you.

Vision Development

Salah Hadi

Director, Vision Systems

Okay, I'm Salah Hadi. I am Director of Vision Systems as Veoneer. I have met some of you before. I am really, really excited to be here today to present our product roadmaps, our technology in terms of mission technology, what we are doing at the moment and what we are planning to do in the future and I will also take the opportunity to thank everybody that are helping me with developing this. This is a lot of hard work and many people are involved into the development of these systems.

Vision Roadmap

So, our Vision Systems, yes we have been developing Vision Systems since early 2000. We have been doing night vision, we have tried to do DMS, we have also done mono-vision, stereo-vision. But I will start with our second-generation cameras that launched 2016 on the E-class. The system came together with other sensors in the car, was an award-winning system by Auto Motor Sport for being the best active safety in the category safety. The system can do traffic jam assist, ACC, lane keep assist at high speed – that was for the first, by the way – and we can control the high beam, matrix beams, we can detect traffic signs, on-coming traffic, cross traffic. A lot of things that was deployed on the system. And the stereo camera is a key contributor in that system. The stereo camera probably is involved in all functions, at least the forward-looking ones, by itself or through fusion. It was a lot of hard work together with our customer. Here is one example where we close the collaborator to get to this great system here in the market.

We deployed our third-generation camera this year on the new A-class. This camera is a monocular camera, it's a single camera system that has all function content in it. We can do lane detection, traffic sign, high beam, object detection, road boundaries, pedestrians, cyclists, etc, etc. The system's also capable of doing a mono-only AEB. We have demonstrated that to the customer. On this customer it's a view system. Okay. Most of our time at the moment we spend on our fourth-generation cameras and this is to target the NCAP requirements for 2020 at the same time as adding more value for our stereo camera to do more in terms of autonomous driving. Our fourth-generation camera has currently about five OEMs, confirmed SOPs. We went from one or two now to five. And we are really busy making sure that we do the right things now at the moment. In the meaning time also we're starting development on our fifth generation camera system, I will touch base on that later on in my presentation, okay.

From the fourth-generation camera system, I'm going to show you some highlights about our Vision technology. Of course, we are doing conventional classification, we're doing conventional computer algorithms, we are also capable of doing structure for motion, all of these vision components that many people can do. The key is how to utilize them to make sense out of this complete toolkit in order for us to provide a reliable vision system

on the market. For that, we have many cars driving on the road, we have an infrastructure on how tests validate, we run all our software through hardware sitting in our servers to make sure quality and reliability is there and there's a key point here. It's a very easy innovation system to go from 0 to 80% performance. You can get that off the internet today. But to get from 80 to 90% is hard. 90 to 95% is very hard. 95 to almost 100%, that is extremely hard. I don't want to say a bad word here. And that requires focus, right people, right tools and also being able to understand if I have a problem with a use case here that I can fix tomorrow, what will that use do on the rest of my data set? Are you with me? You need to always look at the overall picture, not only on a single, single, single problem.

To take that tech, keep that in mind, I will go through this once more. This is static image just to illustrate that in our stereo camera we have two left track image and currently they are color image. From this left track image we generate a stereo image, a depth image. From the depth image, we can then create something called occupancy grid and the occupancy gird is something that we apply our algorithms from the information we have and categories the image in front of us in terms of size and distance and height. That gives us even more clues where to focus our view in the image to be able to detect relevant objects. So this is – you can see this is a heat map or place taken, extra look map or something like this. The 3D point cloud image here, this is an image that is instinctively generated by the stereo camera and applying our techniques on it. And you can look at these images, it's similar to LiDAR image. It's very rich in information. And using this and this, we can get at the same time detect objects very robustly without applying a lot of classification methods, without applying a lot of deep learning. Deep learning we do then on top of this, so the combination of these two give us a very good and reliable object detection. This is just an overlay of this image, over this image.

And so I'm going to run a movie now. And if I stop it here, there's an object over there and this object is 20 by 20 cm size. It's to illustrate tire rim which is one of the toughest cases at the moment for autonomous driving to be able to identify tire rim on the front of the car. We can see cars, we can see pedestrians, we can see a lot of things at the moment but some of these general objects are very tough and it's commonly – you can see – I saw it the other day, actually, on a Swedish highway, which I was surprised. It was interesting. So you can look at the heat image. Please take an extra look. You can see the tire, very visible, easy for us to detect. You can see it in the 3D point cloud image and now it's overlaid. So by taking this amount of information from the left track image, generate another level which are 3D, generate more clues, more clues, more clues, makes it easier for us to detect even tough objects in the image. And this is where our strength is. We've been doing this for a long time. We have a lot of experts working on this and also doing our best to find even more objects. So I will run the movie once more, you can keep your eyes on this. The color map here, this is the object again. And here is no classification applied, nothing like that at the moment, it's just pure left track image and using the geometry between the two to generate this. And this is not LiDAR, this is stereo camera. And you can see the sign. You can see it easily here. Or the computer will recognize it easily here.

Okay, my next example is applying similar technology. This is, again, no classification applied, it's just pure stereo vision. We can segment the scene. We can general object

detection I would say this. This is – the color is about distance. You can see these objects are detected very well. So even with very tough scenarios like this, our computer vision algorithms in the stereo's case is very good and robust and therefore we can say we can utilize the stereo camera for forward looking for autonomous driving. It's just another camera. The processing power is there. And use our technology to support other sensors to be able to drive the car reliably. Okay.

Roadmap

Finally, I want to end with this slide. Please remember everything, there is a quiz at the end. This is our roadmap. This is what we work on. Okay. I spoke about our second generation, the third-generation camera uses conventional, I would say, computer vision classification techniques. We will deploy deep learning already in our fourth generation. Deep learning in this case will focus mainly on object detection and road boundary, so instead of this here we use to train the classifiers to recognize objects. In this we are training the classifiers to identify pieces of pixels, not objects. And we will then put more context into this to make it an object, okay.

This helps us very much with world boundaries, part of NCAP that have been detected, unmarked lanes. We have done very good job here. Three spaces are needed for autonomous driving and also to when a car comes to stop, you want something that to tell you it's free. You can drive. Traffic lights is a tricky one to be honest but we're working on it. The traffic lights are not so easy because they're not the same everywhere in the world. And for the stereo camera, we will go to our second-generation object section, as I told you before, partly also to detect small objects relevant for highway driving and in the gen five we will deploy deep learning in almost all our algorithms and from that we will do this semantic segmentation of the scene that will be used and also to deploy functions that we develop, that we need to develop or supply object to a third party who want to develop their own sanctions.

With that said, I think we covered most of the topics and now we'll welcome now Eric to the stage to complete the picture, I will say. Welcome, Eric.

System Software

Eric Coelingh

Technology Advisor, Zenuity

A very good afternoon. I am at Zenuity and Zenuity is now exactly one year old. And during the last year, we have been able to build an amazing automotive software company. We're around 500 people around the world and we're building a complete software stack for active safety systems and self-driving cars.

But in all fairness, we didn't start at zero. Our starting point was software, computer vision software, an IP that you can find in top of the line Daimler vehicles, and world leading ADAS features that you find in modern Volvos. And not only the software and IT but also many of the key developers that actually developed those software pieces, they were at the foundation of Zenuity. So we had a great start for a great journey.

And from a product perspective, we think that the journey will look a little bit like this. We will start in 2019 with the first complete stack of software for ADAS, active safety systems where we will take, let's say, everything that you find in this modern vehicle and we will put on new functionality. New functionality, for example, meeting NCAP requirements in 2018 and onwards, new driver support features and also we will use connectivity much more than we've sued before because we think that cars of the future will almost always be connected, either for over the air updates but also for sharing information between cars.

And of course, this platform will – I mean, we will launch in 2019 but then we will continue to update the content and we will grow functionality on that.

But we are also entering the era of self-driving cars. Unsupervised autonomous driving. But knowing exactly what the volumes will be and when it will take off to what extent, this self-driving, is still very difficult to predict. There's a lot of uncertainties in legislation, in customer acceptance. I mean, still a lot of open questions. So exactly predicting these volumes is very difficult but by building a software stack that you can scale from ADAS to AD and back again is something that we believe is very powerful. We are building software for allowing a car to drive itself, but we don't have to wait until that software stack allows you to drive from any A to any B at any point in time. Now, what we do is we build it and, as soon as we have a certain scope for it, we can spin it off as a future. So we believe that in 2020 we have an L3 feature where a car can drive unsupervised in a traffic jam. And then this functionality will grow, this software stack will grow over time and the worry move from only a traffic jam to highway driving, on ramp to off ramp, automated valet parking, later we can extend it into urban areas and further down the roads we will have, maybe you called it robot taxi capability where you can go from almost any A to almost any B. And this is a journey that I think will take many, many years. But by doing it this way, we can build a business and at the same time as we develop our technology.

Scalability to Match OEM Needs

And one of the key things when we designed this is scalability. When you are an OEM and you're building a vehicle platform that needs this kind of technology, you build a vehicle platform that will have probably different vehicles and each vehicle will have a different subset of this functionality. And if you want to cater for such a platform, you have to make sure if this software platform is scalable. And we put a lot of thinking in how do we make this scalable in a good way. And this is to illustrate a little bit how we think about this. We believe that a large portion of the volume, or maybe the entry level of an active safety system will probably be a mono-camera, because that is what NCAP is requiring. A mono-camera fulfilling the AEB requirements, lane departure warnings, etc but probably also some form of connectivity. When we have to use a camera and we capture those pictures and we can probe data from cameras, we can build real time maps. And having these cars out of the road in relatively large volumes will enable us to build real time maps that ADAS features can use but also in the longer term future that self-driving cars can using. So this is a very important principle and we called in Zenuity's connective road view that allows for localization of ADAS features or self-driving cars. And camera therefore is an important part.

So this would be the entry level either with an ADAS ECU or without. That's different for the different OEMs. But then you want to scale that software. You want to scale it to a

premium ADAS package and there you see you can add front-looking radar, corner radars, driver monitoring systems and it will be different for different OEMs but the same software will be extended without us having to redo the computer vision software that's only in the camera. And then I think in many cases we have to be capable of interfacing with hardware sensors from other OEMs. So we at Zenuity, I mean, of course we like working with Veoneer and we use a lot of Veoneer components when we develop our software tech but OEMs will have components from many different suppliers and we need to be capable to be able to interface with them.

So here we would have a typical premium ADAS software package. But then we want to go through traffic jam pilot, L3. And what we do there is we think we have to add a LiDAR and the two plusses indicate we have to have more computational power in both the ECU itself and then the camera – we're moving to a stereo camera here. So without having to redo the other features, we can offer traffic jam pilot. And then furthermore, if we want to go really to a highway pilot where we need 360-degree perception, a lot of computational power, we add even more sensors and we scale up the software stack. And for an OEM, this is really attractive because this is the way to get a software stack that you can cater for your entire vehicle platform. You don't have to redo for every vehicle, for every term level. No, this scales in a much more natural way. And just as a side note, here you see different boxes but of course, an OEM can choose to bake this software all in one box. Our software is scalable and can be, of course, deployed or ported to different uses in this way. But we think scalability is really key for catering for OEM platforms.

Autonomous Driving ia All about Safety

But as said, we are moving into the era of unsupervised autonomous driving. And I think that autonomous driving is all about safety. When you leave driving to the car, I think that this car needs to be significantly safer than the average human driver. And I think that is something that you're not maybe always directly feel when you are demonstrating. A lot of people are capable of demonstrating a self-driving car. And I think it is relatively easy to build a demonstrator and get the feeling 'wow, it works. I mean, this car is driving itself throughout intersections and traffic lights' and etc. But it's not building the demonstration as challenge, it is building a product that is safe that is really challenging.

And I think it has to be significantly safer than the average human driver. I mean, think about that. I mean, in the US, it's almost 40,000 people a year get killed in traffic. It's terrible numbers. It's really high amount of people that get killed in traffic. But then you can say, okay, but average human driver is maybe not so good. Well despite that, the average human driving is driving 148 million kilometres in between fatalities. So in that sense, the fatality frequency is, despite everything, relatively low. If you want to beat a number, you have to be really, really good. So safety is at the core. If you are not very, very safe, much safer than the average human driver, I don't think you have a good product for a self-driving car. And we have Autoliv/Veoneer/Volvo cars as our parents.

So safety is really in our genes. When we design our software stack, safety is at the core of what we do. And very simply said, what we do is we define safety goals. We try to describe as good as we can what the safety goal is and we try to quantify it. So what are acceptable numbers of colliding with the care in front of you or leaving the road or driving into the ditch? We have – we quantify that, we define safety goals and then we break

them down. We have the knowledge from the computer vision sensors all the way to the decision making and vehicle control and we use this knowledge to break down these requirements and say, okay, sensor has to fulfil this, decision making has to fulfil that, vehicle control has to fulfil that. All the way maybe to even the button in which you active tour auto pilot because also there you can make mistakes. And we design software for all these components or requirements that we've put in other parts of the car. And by doing that, we get a very good grip on what actually safety is. And at the same time as that, we are a modern software company. We believe strongly in agility and modern software techniques.

So for us, finding the optimal balance between developing software in an agile way and developing robust and safe solution is at the core of Zenuity. And that is the way we work and that's the way we're organized and I strongly believe that is the key to success.

Deep learning

So safety is very important but within all these constraints, of course we're working with high tech and a lot of state of the art methods to make sure that the car can drive itself. And one of the key things that we work with is, of course, deep learning. We apply deep learning as we will be shown here on computer vision but we also apply it on LiDAR, we apply it on sensor fusion, we also do research in using deep learning techniques or decision making. But here in kind of an illustration of what happens when you not only have a forward-looking camera but when you have surround looking cameras. Having multiple cameras in a car, deep learning techniques executed on a very powerful computer, it will allow us to have a very good understanding of what's happening around us in traffic. And this is important because in this case we're just driving in one lane but when you want to do lane changes or you have to do an emergency stop on the shoulder, you really have to understand what's happening around you. Where am I and where am I heading?

But in all this, safety is key. Because when you see an object here, you have to be really sure that you see the object. And if you are uncertain, we still want the algorithms to report the object because in case of uncertainty for a self-driving car, you will have to slow down because accidents are not accepted.

Building Complete Customer Features

But then it's about perception, it's also about decision making. And also again in decision making, you have to plan your path and you do not have to over-estimate your capabilities when you're driving. So we developed perception software, decision making software, vehicle control software and in the end we will – we are building this into a complete package, into a demonstrating vehicle. And here's one example – this is fast forward, no one would really drive this fast – of one of our cars driving on one of the roads around Gutenberg and you can see the car is changing lanes automatically. It's planning its route. It's doing everything autonomously. This is our development for unsupervised automation. But as always, there's a safety direr there paying attention, having your hands to the steering wheel. That's the way you test. As you can see, this is not our best test driver but he's doing okay.

So key to this is combined speed and agility but at the same time, be aware of safety, be aware of the robustness requirements. We are finding the right balance between the two and I think that's the key to success.

Conclusions

For you to remember, at Zenuity we can deliver a complete software stack from sensing to actuation. We have the knowledge from perception to vehicle control. Our starting point was world-leading ADAS technology and we were continuously enhancing this with state of the art methods including deep learning, AI reinforcement learning, etc. And scalability is making this really attractive to the OEMs because we can offer everything from cost efficient solutions for a standard solution all the way to a self-driving car technology. Thank you.

Human Systems

Ola Boström

Vice President Research and Patents, Veoneer

So, good afternoon. Now, let's talk about some long-term research. So I'm Vice President of Research and Patents and I will talk today about a huge challenge and how we believe is the best way to tackle it and on top of that I will give you two examples that can be helpful.

2018

So I will start with some numbers. Today, we have 3 billion people out there that can afford, that does actually have access to vehicles. The sad consequence of this mobility that, by the way, is sort of one of the reasons why, why they do have what, what they can't afford. The sad consequence of that is 1.4 million traffic deaths annually. Half of those 1.4 million is outside the car. On a different scale, very sad, so far I hope it not will be more, there's one traffic fatality this year thanks to a self-driving car. That is sort of the basic fact. Let's start there. Let's go now two decades in front of us, 2040. What is happening with these 3 billion people who can afford, that have access to vehicles? It will double. This is a clear global trend, people getting better and better, and the consumer base will basically double. So what will the impact be on traffic fatalities?

As we heard today, there is no way that we can increase this number of 1.4. Actually, that must be taken down. We can see that. That's a sort of unparalleled global trend of safety, of mandate, of regulations, of policies et cetera, et cetera. So, this number just must go down. And I, I will talk about that, how, how we think that is possible. And, the number of robots killing people on public roads must go away. That's for sure. So, how is this possible? How do we sort of double the, the, the number of end-consumer vehicles at the same time slashing the number of fatalities? How do we do that? I think it's easier now in this world of automotive industry to get lost here and focus too much on robotics and forget the humans behind. The technology on the first hand should be of benefit for the humans, so we have to understand that part as well. So, for research side, we focus on both robotics and human factors.

2040

So, we believe, Veoneer believes that the key here to, to make this possible, to, to double the consumer base and, and, and take away the sad consequence of mobility is to take a human-centric approach, where the human and the machine has a joint cognitive system. If I am a vehicle and look out to the left, the car looks to the right and knows I'm looking to the left. Shared control. If, if the car realizes there is a truck coming and knows that I can't see it, the car can slam the brake. If I, as the driver, see something which the car, for some reason, doesn't understand, I can slam the brake. That's the shared control. To enable this, the, the car and the humans, the vehicle and the humans, must trust each other. That's, that is the key, and that trust goes two ways, and I'm not referring to undertrust, where basically you switch off your lane departure warning, or you don't pay the extra package of safety, but it's, it's there.

LIV – Learning Intelligent Vehicle

You trust the car. You don't switch it off. I'm not referring to overtrust, and we see this a lot in the media. Even with even driver's climbing into the back seat while, while driving, right? That's happening right now. That's overtrusting. No, I'm referring to a true trust. So, this sort of approach and this sort of what I'm saying that. This is not second-guessing. This is based on, on, on facts. This is the sort of the hard, blood, sweat, and tears in, in terms of research. We, we base it on, on crash statistics from all over the world. We base it on field tests. I give you one example.

We run a fleet of cars together with MIT, Supercrews, as Art mentioned, is, is one of our favourites. Teslas, Volvos, Jaguars. By now, we have 400,000 miles driven. We have 10,000 of transitions from the driver to the vehicle that, that we can understand. I mean, we have all these sort of measurements on the drivers and the car meanwhile. We also have a research platform. We not only got sort of a, from Autoliv, a pile of cash and a CEO, we also got Autoliv car, the learning, intelligent vehicle. We launched it 2 years ago at CS. This is an upgraded version. We don't only use this platform as a research platform. It's also a fade fast workshop where we can try out different technologies and see if they fly.

AI – Cognitive Load

I will give you two examples. One from the university, where we work together with the university, and one where we work together with a Zenuity. We work with university and Zenuity in Europe, in Asia, in US. So, what I'm going to show you now is just examples. So I start with this. This is with MIT. What you see is a, a, the cognitive load of the driver while driving. So, let me explain why we want to have the load and, and how we can measure this.

Basically, we have put the camera in the face of people that are either verbalizing or not verbalizing. What do I mean with that? If I'm engaged in a dialogue, I can see if the other person is thinking of what to say. I don't know actually how that works, but I have sort of a, that's, that's the way we people communicate, or most of us people communicate. We put the camera in face of the, of the people. We tell the computer this is a person verbalizing, thinking of what to say. This is a person which is not engaged in this, in this dialogue. And, guess what? With AI, we have an algorithm, and this is, is, is sort of the

outcome. So, why do we need this cognitive load? We need it because we don't believe that, in the long run, we can have the stupid assistant systems where you ask the, the car or to the, your, your Alexa something, which you have the same question every day, right? So, instead, we have this dialogue, and, and the reason why we need the dialogue is to create the trust.

AI – Emotions

So, I'll go to the next example, which is where we work with a, a start-up. In this case, same thing. We have a camera in front of people. Theyare either scared to death, or, because of a scary ADAS assistant, for example, or they are relaxed, or, or even happy, and the reason why we need this emotions measured is because, again, to create trust, to have dialogue, to understand if the ADAS does work, or, or, or ADAS is sort of, is good enough and so forth. I give you this example also because this something we, we, this technology is not coming from automotive. It comes from optimizing commercials. This was used to sort of make, in this case Coca-Cola advertisement, make people smile, right? It's very effective to use this technology in front of sort of people and, and realize if they smile or not, and then you find the right commercial. We take this technology and we adopt it for, for automotive context.

2040 Conclusions

So, to conclude here, we have an exciting journey ahead of us. I have been part of Autoliv for 23-odd years, and, and this is the most exciting time of my, my working life. This sort of huge challenge that I was talking about, double as much end consumers, extremely outrageous expectations of safety. We believe how to do this. We have a scientific bet that we must take a human-centric approach and use the technology we saw from, from Eric and, and, and Salah, and, and Ort, John was talking about and Ula.

So, I will make an attempt here to, to make a short summary of what you have seen over the last 40 minutes. We have a statement here, and we like to speak with data, so I really hope that what we've been able to share with you here the last four sections gave you a lot of expectations of safety. We believe how to do this. We had a scientific bet that we must take a human-centric approach and use the technology we saw from, from Eric and, and, and Salah, and Ort and John was talking about and Ula. So, it's all about trust. That's my concluding words, and I give the word to, to Johan.

Operations and Technology Summary

So, I will make an attempt here to make a short summary of what you have seen over the last 40 minutes. We have a statement here, and we like to speak with data, so I really hope that what we've been able to share with you here the last 4 sections gave you a lot of that, also creating some trust in this room. We have a proven quality track record producing automotive-grade products. We have a proven vision technology, and we're on track for highly autonomous driving. We have a complete and scalable software solution from perception to vehicle control, and by creating trust, we can make a future journey not only safe and sound but an enjoyable user experience. Thank you.

Now we will ask Thomas to come up here and lead a short Q&A section.

Q&A

Thomas Jönsson: Thank you, Johan. So, we thought that, given that we have a actually a unique competence in the room, we have a long Q&A at the end, of course, but we thought we spend 10-15 minutes with this group and give you the opportunity to ask questions on this technology what we've just heard, because, and I would really urge you to take the opportunity. It's actually kind of unique to have you in the same room. I've never seen it before. So, if you have questions, please go ahead and ask the first one. Yeah, a lot of quick drawers here, but Hampus was fast, as always.

Hampus Engellau (Handelsbanken): Hampus Engellau speaking. I have a question on Veoneer and Zenuity of course. If you do, if Veoneer is developing the Zenuity identification software, and we are going to start merging these software into the Zenuity and place them on the ADAS, at some point, you will take all raw data into the ECU and use a computer processing unit, and we will use decision-making software. At some point, wouldn't it make sense to put Zenuity and Veoneer into one company?

Thomas Jönsson: ...to start with, at least.

Johan Löfvenholm: Yes, I think I can start with the question, and then I will hand over to Eric, actually, so he can prepare himself for the technical part of it. We are not discussing how we share companies today. We have avery fruitful 50:50 joint venture together with Volvo, which is building on a very, very strong design principle, really, that we started out with, which is really that we have two companies, Veoneer and Volvo, depending on Zenuity, and that is a very strong way of managing that going forward.

Thomas Jönsson: So maybe Eric Coelingh can…

Eric Coelingh: Well, the way we work today is that the computer vision that is part of the camera, that is very much developed by Salah and his team, and we use the output interface from that, and then that interface, I mean, it's developing over time. Traditionally, it was Opix and now it will maybe be leaving more raw data, but I do agree that, over time, there is a trend to more centralized compute, but exactly when and how that will fall in place, we do not know, but, of course, that's why we are cooperating to understand when in time is the right place where you will fuse everything into one box, and that will happen, but that doesn't mean't that the other part will immediately disappear. The two systems, I think, will live over time because the car platforms will be so very different or so, so very, well, they have low-end vehicles and high-end vehicles, and, thereby, you will need both for quite some while.

Hampus Engellau: I actually have one more question for Salah. I noticed that you were showing that there will be 4 to 8 megapixel cameras. And my question is, what is the usability on the database that you have recorded with a 1.4 megapixel camera when you start merging into 4 and 8 megapixels?

Salah Hadi: Yeah, okay. You can look at feasibility in different ways. One is that what you trained algorithm to do, now we have shifting actually from 1.250 degrees to 1.700 degrees, and the amount of training to get to agood level is much shorter. So, the experience from going from generation 2 to generation 4, and I think the same will happen also to generation 5. The other thing that is not only field of view related is use case.

Experience that we have accumulated over time for which events are use cases are difficult. This we will take into account very quickly, and this is, I will say, accumulated know-how we have acquired over 10-12 years. So, there will be a lot of reusability, and, I think, many major advisabilities about our know-how. Yeah?

Hampus Engellau: Thank you.

Matheus (Pension Trust): Salah, you mentioned a situation where you're trying to, to get the machine to read environmental signals that are actually a machine trying to tell humans something, the traffic light. Howmuch will the environment develop to talk to the machine in a machine-readable way? And how will that help you?

Salah Hadi: That, this one thing, it's also with traffic signs and lanes and also traffic lights. Cars are cars, but even though they are small cars in Japan and big cars in the US, so, the, the key for our computer vision algorithms is, first of all, understand it is a sign and be able to translate what it means. So, there's the two steps we're trying to work on. Detecting it is one thing, but then translating is another thing. Of course, having the, the infrastructure talk to our sensors is much better, but I cannot speak about by when and how this will take place.

Matheus: Yeah, well, I'm basically talking about replacing that technology that you're using now, basically sending that information, perhaps, to be transferred. The sign, all of that.

Salah Hadi: I think, I'm, I, actually I don't understand. Is it that it's the infrastructure to..

Matheus: I'm trying to [inaudible] you now.

Salah Hadi: It's okay. Whatever makes the systems trustful and safe, it's good. But, I don't understand the question. Sorry.

Matheus: No, no. The, the question is, could the, the information be conveyed in another way to, to the car?

Salah Hadi: Sure, sure.

Matheus: And is that happening?

Eric Coelingh: If I, if I may?

Salah Hadi: Yeah.

Eric Coelingh: I think it being happening through a map, right? Traffic signs, lanes, model lanes, curvature, you can read from a map as well, but, if you want to have a car that you can really trust and we can build safety upon, I'd rather trust what you actually see with our own sensors and our own system than rely on communication or rely on a map, because it's very difficult to guarantee that communication is always available, it's always correct, and the same thing with a map. How, how can you make sure that it's always correct? So, it's useful, but I don't think it's good enough. You still need to have the sensors in the car because that are the parts that you can really rely upon.

Matheus: Have you built in redundancy?

Salah Hadi: Yeah, and we use this today. For instance, traffic signs, we read the map first, then we try to fuse it with our camera signal, and then, to have the example, for instance, when you have a sign that's 70 KPH on the, on an off ramp, when you have a sign that's 110, which sign do you fuse with your own sign, because that also has to do with lane assignments. So, this information is good for redundancy for sure.

Erik Golrang (SEB): Thank you. I had a sensor question, and onthe use of thermal imaging. I guess most of the focus is, and also what you've shown today, has, has been on, on light or radar and vision and not so much on thermal imaging where I guess you're, night vision system is quite good? But then I saw somewhere that the Uber accident, they, they used the data and put some, some thermal sensing over it, and they could've seen the pedestrian at like five seconds or something, before the accident happened, which, I guess, is a eons of time, more or less. Do, do you see any tendencies that, that there's more focus on also thermal sensing?

Thomas Jönsson: I guess Ola or Salah or both.

Salah Hadi: I'll go then. We have, we are now developing our fourth generation. They gave me a very short time to do vision. I can do it in hours. So, we, let me focus on the vision stuff. We are actually deploying our fourth-generation camera systems, thermal imagers with an OEM new to us. We believe that we have the technology, and it can be used to make the safety cars. We are in now in the phase together also with Zenuity installing these cameras at cars to look at what use cases these cameras are relevant, and when we narrow this down, we will, we have the technology. We can just use it.

Erik Golrang: And as follow-up, is on the cost side, as they've been pretty pricy so far. Are you able to bring down the cost of those type of sensors in the same way as we see on other, other type of sensors?

Salah Hadi: Yes. It's the same with everything else. The more we can buy, or the more we can use of it, the less, the cheaper the sensors will become, and we have good price breakpoints and on, on this topic. The first camera was very expensive as well, the mono camera and stereo camera. Now they're coming down in price.

Thomas Jönsson: I guess it's worth saying, then, that the starting point, of course, is a much higher price point.

Salah Hadi: Sure.

Thomas Jönsson: So, the path is the same, but the starting point is much higher, of course, and worth pointing out that in this night vision market, we are also, it's a small market today, but we are a market leader.

Erik Golrang: Yeah.

Thomas Jönsson: Okay? Can we move on?

Analyst: Hello. Thanks, thanks for the great presentation. Just a quick question on, on the software side, I guess. Cruise automation at the GM business is, I think they've suggested that they're going to try and start running a taxi-type service in San Francisco

from early next year. Who knows if that happens or not. Just wondering about self-driving software itself or autonomy. I don't know how you'd classify that. If it, if it's the traffic, the traffic system. I think that they were talking about speed restrictions there, 60 km or less. Are you involved in something similar in any way anywhere in the world? Do you have any fears that to the extent that a system like that was to start in, say, San Francisco and morph to different cities, that, that they would accumulate a lot of miles and that there might be – I don't know, the first mover advantage, and one system will dominate, given its demonstrated already reliability and safety? Is, is there anything to that, or am I just very misguided?

Thomas Jönsson: Eric, please.

Eric Coelingh: Our focus is on automation of privately owned vehicles, vehicles that sometimes can be driven manually or sometimes are driven autonomously. That is our, as I tried to explain, our strategy because then we can spin off AD software to ADAS features, depending on how the market evolves. Currently, we're not involved in Robo-Taxi development, because if you do a Robo-Taxi, then you have nothing, nothing until you solve the really different, difficult problems. So, our strategy is a little bit different there. Over time, we will get there, but I'm not so concerned that there's one that will take it all, because I actually think that if you have an ADAS slit, connected ADAS slit with ADAR sensors that can collect data, then you have a much better foundation to collect data about traffic and thereby, on that fleet, you can then build smaller portion of self-driving car technology. So, I think we are approaching it in a different way than the Robo-Taxi companies do.

Thomas Jönsson: Okay, thank you. We'll take the final two questions.

Olof Johansson: Hi. Just a question on human behaviour. When you drive a car, you would be very careful about running into something. Will your car be extremely slow getting from point A to B because you have to yield for everyone else, or how do you kind of cope with those issues?

Eric Coelingh: Ola? Feel free to speak.

Ola Boström: I love that question. So, if you just do it like a single entity here, a car behaving like this in the context of everyone's cars not doing it, it would be very strange. You need a certain amount of cars, and it's not, it's not anywhere like 50% or maybe it's even may not be 5 or 10% that would sort of lead the way. These cars will, will sort of, yes, they will go slower sometimes, but I think, in terms of the traffics congestion problem we have in, in all major cities around the world, what will be sort of come out of this is, is you will see that you will be going faster, even if it goes slower, you will go faster from A to B. So, you need a certain penetration and you need sort of the leadership of these type of vehicles.

Thomas Jönsson: Okay, final question.

Erik Karlsson (Industrial Equity Partners): Thank you. Generally, when you develop together with customers, are they keen to take a full package and do everything with one supplier, or are they more thinking to take different bits from different suppliers?

Thomas Jönsson: Maybe you want a question.

Jan Carlson: Yeah, I think we, we see a full spectrum of that. We sometimes relate it to the a la carte menu or the full system, and it, of course, depends not only on the OEM capability but also the strategy of the OEM and where they want to put their focus, so, and that is coming back to why we are very – It's very important for us to be able to have the full system partner and the full pyramid available because then we can cater to all of those OEMs. So, it's a mix.

Erik Karlsson: An clear trend which is winning in terms of strategy among the OEMs?

Jan Carlson: No, I think the, the strategy is not changing, but the technologies and the choices between, that is rapidly changing, but I think the main part, where you have certain OEMs who choose features to really be the unique selling points for the vehicle, they will clearly keep onto that own development, but if you go to a more mass market, and a quick follower, then you have a different. So, the subject of what you are keeping inside might change, but I think the general strategy that you will have is mixed, I believe, will continue.

Erik Karlsson: Thank you.

Thomas Jönsson: Thank you. Thank you. Very good questions, and thank you to the panel. We will now move into a 15-minute break. We're about 5 minutes late from the original program, so we will meet back at 2:30. Thank you very much.

Final Session

Thomas Jönsson

Vice President Corporate Communications, Autoliv

Introduction

And I would like to welcome you all back to the room and welcome those viewing on the webcast, which I understand is at least more than 100 people as well, back. We're now in for the final session for the day. We'll start by talking about value creation by our Chief Financial Officer Mathias Hermansson. And then we will end with a panel with the main speakers where you have opportunities to ask questions for about 30 minutes before concluding remarks by our CEO, Jan Carlson. But with that, I leave the state go Mathias. Mathias, please.

Value Creation

Mathias Hermansson

Chief Financial Officer, Veoneer

All right. Thanks everyone for being patient and staying the whole day. I hope you find the day as exciting as I've done. My name is Mathias, and I think I know most of you

actually from my previous life. I used to hang out with not so smart people. And everyone keeps saying that they're very excited today, and I think that's an understatement from my perspective. I'm truly honored actually to be part of a company like this with so many brilliant people. So, it is exciting for real for me. I think just before I start actually the actual presentation, I think just to highlight a little bit for you that there will be a lot of trading back and forth in something called one-issued shares and the ordinary shares in the US. So, for those of you who don't know anything about it, just go to the Autoliv webpage and you can read a little bit more of that, because there will be a little bit of trading already from middle of June in the US. So, just so you're aware of that.

Drivers for Long-Term Value Creation

So, I think you've heard a lot about this fantastic market opportunity, and that's, you know, part of the reason why I found this story so exciting and compelling to me was looking at this great market opportunity. More than 25% compounded average growth rate in active safety over the coming years. It's probably almost unheard of in a scale industry like this. What I will try to do here in this presentation, I will try to give you – guide you through a little bit how everything you heard today, how that actually translates into the targets we set out for ourselves, the 2020 and the 2022 particularly, and going through that in terms of order intake versus revenues and how that translates, also talking a little bit about the other target we have going from actually heavy investments this year and how that translates into profits 0-5% profit in the first instance done in 2020 and how that path is going to happen. And then finally, I think we have, of, as Ola said, not only got SCO and the LIV car. We've also got some money on the way. And I will try also to explain a little bit the thinking around that and what we will use that liquidity for. And hopefully, you will find also that after this day you feel as comfortable as we are that we are on track to deliver these targets that we have set for ourselves.

Well-Balanced Footprint and Growing Benefits from Asia

One of our strengths, except for all the things that you heard today of course, is our exposure to growth markets. As you can see here, in 2017 around 36% of our revenues came from the Asian market, and half of that, 18%, came from the Chinese market. This is something that separates us probably a lot from some of our peers or what you may think of as peers. You know, the Chinese LVP, the production growth in China over the last few years is going to outpace the overall market two times factor. So obviously, this is something that is exciting for us as well that we are in that structural position that very few others are. And at the same time, we can also see this regulatory tailwind that sweeps through industry right now is also coming quickly towards China. So, China is a very important market and Asia is a very important region for us well. That's why I was very happy that, you know, the wins that we have, we are in a very strong position in wins with the daily order, for example, is a testament to our strong position there.

Active Safety with Increasingly Balanced Customer Base

The other strong key structural growth driver is the active safety. So, combining the geographical exposure and the active safety puts us in a sweet spot, I think, that no other company in this industry has. So, that's something good to bear with you when we look at the overall long-term growth. If you slice this a little bit differently in terms of sales,

some people – we get the question quite often that you're a one-company active safety, one-customer active safety company. And if you look at 2017, you know, there's some justification for that question, obviously. But if you look at everything, the hard work and everything that the sales team and the product team have done over the years, if you look, our expectations when we draw this line out to 2022, the largest customer we expect will only account for 20%. And that also means that all these other customers which remain in view, they also like our products, high quality and at a competitive price point. So, I think this is also just a proof point as you had mentioned that what we have been doing ever since 2015 has really been paying off, and we see that continuing into the future.

How Order Intake Translates into Revenue

One of the things that is different, I mean, particularly for me coming from the media industry where, you know, there's 2 weeks left in the quarter you can still actually sell more. This industry is slightly different. Art, he doesn't believe me when I say that we can discount a little bit more of your unsold inventory. And then you can make a difference. You know, if you're not a full-on automotive expert probably, you think a little bit about what happens in order intake and how long does it take before you get revenues, and profits, and so on. And I'll just try to explain a little bit to you, and I'll lead you through this slide, obviously. And there are two points I'll try to make here. One is the financials, as I said, from the order intake all the way to when we actually stop getting revenues and profits from that order. And the other point is, I think you heard a little bit today as well, when we define order value it's something different than maybe some of our peers in the market claim as order value. So, if we take the first point, if we sell and get order value that we claim is order value of $1 billion USD, it normally takes around 2 to 4 years. And depending on that timeframe, which, you know, depending on maybe the type of product, but mainly also depending on which customer it is that we deal with, it takes between 2 and 4 years before we actually start production, start of production and when we start getting revenues. What is interesting to really understand is it's in this period here, those years, where we incur quite a lot of engineering costs. So, that's the application work we're doing together with our customers, developing further the products, making them robust, and everything that you heard today. So, we're making investments in that customer, in that sale, up front, over the P&M. That's important to remember.

But then, probably, you know, year, 3 years on average, we start getting revenues coming in from that order. And as you can see here, obviously it's not, you know, 100% up front first year. It's a ramp up of that order and then slowly fading out in the outer years. And normally, we get revenues, you know, between 4 and 6 years, you know, in this period. Some products short and some longer obviously. And if you take, I guess, the – If you take this into consideration and see how the order intake has been over the last few years, you can see that we are in a heavy engineering investment period right on the back of the last 2 years, steep increase in order values. The other point, just to be clear as well, is that, you know, the $1 billion, $1.1 billion in this case, order value we took in over the last 12 months, that is actually lifetime order value of five times that roughly or on average five times. So, lifetime is different than the order values you see us reporting. That also means actually when you look at the accumulated order book we have, the total order book that is not yet, you know, delivered or invoiced, we are actually above $11 billion

USD right now that we have in front of us to deliver and to invoice, I guess, as well. That's a good thing to remember.

Tracking Towards our Revenue Targets

So, when we summarize this a little bit and see where are we then and how do we actually move this forward? You recognize the picture a little bit from before. But the 1.1 LTM order intake translates into $5.5 billion revenues only for the last 12 months of orders. And the equivalent number for the active safety piece is $2.5 billion. And this then needs to be translated obviously into the 2020 and 2022 revenue targets. And we're happy to say as well, of course if you look in the total revenue side, that we are nearly booked for the 2020 overall revenue target. We are close to 70% there when it comes to the 2022 target. So, we feel very comfortable with the overall targets here. What they're really excited about and really happy about is that we're already fully booked, well we're not fully booked, we're booked for the 2020 active safety revenue target. And that's really something that we're really proud of. And obviously the bar is we continue to aim higher, and you saw that in the long-term ambition that we slightly changed as well. And for 2022, we're also close to 70% of that revenue target booked already. So, clearly, this is something that we feel comfortable with.

Significant Investment Towards Future Growth

So, this is the revenue side. Of course, there are interlinked revenues and costs in particular, as I said engineering costs. So, I will just tell you a little bit more how much money we are actually investing on them. So, we're investing both, as you heard, in products and also in software development. You know, over the last 2 years, we have, you know, slightly a little different than you heard today, we employed more than 1,000 software engineers in Veoneer, and then you add around 500 in Zenuity over the last year as well. Then we're up to 1,500 software engineers. So, you can clearly see where our focus goes in the future. Last year, over 20% of revenues were invested in combined RD&E and CapEx. And for those of you, just to explain, R in RD&E is basically research, you know, long-term research represented by Ola; D development, product development, represented by Salah; and then, of course, the engineering, which is what I said the application and implementation of the products. And I think this is obviously, this is deliberate thing, this is part of the plan, and we'll come back to it a little bit later. It's also, you know, what we're using the capitalization for, of course, because this is a fairly cash-intense up-front business that you have when you scale a business. So, if I drill down a little bit more just into the RD&E bucket, just so you see a little bit more granularly where we actually spend that money. So, we can say that we spent a little bit less than half in research and development, as opposed to this engineering part. And that's going right into the core of our future generation of products, taking us from, you know, generation as you heard today to, you know, future generations of sensors and software around that. A little bit more than half then becomes the engineering piece. And obviously this is not only a cost for us, but is also a competitive advantage, we think, that we actually work together with our customers to actually develop the products much better. So, we actually get benefit from that engineering work that we can bring back also to the product development on our future product. So, overall obviously, the aim is to be able to scale

with fewer man hours going into the product development, you know, scale that to be able to sell to more and more customers over time.

So, if you look a little bit different on the RD&E, slicing it different again, around half of that RD&E spend is actually going into the products of vision – Salah has got a big budget – and radar, which are the core active safety products right now that we have. And if you take active safety as a whole, I think we have roughly two-thirds of the whole RD&E bucket is going into active safety. So, clearly, you know, we have a lot of focus in that area. And this is coming from a structural perspective where how we look upon that. If you look then into, you know, a little bit more this year. Just to remind you, that we already earlier this year updated and indicated that we will spend another roughly $70 million in RD&E this year compared to last year. That's good to remember. And the priorities are exactly in the same fields and areas that I just mentioned. It's also worth remembering now when we have our friends from Zenuity here as well that, you know, the Zenuity RD&E spend, or actually it's really only development spend right now, is not part of our consolidated number. That's accounted for us in equity participation, just so you bear that in mind.

If you look then at CapEx, and I mean the reason why we have both, add them together and call them investment is really that we think about them largely in the same way from a strategic perspective. You know, it's the priority of where we put the CapEx money, or capital allocation, if you want to use that word. But obviously, just to be crystal clear as well, we don't capitalize any of our RD&E spend. This is purely flowing through the P&L, whereas the CapEx obviously goes into the balance sheet. But, if we look at the CapEx, I think one thing that will be a little bit new right now, we have been running at around 5% CapEx to sales in '17. This number will go up in '18 to high-single-digit, just to be clear, and so you remember that as well. And, you know, the main part of that increase right now goes into actually increasing the capacity to fulfil all these orders that we're taking in. We see a steep increase in order service and deliveries, and the main part of that obviously is it goes into that. But we also, you know, if you look at all the tech centers we have with the engineering and the software development centers, we're also consolidating them a little bit around the world. So, for example, building completely new office in Detroit, in the Detroit area, Southfield. And we're also, you know, building new buildings and relocating in, for example, in Germany in Munich, around the Munich area. The third part which is also driving quite significant CapEx is we're building a completely new factory to cater for this new big brake system order we won and we announced towards the end of last year. This is the new generation brake systems that we discussed. And we're actually building a completely new factory for that in Ohio. If you look a little bit further down the road when it comes to CapEx, then we see no reason really for that CapEx level to be sustained that high. So, you should assume that will come down to more mid-single-digit normalized to its working levels, particularly then obviously when the ramp up, the revenues are coming in, just to be clear on that. So, overall, I think what, you know, the point we're trying to make here is that the investments that we're both doing in RD&E and also in CapEx is really, really targeted to the areas where we think we're going to get the most bank for the buck in the future, mainly in the areas I just mentioned around active safety.

Multiple Levers Providing Clear Path to Sustained Profitability

So, having said that, I think this is all obviously part of the plan and the target settings. How do we then get from 2018, a very heavy investment year, into the profitability target in 2020? And just to give you the, you know, a little bit simplified overview around it. I think, you know, we will see material growth in absolute gross profit throughout this period. Particularly, if you look at the historical order intake, the growth will be particularly dominating in 2020. And, you know, we don't really give any indications, or forecast, or guidance around gross profit margins in itself. But it's probably not difficult to see that the principals of high operating leverage and increase volumes obviously applies here in active safety and Veoneer area, as well as you're so familiar with from other industries. So, and obviously, if you take a little longer horizon, you know, the software sales, the high-margin software sales that Jan talked about a little bit earlier, obviously that will have an impact on gross margins. But that will not probably be in the 2020 timeframe, rather quite a few years down the road. But that's really what we are excited about as well when you extend this line. But for 2020, this is what you probably should expect.

I mentioned the increase in RD&E this year. I think moving forward, you shouldn't expect the RD&E to go up much more, rather the other way around. I think they usually come down in percentage of revenues. And even if we don't really see, you know, gross RD&E cost come down materially in absolute terms, which I think probably not happen, it should not really grow anymore materially either in terms of absolute across up until 2020. And if you add on also that we have more and more engineering income, the OEMs actually help us fund our engineering work to a large extent, then obviously we get a good benefit from that in the overall, you know, net RD&E in percentage of revenues.

On SG&A, not to spend too much time on that, I think we will incur a little bit extra cost for being a public company than what you've seen before. So, that will take up the SG&A in percentage of revenues a little bit in 2018. There's no reason for you to believe that that should increase further in absolute terms really from that level onwards. And rather hopefully, we can squeeze some efficiency out of this over the course of the next few years. So, I think, if you net out all of this what I just told you about, then we are on track as well, if you believe in it, and obviously we do. We are tracked to deliver between 0-5% operating margin in 2020. And that's just a first starting point. I think, and this is also, I mean, this is really at the core of what we are going to use the capitalization, the stocking net cash for.

Solid Capital Structure to Maximize Potential

And if I go in a little bit more to the thinking behind $1 billion, which in Sweden $1 billion doesn't sound that high, but when you translate into Swedish kroners and look at how many companies that actually have a market capital of more than $1 billion, you get quite humble when you see that big amount of money. But it's really not that complicated. It's basically RD&E and engineers, it's the CapEx I just talked about, and it's Zenuity. Those are the really big buckets of money we're actually investing into. So, the $1 billion, the main – the vast majority of that $1 billion is in the organic investments that we wanted to have in our operating plan that we have right now. On top of that, obviously, this not the entire one. So, we have a buffer for, you know, some uncertainty. You never know what's going to happen. We believe that fundamentally it's very important for us to have a solid

foundation to stand on once we become our own company, because we believe that, you know, the execution will be so important here over the next coming years, so everything else that we can take out that can derail that is obviously good, so I think. But there are also some potential here as well for inorganic growth. This is not including any of our targets or any of our plans.

M&A and Collaborations to Accelerate Organic Plan

And just to give you a little bit of highlights around how we think around M&A, you know, you remember Autoliv itself, and I haven't been around for that long. I think 4 months or something. There's quite a few people that have been around for quite a few more years. They're the whole foundation of the success of Autoliv, at least when I look on it, and it's relentless execution, and it's M&A. That's what really built Autoliv to be a successful company. I don't think you see Veoneer as being materially different than that over time. I mean, you heard that throughout the day. And I think what we haven't discussed much is the M&A piece of it. I think what you can see here that, you know, even the electronics part, or Veoneer now, has been active in the M&A space over the last few years. If you just look at the last year, 2017, it's kind of represented here with all these dotted lines. And you can see also that we have carefully considered whether we do M&A or whether we do collaborations. And I think that's important for you to remember as well that this is not just buy everything you can and hope for the best. This is a careful evaluation of, you know, what do we need, where the portfolio does it add, or does it add to our stronger, you know, robust system of active safety or ADAS feature, and does this add something that we don't have today just by building a stronger and stronger integrated offering? So, if you look at some of these examples from last year, I think you heard and you know that we acquired LiDAR capabilities with the Fotonic asset deal we made. We, you know, did strategic collaborations on both driver monitoring system but also on the Velodyne LiDAR, helping them to commercialize them and industrialize them into the market. And obviously, Zenuity, you're very familiar with. And all of these, you know, different pieces have a specific, you know, strategy target, what they will fulfil in the overall path to a stronger integrated solution. I think we sometimes, or I have at least got some questions around, you know, would you ever consider using your shares to acquire companies? I think it's obviously a valid question. I think the, you know, the principal is obviously that was one of the reasons I think why Veoneer was spun off, so we would have a currency if we need it. I think but just to be crystal clear, I think every acquisition would have to stand on its own merits. So, I think in a case like that, that would be something that we would obviously very carefully evaluate in that case. We have some money, obviously, for M&A in that $1 billion bucket already as it is.

Well Positioned for Long-Term Value Creation

So, just to sum up a little bit what you've seen this afternoon. I think we are, obviously, on track to deliver the revenues. Hopefully, you've seen this. And we are also on track to deliver profitability towards 2020, which is the first instance. And we also think we have a very strong financial foundation right now out of the gate, trying to tackle all these not easy challenges, but very exciting challenges moving towards the next few years. And to round off this, when you talk about long-term value creation, you know, normally you're a margin-optimizing cash flow company or you're a growth company. And here really, we

can see that we will be probably much both. We will have a double-digit long-term revenue growth, we believe, and we will also have a double-digit margin outlook. And that is our absolute belief. So, I think that's everything for me. Hope you are as excited as I am and you will be on board for at least for as long as I'm on board in this journey, and that's going to be quite a long time. So, hopefully.

Q&A

Thomas Jönsson: All right, thank you very much, Mathias. Why don't you stay on stage? We will move into a Q&A panel here. We have a few nice tables, and we will ask our main speakers back up on stage. So, Jan, Johan, and Art, why don't you join us onstage, and we'll kick off the Q&A session here. Give them a couple of seconds to rearrange, get on stage, get mics, and by that, let's see. I think we should be fine to kick it off. So, we have the first question here on the third row. Sorry. Thank you.

Victoria Greer (Morgan Stanley): Can I please ask about long-term CapEx expectations, both for Veoneer and for Zenuity as well. You know, as you said, as you move into the build phase for 2018, that probably moves from, you know, 4.5-5% to high-single-digit. Should we think about it staying at that high-single-digit level? Or short-term, as you build to this, you know, big ramp up in sales, should we expect it to rise from there? And also, might you need to contribute anything as annuity in terms of cash in order to have the same effect there depending on the Zenuity orders?

Mathias Hermansson: I think when it comes to CapEx, I think we will see a, you know, temporary rise in percentage of revenues '18 and '19 probably. And once now, you know, around '20, when revenue starts to grow quite dramatically towards the target, then you're going to see that coming down over the years. And then we expect roughly right now around mid-single-digit CapEx levels. I think when it comes to Zenuity, I think, I don't think we have that much CapEx in there. You know, we invested around $70 million, our share of investment into Zenuity itself to keep them running, because we're investing quite a lot in that development. But you shouldn't expect too much money into CapEx into Zenuity itself, I think, from our perspective.

Thomas Jönsson: Okay, thank you. So, second row here right below me. Thank you.

Christer Magnergard (DNB): Question on the 2022, when you say that 70% of the book is covered already, given the 2-to-4-year lag from order to delivery, when do you need the final 30% to really have a full order book?

Art Blanchford: Yeah, I mean, we are making progress, and we have that modelled out. To give one example, there are some customers that you can still book and have in production in 1 year. So, you have until 1 year before to get that done. But we have that modelled out, and we're well on track to that. In general, we want to have it done 2 years in advance. So, for 2022, we want to have it done by the end of '19 in general.

Thomas Jönsson: All right. So, yeah, we take Hampus here in the middle of the second row, and then you can move back there, so second microphone can go to the back in the middle.

Hampus Engellau (Handelsbanken): The cash you're taking on in Veoneer, $1 billion, was changed from $1.2 billion to begin with. Was that from you defining your need of cash, or was it from Autoliv saying we need to keep some cash to keep our credit rating?

Jan Carlson: I can take that. We're talking about up to $1.2 billion, and this is actually related to what we think we need in terms of our business plan. But it's also a little bit more complicated because if you overcapitalize the company in sending it out, you may run into issues with the tax-free spin. If the company sent out with too much cash, there might be question marks around that. But that is a second-level question related to this, that it was more what do we really need than what we think is the appropriate amount of cash, and we ended up with $1 billion.

Hampus Engellau: I have a follow-up question on M&A. Could you maybe discuss a little bit, I mean, you created a big base of collaborations and your own developed product if we look at these stats on collaboration and your products. But could you maybe indicate what type of areas could be of interest that is like in the twilight between what you're doing now and what could be doing tomorrow?

Johan Löfvenholm: Maybe I can start a little bit because one of the key areas is in technologies. So, where we see opportunities and where we see needs of the strengthening or pyramid in different ways, that is one area where we constantly look for opportunities in the M&A. I guess another area which we would also look at is strengthening a particular geographical part of our business.

Hampus Engellau: Thank you.

Thomas Jönsson: Okay, so we move to the back of the room. Yeah, we have the microphone there.

Thomas Breuner: Could you specify what factors will drive you closer to the 0% or the 5% EBIT margin in 2020, especially given the fact that revenue seems to be covered by orders already? So, is this external factors? Is it internal factors? Thank you.

Jan Carlson: Well, first and foremost, a lot of the margins is related to the investment we're doing in engineering. And even higher order intake would drive margins to the lower end of the range because increased application engineering. This is not a new story. We tried to explain that here at Veoneer. We have seen it many years in Autoliv. Application engineering as a consequence of a higher order intake is having a short-term effect on the operating margin. I think also Mathias showed here that the order intake, you have a delay and you have a lag of 2 to 4 years, which is causing us this effect on being a negative operating margin initially here on the Veoneer side.

Thomas Jönsson: Okay, we move to the third row over there. Thank you.

Erik Karlsson (Industrial Equity Partners): We remember from the old Autoliv, if you call it that, that predictability margin in a certain order is pretty high. It wasn't often that a certain order deviated a lot to the positive or negative. What about at Veoneer? When you deliver something, how often does margins actually versus estimated margins significantly deviate? So, just trying to understand when you guide a margin for the future, how certain are you?

Art Blanchford: I'm going to start – maybe I shouldn't for a sales guy. But one thing to remember is that this is a much more volatile market than Autoliv, right. And so, the take rates are changing must faster. There's things, there's many things, engineering is much higher rate. So, it is, in general, I'm not going to mention about margins and predictability over margins, but the market is much higher volatility. That's what makes it also much more exciting maybe, but it's also much higher volatility than what we had in Autoliv, which is steady industrial market for the last while, anyway.

Jan Carlson: I think I would like to add something to this, and this comes from our heritage in electronic control units. We are not new in this game. Remember that we have been in this game for decades. We have produced, as I mentioned now for I don't know how many times, hundreds of millions of units in restraint electronics. And when we go into production of active safety products, we know how to do this. We know how to manage the machine. We know how to manage manufacturing. So, from that aspect, it's really not something new. What Art is talking about, there is a volatility in the type of orders, but we are familiar with this thing. And that is making Veoneer a good company already from the start from that aspect.

Erik Karlsson: Thank you.

Thomas Jönsson: Okay, we'll move to the second row here, please.

Matheus [Inaudible] (Partitions Pension Trust [?]): Maybe I have a different slant to the same kind of question, I thought, maybe to you, Art. These are new products, new services, or only functionality. So, price discovery, how do you price? I mean, you have to search for the benefit of the added feature, right, and price off of that? So, I guess you are the one around the table that can screw things up with those zero to five.

Art Blanchford: Thanks, I appreciate that. One thing, I mean, to remember that for 2020, the book is done, right. So, we're not really discussing pricing for 2020 right now. But for the future, I mean, it is somewhat of a challenge, right. So, of course, you start from what you call a value selling perspective. What is the value that this brings to the market? And then there's this other little piece called competition, all right, that you also have to play with. So, it is, as I said earlier, the pricing is much bigger gaps between regions and customers, and technologies, and niches that you're in. And, of course, it's all of our job, and my job specifically, to make sure we maximize the value of that for Veoneer.

Matheus: But does the client have an idea first?

Art Blanchford: Of course.

Matheus: But is it from you or from –

Art Blanchford: The client always, in our business, the client always has an idea first. But, you know, and sometimes it's a good idea, and sometimes it's a bad idea and we have to work with them. But they always have very clear targets. They have very efficient purchasing organizations. That's what automotive does, you know, and they have for a long time. They're very big orders with a lot of people paying a lot of attention to them. So, there's some more volatility, as I said, in that as well than there is in the traditional Autoliv business, and it's more diverse, I would say, as well. It's more divergent right now. But that will also change as take rates come and you see the number of competitors come in the space, and the amount of money that's being spent from all kinds of different companies in the space, that will converge. But right now, it is a little bit divergent, and it makes an interesting challenge.

Matheus: Good luck.

Jan Carlson: Also, to add a little bit to what Art is saying, this is a changing environment. Remember that software is to a high extent bundled into the hardware today. And this will change because of the features being enabled, because of the product that we develop. You will see software coming out of the hardware, hardware being more centralized, more general purpose. And that will also cause the pricing model to be different going forward. And as Veoneer, we have to look into subscription model, licensing model, or getting paid by the picture, or getting paid by driven mile, etc. And we have to get used to this, because not because that we want it or because of that we want it. We don't know that. And I think also here the OEMs, they are quite used to what Art is saying. They're used to push supply base. But supply base is going to look different. It's going to all be different in 5-10 years from now, and we have to be ahead of the curve again as Veoneer.

Matheus: Thank you.

Thomas Jönsson: All right, thanks. So, maybe I think we had a fifth-row question now, and then you move that to the third row. No, you can move it straight back, that microphone, to Bjorn Enarson. And meanwhile, fifth row, ask your question. Thank you. We have to get it done. Please.

Ciprian Young (Bernstein): Thanks for taking my questions. Ciprian Young from Bernstein. I was hoping you could help me understand the rationale for changing your segmental reporting structure. You used to report the three segments under electronics. It now looks like you've embedded active safety into with restraint controls. Why have you done this? Is that correct in the SEC filing?

Mathias Hermansson: I can take it. No, I think there's really two things. One is, you know, there is a huge overlap in the businesses when it comes to the way we run it and the way we sell it when it comes to centralized domain, so it makes sense for us to look upon it together. And the second part is that obviously we think that the benefit of having – or let me put it the other way around. We are looking at it from a deep perspective on different segment levels. Active safety together with restraint controllers are measured internally on the two different levels that you talk about. However, right now we decided to do it in one package.

Ciprian Young: Is there any scope in future that we might get to see the operating performance of active safety?

Mathias Hermansson: Over time, I think what we all should remember is there is obviously a competitive element to this as well. We're quite unique in the pure play, large pure play safety electronics business. So, over time, maybe when things move forward, then we may consider doing it more in three ways or even more maybe.

Ciprian Young: Okay, thanks. And can I just ask one more question on your cash flow projections. When do you expect to become cash flow positive?

Mathias Hermansson: I think, as you know, the target for EBIT, consolidated EBIT positive is in 2020. Then when, you know, you have to consider the CapEx that we discussed and also investments into Zenuity. And taking that into consideration, we think that overall cash flow positive for the overall business around 1 to 2 years after 2020.

Ciprian Young: Okay, thank you.

Thomas Jönsson: All right, thank you. So, Bjorn, and then you maybe you hand the microphone to Agnieszka afterward.

Bjorn Enarson (Danske Bank): I think actually you answered my question with you don't know really because it was asked previously. But it was on pricing as OEMS enable different features and price for them in different ways. That impacts you, I guess, and that was what you said, but you don't know how that pricing model will look like. Okay. And then a second quick question. This real life safety and when will we see more of that in your end cap kind of cast where it will be a match between monovision, stereovision, or whatever applications?

Johan Löfvenholm: First of all, I think I'll take one more stab at the pricing question actually, then I'll come to the – We might not have the – and I don't think anybody has the complete answer to how the pricing model will look like. Our best is to have the solution and the value that we can put a price on in the future. If you look at what we just presented here to Erik and Zenuity, if you have a software stack where you can actually get a value to the OEM, then you are sitting on the value, right. Then you have the opportunity to drive the pricing. So, I think that is our simplistic approach to that. We have to be openminded. And I know that the sales team is really working on this to look at new variations. But if you don't have the stuff that people want, then it doesn't matter, right. So, that's one part of it. Going to the end cap, we've seen it, and we see it constantly how this moves. And if you look back to the '90s even, it's been taking implementation, stepwise implementation into more and more ratings closer and closer to real life safety. And I think the 2018 upgrades now where you see it becomes more pedestrian sensing, you see 2020 it's also sharpened. So, that will drive, you know, to be able to get a four or five-star rating, we are not looking at the first level ADAS picture that Erik showed before. You won't be able to make that with a single system. You will have to add multiple sensors to be able to do that. And, of course, at the core of that, if you have a camera with two lenses, well then you have a better starting point as well.

Bjorn Enarson: Thank you.

Agnieszka Vilela (Nordea): I wonder what kind of performance metrics that you will consider important for your business? Will you be focusing more on say order intake or early to sales when you just look how you perform? And in connection to that, will you be guiding for sales growth and EBIT margin just like Autoliv did?

Jan Carson: Looking on the performance metrics as we will have several KPIs. Of course, the performance on quality, and delivery, and customer satisfaction will be extremely important for us in the beginning to gain traction and show the customers that standing alone on our own feet we are as good as we have always been within Autoliv. So, that is one thing. When it comes to financial performance, order intake is clearly a very important measurable for us. And of course, other financial measures in terms of performance, and profit, etc., are also equally important. So, we'll come back to that. But order intake, following the market growth, and having the good traction that we have shown here on order intake is an important part. Coming back to the guidance, we will come back to that and see how we will guide the company. We have not yet determined on what level we will guide the company yet and how it will look like. Autoliv have had over the years a certain rhythm in guiding quarterly on organic sales and EBIT margin. We may have other metrics that are more important for us to leave to all of you here. We have traditionally in Autoliv shared a lot of information on a granular level, and you know, we are of the same heritage. But let's discuss that a little bit later.

Thomas Jönsson: Okay, thank you. Then we had next question in the back of the room.

Kai Mueller (Bank of America Merrill Lynch): Two, if I may. The first one, on your orders, of you look at your profile and the orders you're taking, if we talk about level three and the future, are you really pushing out the other competitors that are currently delivering level two projects to those same customers? Or are these just, you know, new companies you are suddenly, you know, getting more exposure to, because you've shown us, obviously, your wealth of, you know, more customers you are actually allowed to bid for? And secondly, what is really then the determinant why they choose you or should choose you versus the others? Is it the product? Is it the price? Is it, you know, the delivery schedules that you can achieve? So, what is the delta between those two? And then maybe just to add a last one, on your collaborations, you included some LiDAR, for example, with Velodyne. Most of these are non-exclusive agreements. How are you the value add to those, you know, those big businesses in the long run?

Art Blanchford: So, I will start on that. There's a lot of questions inside that question. I think I counted six. I'll start with the first one as far as are we winning in existing customers that have level three systems? And in general, the customers that have level three systems today have their own level three systems. And so, we are staying in those games. We are, you know, as you know very well, working with Daimler in a long way and a very good partnership there, and we are working with other customers that have their own level three systems as a part, as a supplier, to a part of that system. And I think we're holding our own there. I wouldn't say we are losing or winning in a significant way. What it's changing is that there are customers, so Johan mentioned, too, is the fast

followers that are now don't have the capability to do a level three system on their own, and now they're starting to see they also need to have one. And there I would say we are also winning. Our competitors are also winning some. We are also winning some. But it's a different set of OEMs with a different set of requirements.

So, I don't think one is displacing the other per se like that. I think how we are winning in those situations is it's not, in the end, it's actually not so much a price differentiator, it's about who they trust can actually execute this system. And sometimes, they don't know a whole lot, I mean, they're new to this, too, right. So, it's really do they trust our management? Do they have a history of working with us where we've delivered what we said we would deliver? Do we have the right type of customer-centric collaboration that they want to work with us? I mean, there's been OEMs that I've talked to that mention, you know, just to put it in terms everyone understands, the Apple type of suppliers and the Android type of suppliers, all right. And most customers want to work with somebody that's open, and that they can see, and that they can work together and really have a true collaboration with. And I think that's also driving. And some of those customers that maybe want to have a different type of system, maybe we won't be their customer. But I think that's a big driving point is do they trust our ability to make automotive-grade, to make quality based on our history, and do they trust our way of working with them, our customer-centric delivery?

As far as looking on these collaborations and the value we bring, that's a really interesting one, and it's actually the same answer. If we look at, you know, Velodyne, which is a non-exclusive agreement that we signed. And the OEMs asked that question, too, in the beginning. But some months in, we have orders now with a fair amount of value in between us because they see that we can deliver an automotive-grade product that they could not get directly from a technology house, and they could not get themselves, even.

But that our experience in this space and the expert systems that we have for not just industrialization – that's clear as well, and quality – but also on the application engineering side, to be able to bring something into automotive-grade, we have that trust and that history. And they see that value because when they can't get parts otherwise that work for them, then there's a lot of value for someone in between that can bring those to them. And the whole way that we want to manage those non-exclusive agreements, the reason we did non-exclusive agreements is we didn't want to get tied up in long discussions. We wanted to move forward and make business, and the value comes from the relationship with the OEM. The OEM is the one that gives the order. And if we have the relationship with the OEM, if we have the trust in the customer, then we think that we can prevail even in non-exclusive. And not just think, we see it in daily life in the last 6 months.

Thomas Jönsson: All right, thank you. I think that was a complete answer. So, Hans, first third row again, and then we move to the back on this side.

Analyst: Just on the order intake versus sales, how come you don't book $5 billion of orders for expected $5 billion of sales? What's the difference there and how much can the sales and orders deviate from the 5X multiple you suggested?

Mathias Hermansson: I'm not really sure I understood the question.

Art Blanchford: The reason we do is the history. We just talk about annual order intake, and so we just take an average annual order intake. It's just history, the way we've done it.

Jan Carlson: We've always done it like that, and we may change that over time. But as of now, we are booking it on an annual basis. What is the order giving on an annual basis, not on a lifetime basis?

Analyst: Understood. Thank you.

Thomas Jönsson: All right, back of the room, I think you have the microphone.

Christopher Gorman ([Inaudible]): You've obviously come from a business that historically has held a very strong external credit rating, and you confirmed obviously yesterday the S&P you're maintaining that as A minus. Have you engaged with S&P at all now, you on the Veoneer side? Or if not, how do you perceive yourselves, investment grade or seeking to become?

Mathias Hermansson: I mean, no we have not engaged. I mean, we will not have any debt, and that's for sure. I mean, that's the whole purpose of what you're trying to accomplish right now, a solid, you know, starting position net cash. Over time, you know, we have to see, but that's quite far in the future. And as you probably know as well, we have said that we don't expect a dividend in short-to-mid-term.

Thomas Jönsson: All right, so, yeah.

Julian Radlinger (UBS): Yeah, thank you. If we can get back to the order intake for one question, I was just wondering for the revenues to 2020, what assumptions are you making on volume and on take rates, since a lot of your product portfolio is quite dependent on the take rates that you're going to have at the end of the day? Do you just take what the OEMs give you? Do you take IHS numbers for volume? I know you have some experience in take rates. Some color on that would be great. Thank you.

Art Blanchford: Yeah, I think it's a really good question. You obviously know the industry well, because there's a lot of data input you can take there. And the two main inputs that we take is the OEMs input and IHS. IHS is really good on vehicle volumes as a whole. They're not so good on take rates, especially in some of the disparate markets. So, we also have looked at SA, we've looked at Bain studies, Goldman Sachs. We've looked a lot of things, and now we have a product planning team that works for me that on a full-time basis is studying all the time what are the latest updates and what do we think is shifting. So, it's I would say for 2020, it's largely OEM numbers, because we've seen what they're doing, we've seen what they're running today, we see what the take rates are in the market today. And we can more or less extrapolate those to 2020. Beyond 2020, it's much more in this segment of vehicle, in this market, with this type of regulation, and what we're seeing from all these other studies, this is what we feel a take rate will be for these components. But through 2020, it's fairly solid. We see maybe some pressure to the upside. As the consumers continue to ask for more, the take rates may come up a little

bit. But for 2020, it's largely based on OEMs with IHS and our own experience, and pretty solid, I would say for 2020.

Thomas Jönsson: All right. So, we have about four minutes left. One to two questions, depending on how long they are and the answers. But we move to the optimist standing up in the back of the room here, please.

Viktor Lindeberg (Carnegie): Thank you. Simple question, reading your SEC filing and looking at the JV with Nissin, this spinoff will now be considered a change of control event, and they have not given consent as of the filing of this report last week. Can you just update us if they have as of today or when you expect them to approve or disagree, and what effect this may have on the listing, if any?

Jan Carlson: They have, as far as I know, they have not given us the approval as of today. We are in a dialog with them, and we would hope and expect that to happen, that they will give us their consent. This is a custom in Japan. It sometimes takes longer time, and it's more process-oriented and a little bit more complicated. If for whatever reason that would not happen, which I don't think is the case, but if it would for whatever reason, there are clauses in the JV how to regulate that going one or the other way. So, let's not go into there until we find out if there is a no, which I don't think is the case. That will not have a stop on the spin.

Viktor Lindeberg: Okay, thanks. Final easy question for you to answer, I think, Mathias, on margins by division. You say 0-5% margin in group level. Can you elaborate on what margins you anticipate for the different divisions, brake systems and the electronics division, if there should be any difference?

Mathias Hermansson: No, we haven't been that granular yet, and so this is partly what we consider as well over time, in the disclosures.

Viktor Lindeberg: All right, thanks.

Thomas Jönsson: All right. So, we move further, final question. Yes, please.

Erik Paulsson (Pareto Securities): Hi, Erik Paulsson, Pareto Securities. Regarding connectivity now and everything around that, how do you see your internal development regarding cybersecurity, regarding theft, terror threat, and even kidnapping, etc.? Do you do any internal development there?

Johan Löfvenholm: I can start. Well, first of all, there are very – going through history in our RCS, there is already a part of that that has been around for many years. So, at the core development of our controllers, this is already an aspect. That aspect is, of course, growing now in scope as we go forward. And there are a lot of new players that are specializing in this for sure. But I think the main answer is that for any future generation of controller, this is already part of the specification. That's the first part of the answer. Then to look at new solutions and new services perhaps around this area. We are doing this in our tech scouting findings, and we're also looking at it as part of the Zenuity software stack to see how you intermingle it into the full decision-making software stack.

Erik Paulsson: Okay, thank you.

Thomas Jönsson: Actually, only 2 days ago, we were part of demonstrating geofencing her in Stockholm as part of a broader initiative together with Ericsson and so on. So, we have concrete activities ongoing on the research side.

Okay. Thank you very much. So, thanks to our panellists. I will ask Jan to say and the rest of you to leave. Thank you very much. And also, thank you for participating to both Autoliv and Veoneer Investor Day today here in Stockholm and for those of you watching via web or listening via telephone conference. This is the last you'll see of me today as well. We will keep you regularly updated, and of course, you know where to find us if there are further questions. We are only 1 month away for the planned spin, with July 2nd as the first trading date. So, quite exciting time for us. But, with that, of course, I leave the last word to Jan. Jan, please.

Jan Carlson: Thank you, Thomas. Yes, this is a great day for Autoliv. It's a great day for Veoneer. We are making one great company two great companies. And to start with that, I will just say that I hope you enjoyed the presentation this morning looking on the future prospects for Autoliv. We have been talking this afternoon about Veoneer. But Autoliv has a great future in many aspects, a great team, a great market presence, a great order book, and also great ideas of how to expand their business. It's a solid business that has a lot of potential going forward, also looking into areas that may be outside what they are doing today. So, I hope you enjoyed that. And for me, taking us into the next part this afternoon here, again I hope you have first and foremost seen the people that are presenting here. This is only a few of the competence level of what we have here in Veoneer. This is a people company, as it is in Autoliv.

Autoliv is also a people company. This is another people company. We have an enormous competence and resources here to take us into the future. We have a growth opportunity in a market here that is $50 billion potentially waiting for us out there to get traction. And to be able to do that, we have to have a convincing proposition, and that's all developed by the people. We have – we are on track to deliver on our targets. I hope you have seen and we have been demonstrating this morning that with an order intake that is all-time high over the last 12 months, over $1 billion, we are well on track to deliver on our targets for 2020 and 2022. And I hope we have visualized that during this afternoon in our presentations. We have more than $600 million out of this $1.1 billion coming from the fastest-growing part of our business in active safety.

So, again here, we have the market growing, we are on track with our order intake, and we have the competence. So, what is then the unique thing? I like to repeat it again. We have the history of delivering safety. We have the history of delivering hundreds of millions of units with the lowest defect rate and the lowest recall rate in this industry. We have built up the highest level of technologies on the tech side. Bringing these two important parts together creates this fantastic and unique position. Because at the end of the day, technology is a good thing. Having a good demonstrator is quite nice. And it's new, and media, and markets, and us, we like to showcase this. But when all of us is sitting in the vehicle, and when all of us is driving in good road conditions or bad road conditions, what

we want most, first and foremost, is to get there safe and sound and probably with as little distraction as possible.

That is a product you can trust. That is our purpose. That is why we are here to do. So again, I look forward to this journey. I look forward to be a part of this. I look very much forward to see Veoneer go into trading in a month timeframe. And then from there, to grow into a further prosperous future. And with that, I would like to thank you all here, thank all the presenters, great job, great preparations, good job in illustrating our vision and our ideas. Thank all the participants here in Stockholm and thank you all over the webcast for joining us today. And I look forward to staying in touch with all of you. Thank you very much.

[END OF TRANSCRIPT]