Q3 2019 Earnings Call

Company Participants

- Peter Wennink, President and Chief Executive Officer
- Roger Dassen, Executive Vice President and Chief Financial Officer
- Skip Miller, Vice President, Investor Relations

Other Participants

- Achal Sultania, Analyst
- Adithya Metuku, Analyst
- Alexander Peterc, Analyst
- Amit Harchandani, Analyst
- Andrew Gardiner, Analyst
- C.J. Muse, Analyst
- David Mulholland, Analyst
- Joe Quatrochi, Analyst
- Krish Sankar, Analyst
- Mehdi Hosseini, Analyst
- Pierre Ferragu, Analyst
- Robert Sanders, Analyst
- Sandeep Deshpande, Analyst

Presentation

Skip Miller {BIO 20244900 <GO>}

(Starts Abruptly) Veldhoven in The Netherlands, is ASML's CEO, Peter Wennink; and our CFO, Roger Dassen. The subject of today's call is ASML's 2019 third quarter results. The length of this call will be 60 minutes and questions will be taken in the order that they are received. This call is also being broadcast live over the Internet at asml.com. A transcript of management's opening remarks and replay of the call will be available on our website shortly following the conclusion of this call.

Before we begin, I'd like to caution listeners that comments made by management during this conference call will include forward-looking statements within the meaning of the federal securities laws. These forward-looking statements involve material risks and uncertainties. For a discussion of risk factors, I encourage you to review the safe harbor statement contained in today's press release and presentation found on our website at asml.com and in ASML's Annual Report on Form 20-F and other documents as filed with the Securities and Exchange Commission.

With that, I'd like to turn the call over to Peter Wennink for a brief introduction.

Peter Wennink {BIO 1852674 <GO>}

Thank you, Skip. Welcome everyone. Thank you for joining us for our third quarter 2019 results conference call. Before we begin the question-and-answer session, Roger and I would like to provide an overview and some commentary on the third quarter, as well as provide our view of the coming quarters. Roger will start with a review of our third quarter financial performance with added comments on our short-term outlook, and I will complete the introduction with some additional comments on the current business environment and our future business outlook.

So, Roger, if you will.

Roger Dassen {BIO 15064806 <GO>}

Thank you, Peter. Welcome everyone. I will first highlight some of the third quarter accomplishments, and then provide our guidance for the fourth quarter of 2019. Q3 net sales came in at EUR3 billion as guided. Net system sales of EUR2.3 billion was heavily weighted towards Logic at 79%, with the remaining 21% from Memory, clearly showing the current strength of Logic business and the digestion mode of Memory business. We recorded EUV system sales of EUR743 million from seven shipments as guided.

Installed base Management sales for the quarter came in at EUR661 million, which was a bit lower than guided. We expect this will be captured in a higher Q4 installed base sales. Gross margin for the quarter was 43.7%, nicely within the range we guided. Overall R&D and SG&A expenses came in as guided, with R&D expenses at EUR493 million and SG&A expenses at EUR129 million.

Turning to the balance sheet. EUR154 million worth of shares were repurchased in Q3. We ended last quarter with cash, cash equivalents and short-term investments at a level of EUR2.1 billion.

Moving to the order book. Q3 system bookings came in at a record EUR5.1 billion, mainly driven by EUV, where we received 23 new orders in the quarter, both from Logic and Memory customers. Logic order intake was 73% of the total value, with the remaining 27% from Memory, again reflecting the strong Logic demand. Net income in Q3 was EUR627 million, representing 21% of net sales and resulting in an EPS of EUR1.49.

With that, I would like to turn to our expectations for the fourth quarter of 2019. We expect Q4 total net sales of around EUR3.9 billion, which will represent another record year with approximately EUR11.7 billion of sales. Our total net sales forecast for Q4 includes around EUR950 million of EUV system sales from eight planned shipments. Four systems originally planned in Q4 will now ship in early 2020 due to temporary supply constraints in the NXE:3400C RAM. We expect our Q4 Installed Base Management sales to be around EUR850 million, which is almost EUR200 million higher than Q3, driven by strong demand for field upgrades.

Gross margin for Q4 is expected to be between 48% and 49%, which is significantly higher than Q3. The expected improvement in margin is due to higher system volume, higher ASP for NXE:3400C model, Deep UV product mix, higher EUV service sales and higher field upgrade sales. The expected R&D expenses for Q4 are around EUR500 million and SG&A is expected to come in at around EUR135 million. Our estimated 2019 annualized effective tax rate is around 7% due to several tax benefits in 2019. We still expect our long-term effective tax rate to be 14%.

Regarding our capital return. ASML announces that it has revised its capital return policy to provide for dividend payments on a semi-annual basis. ASML dividend proposals will continue to be subject to the availability of distributable profits or retained earnings and other factors, such as future liquidity requirements. The interim dividend over 2019 will be EUR1.05 per ordinary share. The ex-dividend date as well as the fixing date for the Euro-US dollar conversion will be November 4, 2019, and the record date will be November 5, 2019. The dividend will be made payable on November 15, 2019.

In January 2018, ASML announced its intention to purchase up to EUR2.5 billion worth of shares to be executed within the 2018-2019 timeframe. ASML intends to cancel these shares after repurchase, with the exception of up to 2.4 million shares, which will be used to cover employee share plans.

Through September 29, 2019, ASML has acquired 8.2 million shares under this program for a total consideration of EUR1.4 billion. ASML does not expect to purchase the full EUR2.5 billion worth of shares within the 2018-2019 time frame. In line with our policy to return excess cash to shareholders through growing annualized dividends and regularly timed share buybacks, we will decide on a new share buyback program next year.

With that, I'd like to turn the call back over to Peter.

Peter Wennink {BIO 1852674 <GO>}

Thank you, Roger. As Roger highlighted, it was a good quarter and provided another clear signal on the increasing customer confidence in EUV technology, as witnessed by the strong EUV order volume for both Logic and Memory manufacturing. We expect a very strong fourth quarter in both sales and profitability, again driven by Logic demand for both EUV and Deep UV. And this further confirms 2019 to be a Logic driven year as we indicated at the start of the year, fueled by end-market applications requiring high performance compute such as 5G and AI which drives demand for leading-edge Logic. This in turns translates to demand for both EUV and Deep UV in support of the most advanced nodes as customers accelerate their ramp plans for 7-nanometer and beyond.

In Memory, as the market continues to digest inventory and the supply chain and operate with reduced wafer output as they work to reach a more normalized supply demand balance. And this translates into a weak demand from our Memory customers and we see a significant reduction in our Memory business this year as indicated in earlier conference calls. We expect this weaker demand environment to continue through Q4 of this year,

whereby the timing of the recovery still remains uncertain. We continue to expect low-single digit percentage increase in our Installed Base sales this year.

Let me now turn to the ASML product side and update you on our EUV business. EUV customers continue to ramp this technology in volume manufacturing and have publicly announced some of their first EUV manufactured devices. We continue to make solid progress and shipped our first NXE:3400C systems this quarter for use in volume manufacturing. The NXE:3400C will deliver an increased and -- will deliver an increase in productivity of over 35%, which will provide significant customer value and bring profitability in our EUV business more in line with the rest of the business.

The higher productivity of the 3400C demonstrated the required capability for Memory insertion as evidenced by the system orders, as well as a potential increase of layer adoption in Logic. Of the seven EUV system shipped this quarter, three were NXE:3400C systems and we plan to ship another six 3400C systems next quarter of the total eight systems planned in Q4. As Roger mentioned, there were some temporary challenges in the supply chain as we ramp our output capability and transition to a new fully configured 3400C model. These supply constraints resulted in a movement of a few systems originally planned to ship in Q4 into early next year.

Customers are aggressively bringing new technology to the market and with increased customer confidence around EUV technology, we're seeing strong demand for our EUV systems as witnessed by the strong order intake of 23 systems in Q3. These systems are planned for the ramp of 7-nanometer Logic and beyond, as well as the insertion in 1z and 1a DRAM production. To meet strong customer demand for our 3400C systems, we have a production plan in place for 35 EUV systems next year, which includes the systems originally planned in 2019.

To summarize 2019, we see a strong fourth quarter in both sales and profitability. Logic has been the primary driver of growth this year and demand has strengthened as customers accelerate the ramp of their advanced nodes. Memory demand remains weak as customers work to reduce inventory and improve fab utilization. Our overall view for the year remains largely unchanged and we confirm 2019 to be another year of growth. Regarding our outlook for next year, it's too early to provide quantitative expectations but we'll make a few qualitative comments. Major innovation drivers in applications like Artificial Intelligence, 5G, Autonomous Driving and Big Data are driving a clear secular growth path in high performance Logic at the advanced nodes. Logic demand is currently strong and although different Logic customers are at different phases of accelerating their roadmap, we expect this demand to remain healthy, primarily driven by EUV as we look into next year.

As customers transition to the 7-nanometer node and beyond with increasing EUV layers, it is also driving strong demand for our EUV systems. As all systems are expected to be NXE:3400C systems next year, we expect to not only see an increase in unit volume, but also expect to see significant growth in EUV sales next year. These new applications -- this new application drivers not only require high performance Logic but also require high performance Memory to maximize value. Memory demand is more critical in nature -- sorry, Memory demand is more cyclical -- it's more cyclical in nature and the Memory

market conditions today do not yet reflect what we would call moderate market conditions, but a scenario that we use to model 2020 as was shown during our Investor Day last year. Although the Memory market is widely expected to recover next year, there is uncertainty on the timing and when it will trigger the demand for wafer fab equipment, and more specifically, demand for our Deep UV and application products. When the Memory market recovers, history has shown that the demand can change quickly and it likely will be the case again this time.

The timing and the degree of this Memory -- of this Memory recovery in combination with the current outlook for the Logic demand will determine the ultimate 2020 product mix between EUV, Deep UV and application products. This not only forms the basis for another year of growth, but depending on this mix, we will also determine the margin profile for the year as our EUV margin improvement is well underway but not yet at the Deep UV levels.

Regarding Installed Base business next year, we expect the service portion of this business to grow nicely as our Installed Base grows. As our customer start running EUV in high volume production, we therefore expect to see more EUV service sales next year. There are also a large number of upgrades planned next year that we expect will drive significant growth in our upgrade business.

In summary, the positive momentum in EUV is reflected in the increasing confidence of our customers as they accelerate the adoption of EUV technology in volume manufacturing. And although there is still some short-term uncertainty around timing and the degree of the Memory recovery, we are optimistic on the medium to long-term secular trend which underpins the confidence we have in our 2025 growth scenarios.

With that, we will be happy to take your questions.

Skip Miller {BIO 20244900 <GO>}

The operator will instruct you momentarily on the protocol for the Q&A session. Beforehand, I would like to ask you that you kindly limit yourself to one question with one short follow-up if necessary. This will allow us to get to as many callers as possible.

Now, operator, could we have your final instructions and then the first question please.

Questions And Answers

Operator

Thank you. At this time, we will begin the question-and-answer session. (Operator Instructions) The first question comes from Mr. Joe Quatrochi, Wells Fargo. Go ahead please.

Q - Joe Quatrochi {BIO 18961101 <GO>}

Maybe if you could help us with your 2020 EUV guide. The 35 systems that you're shipping, correct me, I think I've heard you correctly that those include the four tools that has slipped from 2019. I was wondering if you could help us understand how do we think about the EUV revenue relative to your expectations entering 2020?

A - Roger Dassen {BIO 15064806 <GO>}

Sure, Joe. So, you're right, the 35 systems for 2020 they do include the -- they do include the four that slipped from 2019 into 2020. The systems that we're looking at for 2020 will be 3400C systems, and importantly, there will be 3400C systems in final configuration which is important, and therefore, the average sales price of those systems will reflect the -- about 30% increase over the 3400B system. So that's the way to calculate the revenue for 2020.

Q - Joe Quatrochi {BIO 18961101 <GO>}

Okay. That's helpful. And then, just as a follow-up, did the -- those systems, meaning the full 3400C systems have an impact on the number of systems that ultimately you plan to ship in 2020, I guess, just given the higher throughput?

A - Roger Dassen {BIO 15064806 <GO>}

No, the calculation of 35 is reflective of the total throughput that the 3400C in final configuration will bring.

Q - Joe Quatrochi {BIO 18961101 <GO>}

Okay. Thank you.

Operator

Next question is from Mr. David Mulholland. Please state your company name followed by your question.

Q - David Mulholland {BIO 16819172 <GO>}

Hi, it's David Mulholland from UBS. Just following-up on planning for next year, because obviously previously you've been talking about anywhere between 30 and 35 systems to ship next year, and obviously in theory that could then have become 39 unit capacity for next year at the high end. Do you still have optionality to do that into next year?

And then just as a follow-up. On HMI, I just wonder if you could give us an update on where we are with the progress on that, because the revenue run rate still been quite low in the last few quarters compared to what your aspirations where when you closed the deal. So it would be helpful just to get some thoughts on what progress we're seeing on that business into 2020?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah. Okay. Thank you, David. On the 30 to 35 systems that's what we said before, and indeed, you are correct unless as Roger mentioned we have four systems that we planned to ship in 2019 moving to 2020, so we put them on top. But as you also know that in 2019 we were back-end loaded this year, so we already said that at the beginning of the year, and with the introduction of the C, we experienced a few weeks delay on certain modules that are part of the final configuration of the C. So that's why it moved into 2020. So just to be on the safe side -- we could argue without the four systems that moved from 2019 to 2020, we're on the lower side of this 30 to 35 range and that is correct.

So plus four, that's why we say at 31 plus 4 is about 35 systems. Does that mean that we don't have more capability? No. We do have more capability, but I think we're just more on the conservative side also given what happened this year back-end loaded that could mean that you always have a risk of moving some systems in to 2021. So you should look at it in this context. Now on HMI, as you know HMI shipments we're largely focused on the Memory business, I'd say it's focused contrast applications in the 3D NAND space, that of course has been lackluster as we all know, and especially for 2019. So yes, you know that recovery of that sales number will of course happen when the Memory market and especially the 3D NAND market comes back.

Q - David Mulholland {BIO 16819172 <GO>}

Can you just help, how do you feel on the axial technology programs, first multi-beam and kind of the big steps that you are hoping to see in the business?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think we are -- the first pilot system we will ship early Q1 of next year and that means that -- and as I mentioned on earlier calls, we had a six month to nine month delay on the program as compared to the timing that we discussed with you at the time of the acquisition as it has to do with the fact that we -- that we focused on partnering up with one of our key suppliers for the optics. Now for well-known reasons and good reasons that particular participation of that partner could not happen and that actually meant we had to do it ourselves, which created six month to nine month delay. So that means that the first pilot systems are going out in Q1 next year, but you have to add about a year before we go into HVM. So the anti multi-beam HVM ramp will be about 12 months, they will later move into 2021.

Q - David Mulholland {BIO 16819172 <GO>}

Excellent. Thanks very much.

Operator

Next question is from Mr. Mehdi Hosseini. Please state your company name followed by your question.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

Yes, thank you. Just a follow-up Peter to the last question. Would it be fair to say that as you ship this first multi-beam, e-beam system early next year you gain more momentum.

Then, by the time you have your next Capital Market Day, you would be able to discuss more holistic lithography part of the story is going to be scaled? I'm asking you this because e-beam was supposed to be part of it, it was delayed and now it's back on track. And I think now that the EUV is in high volume manufacturing, it will be great to get an update on how holistic and part of it, how multi-beam, e-beam inspection going to play out throughout 2020? And I have a short follow-up.

A - Peter Wennink {BIO 1852674 <GO>}

Well, in 2020, if you refer to my answer to the last question, I think in 2020 we're going to ship pilot systems. I think the HVM will be in 2021. So I don't think that is a major issue for 2020. I think when you referenced to Capital Markets Day of next year, which of course we will talk about a bit later, but we definitely have one. We will talk about the holistic strategy of the Company as an integral part of our entire product strategy and it will be a growth area. But you say, EUV being there, yes, it is ramping in HVM in 2020 definitely, but it's just the beginning. I mean, the growth of the Company does not depend on the growth in our holistic business. That's going to be an integral part of our growth profile.

EUV, as you may remember from the previous Analyst Day, is the significant part of our business by 2025 with a significant growth profile. So I think it is both holistic applications. You need to remember, our holistic strategy is a combination of our application business, our EUV and Deep UV business. Yeah. So I think all will contribute to the growth profile of the Company and specifically to multi-beam, you see the first pilot shipments in 2020 and HVM after that in 2021.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

Great. And then a follow-up to your comment from last earning conference call. You talked about a $1 billion of investment, you referred to that, a strategic investment from China and EUV insertions for DRAM. How do you see the $1 billion which you characterize as having very minimum downside risk trending into 2020?

A - Peter Wennink {BIO 1852674 <GO>}

Well, nothing changed in my mind. Absent any major geopolitical movements, the plans are still there. Chinese customers are taking the tools and they are more or less ramping according to plan. So it also means that their expansion plans for 2020 and beyond remains very much intact.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

But perhaps where does the $1 billion go? How do you see that growth trending?

A - Peter Wennink {BIO 1852674 <GO>}

You mean beyond 2019 into 2020 and beyond? Yeah, I think the medium-term trend that is and it could be -- yeah, that -- it all depends on how the ramp profiles of those customers really look like, but if you look at it over a, let's say, two, three-year period, that's going to be at least at that level. Now it could be one year, it could be a little bit more, one-year could be a little bit less, but it's going to be at least at that level. And I

think medium-term, if we follow the road maps of our customers and their investment plans, it will grow.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

Thank you.

Operator

Next question is from Mr. Krish Sankar. Please state your company name followed by your question.

Q - Krish Sankar {BIO 16151788 <GO>}

Yeah, hi. It's Cowen & Co. Thanks for taking my question. I have two of them. First one for Peter or Roger. When I look at your Memory shipments last quarter, it's almost of a three year low, but you have a pretty high bookings run rate. Is there a way to split up the Memory bookings by EUV and non-EUV? And along the same path, Peter at some point next year if and when Memory recovers, do you think it's going to be NAND or DRAM that would drive the recovery. And then I also have a follow up.

A - Peter Wennink {BIO 1852674 <GO>}

Well, I think on the booking side, it's predominantly EUV. So the non-EUV bookings are real light. So as I -- like I said, it is predominantly EUV. On the -- and that is a strategic investment. Like I said, it's the -- it's the 1z and the 1a preparations. Whether NAND or DRAM is going to recover, you tell me is -- what we really need to watch in has always been the case is that the pricing levels, you know what is the pricing trend. When the pricing trend turns for both, we just need to see how sustainable it is. So you really need to -- you cannot judge this from one or two weeks, we have to look at it from a little bit longer period and then look at that trend.

And then you need to remember, when that trend turns that our Memory customers still have some idle capacity that they are going to use first before they start to add more wafer fab equipment. And so, this is a general trend both through for NAND and for DRAM. So I would advise all of us to just keep looking at the pricing trends.

Q - Krish Sankar {BIO 16151788 <GO>}

Got it, got it. That's very helpful, Peter. And then just as a follow-up for Roger. I don't want to split hairs on the EUV units for next year, but -- whether it's 32 or 34 higher, how do we think about the gross margin for EUV? Does it still like fit in with your prior plan where you're going to have a 40% exit run rate next year for EUV gross margin?

A - Roger Dassen {BIO 15064806 <GO>}

Yeah, I think that's right. For next year we are looking at a 40% plus gross margin for EUV systems. That's still the plan, not just to exit the year, but in fact for the full year.

Q - Krish Sankar {BIO 16151788 <GO>}

Yeah. Thank you.

Operator

The next question is from Mr. Achal Sultania. Please state your company name followed by your question.

Q - Achal Sultania {BIO 17744137 <GO>}

Hi, good afternoon. It's Achal from Credit Suisse. Maybe a question on again on margins on EUV, like obviously Roger, you're saying it's 40% or north of 40% for whole of 2020. Like just looking at -- like a long-term view, your DUV margins are much higher, probably 50%, even higher than 50%, what's the -- is there any specific reason why EUV shouldn't go up towards DUV levels not in the next one or two years, but let's say over the next three years to five years. Like, can it actually happen or there is some structural issues which prevent EUV margins reaching those levels?

A - Roger Dassen {BIO 15064806 <GO>}

No, I would agree that is definitely our ambition and more than our ambition that is our plan to get the EUV to -- not just to, I would say, the overall gross margin that we see for Deep UV, but to get EUV to the margin level where we currently have immersion, which is our leading lithography tool in terms of the gross margin. That is the ambition. And we have the plans to get there and that will of course fully depend on the value that we bring to our customers. But we're confident that with the roadmap that we have in front of us that we are going to get there. So that is what we're driving on the system side.

And then the other dimension that we're driving is EUV service which obviously this year has a gross margin that we talked about, which is -- which is not favorable and -- but we do have plans in place in the next couple of years to get also the EUV service margin to a level that will significantly contribute to -- I think there is a bit of background noise, that might be confusing.

Operator

I think it's on the line from Mr. Sultania sir.

Q - Achal Sultania {BIO 17744137 <GO>}

Yeah, yeah. Can you hear me now?

A - Roger Dassen {BIO 15064806 <GO>}

Yeah, yeah.

Q - Achal Sultania {BIO 17744137 <GO>}

Yeah, thanks, Roger. And then maybe just a follow-up on the DRAM market. Obviously, we've now seen one of your customer starting to use EUV for 1z and then 1 alpha ramp. Like how are the talks going on with other DRAM customers? Is it still early days to figure out what their ambitions are or you're making decent progress with the other two lead customers there? Thank you.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think there is no doubt in my mind that all DRAM customers are going to use EUV. Now the question is, different customers have different roadmaps and different timings when roadmaps will lead to insertion of EUV. Clearly, there is a major customer that has started to do that, which means that the others will follow. And -- but they follow in different time schedules. One is much closer than the other, that's the way that I would like to explain it.

Q - Achal Sultania {BIO 17744137 <GO>}

Okay. Thank you, Peter.

Operator

Next question is from Mr. Sandeep Deshpande. Please state your company name followed by your question.

Q - Sandeep Deshpande {BIO 3869012 <GO>}

Yeah, hi. Thanks. Peter, can I understand in terms of what development needs to happen in terms of manufacturing to ramp up your capacity in EUV now that for 2020 you have on the book more orders than you have capacity. What you need to do to ramp up your capacity? And then secondly, with regards to Memory usage of -- or DRAM usage of EUV, how the progress is on that front and how you see -- how you see that ramping up? Already we've seen this year TSMC started it, but then next year it does seem to be getting very strong Logic orders. So do you expect that Memory will follow in that sort of way when Memory adopts EUV?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, to answer your last question, I think Memory will follow, but I think that the insertion timing of EUV for Logic customers is much closer to each other, where you could say that difference of insertion is a year, year and a half max. Whereby, I think with DRAM, it could be a bit longer. And so I think, yes, you will see this trend, but it will be -- but it will definitely be, let's say, more spread out over time where I -- just like I said on the answer of the previous call -- of the previous question that one of those other Memory makers or DRAM makers is closer to the leader and other one is following at more distance. So it will take more time before all players in the DRAM market are EUV users as opposed to the Logic market where that all happens within let's say a 12-month time frame.

So on the manufacturing capacity, what needs to happen, I don't think -- our current plan is that, with the focus of cycle time reduction, that's what it is, we can probably push our capacity in the supply chain and at ASML to run 50 systems. Now I'm not going to say that

is going to be there next year, but next year we will be over 40. And our final plan is that with the cycle time reduction and production efficiencies, we should be able to push with the current square meters that we have and then perhaps a few more people, then we can push it to 50 units.

Q - Sandeep Deshpande {BIO 3869012 <GO>}

Thank you.

Operator

Next question is from Mr. Adithya Metuku. Please state your company name followed by your question.

Q - Adithya Metuku {BIO 17642884 <GO>}

Yes. It's Bank of America Merrill Lynch. First question is really on the EUV gross profit margin in the quarter. I just wondered if you could give us some color on what the margin was in 3Q and what you expect this to do into 4Q? And then just any color on the ramp into 2020 as well? I know you've given the number for the full year, but then how should we think about the cadence? And my follow-up is on the CapEx, you previously said that annualizing the 1Q number would be a good proxy for CapEx for this year. Is that still true and how should we think about that into next year? Thank you.

A - Roger Dassen {BIO 15064806 <GO>}

So on the gross margin for EUV in Q3, I think we said that for the full year, you would look at the full year around 30%. For Q3, you are looking at slightly under 30%, for Q4, you're looking at slightly over 30%. That's the way to look at it. Again, we should bear in mind that in Q4, we don't get the full benefit of the pricing of the 3400C because of what we discussed earlier on, which is that they are not yet in final configuration, so you will see for 2020, that there is more potential there. And that added to what Peter was discussing which is a reduction of cycle time all those are the factors that will ultimately drive EUV system sales to the 40% then -- and above that that we've discussed earlier on.

In terms of -- in terms of CapEx, I think the CapEx number that you've seen for the first quarters, I think you will see a slight increase in that for the fourth quarter. So -- and so for the full year, you're going to see approximately EUR800 million to EUR900 million of CapEx. For the next -- for one or two years thereafter, you might see similar levels of CapEx, because as we have pointed out before, we are at a point where we are re-accelerating the development of our High NA and of course that will lead to building of clean rooms that will lead to significant investments that we're making together with Carl Zeiss. We're building a logistics center, so we have -- we're really preparing for sort of the ramp of both Low NA EUV, but also for High NA. So we will see that for, let's say, another two years. And then gradually you will see that the CapEx levels as a percentage of sales will develop to the kind of 3% that we've modeled for 2025. So I think that's the way to look at it. So a few years of significant investment and then getting to a more steady state into 3% that we've indicated for 2025.

Q - Adithya Metuku {BIO 17642884 <GO>}

Thank you.

Operator

Next question is from Mr. Robert Sanders. Please state your company name followed by your question.

Q - Robert Sanders {BIO 19087450 <GO>}

Yeah, Deutsche Bank, again. Yeah, I just had a question on the DUV sales in 2020, and how are you thinking about your year-on-year growth rate in 2020 given the kind of ongoing uncertainty in Memory and the substitution of immersion for EUV with your Logic customers?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, well, I think on -- that substitution has happened with the intake of the orders, but that's our plan. So that was not a big surprise. And I think on the Deep UV sales, it is always -- it will not be driven by Logic, because Logic is pretty strong. Deep UV sales and the trend of Deep UV sales will be driven by the timing of the recovery of the Memory market. So I think what we will see in Deep UV sales as a -- it will happen. I'm pretty confident that the Memory rebound will happen in 2020. It's just a matter of when. But if that's the case, then I would see a improvement of the Deep UV sales profile throughout 2020. To what level, really depends on the timing of the recovery.

Q - Robert Sanders {BIO 19087450 <GO>}

Got it. And just one follow-up for Roger. What is the actual gross margin you're going to be getting on the per wafer services model for EUV when those two get in production. I mean, excluding any pro bono stuff you're doing for early-stage customers, I mean, just the per wafers margin on the services revenue, the EUR5 million to EUR6 million plateau. Thanks.

A - Roger Dassen {BIO 15064806 <GO>}

Rob, what we're looking at for the end of 2020, we're looking at breaking even on the gross margin for EUV services. As you know and as we've talked about before, this year we have a mismatch, because on the one hand we have significant costs of helping our customers prepare for high volume manufacturing whereas the service revenue is based on wafer output, which of course is only kicking in gradually this quarter and the last quarter at a very low -- at a very low pace. Of course, that will rebalance itself in the course of 2020. So at that stage we will get them balanced and then from 2021 onwards we will see a significant positive development in the gross margin development of EUV service sales.

Q - Robert Sanders {BIO 19087450 <GO>}

Great. Thanks a lot.

Operator

Next question is from Mr. Pierre Ferragu. Please state your company name followed by your question.

Q - Pierre Ferragu {BIO 15753665 <GO>}

Hey, thank you. It's Pierre, New Street Research. So I do like to maybe check with you where we stand in the ramp of EUV in Logic in terms of penetration in the node that are rolling -- being ramped up now and the next generation that is going to be ramping up, maybe in one or two years from now. And my question is, if you sell like x number of tools or x number of layers in the 7-nanometer -- 7 plus node, what kind of number of tools or what kind of number of layer should we expect in the next generation more like the 5-nanometer or 5 node?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, thank you. When you look at the 7-nanometer node, I mean, we said this before, on average layers catch about 10 layers, yeah, that's on average and then with different customers we have different layers. But the average, if you take 10, you're probably -- you're right.

When you go to the next node, which would be the 5-nanometer node, you should look at doubling it, yeah. So it -- this is about the main rule that you can use. But again, it depends on the customer architecture. Some could be a bit lower, other could be a bit higher, but if you take 10 and then double it to 20, then you're probably on the safe side.

Q - Pierre Ferragu {BIO 15753665 <GO>}

Okay, right. Thank you. And then if you think about it in terms of how you transform -- translate that into the rough [ph] revenue for you sales, then we need to take into account the improvement of your productivity in tools and then increasing prices, but is that safe to assume that very roughly the revenue you'll get, let's say, on the payer layer basis, very, very less, is about the same between the first 10 layers and the next 10 layer has been producing 5-nanometer or would you have like an increase in the value of layer for you?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think, you know it is not simply a function of volume. It's also a function of the value. So when we look at our roadmap, the roadmap is really driven by the productivity of our tools and we are still focusing on improving the next-generation point we see an EUV tools in terms of productivity, so that will be a higher value. And then also, it's not only that, it is also the more stringent and more -- let's say, more aggressive on product overlay numbers that are also going to provide a lot of value to our customers. So it is a combination of both those two. So the growth of the sales number will not only be a function of the volume, but definitely also volume times the value increase and the value increase will be driven by the things I just said, it's productivity and overlay.

A - Roger Dassen {BIO 15064806 <GO>}

And specifically the way to look at it, if you want to model it, at the current technology and the current throughput numbers that we have typically one layer, it translates for up to 45k wafer start translate into one tool. That's the way to look at it. But then exactly as Peter said, to the extent that you get throughput improvements, then obviously you need to do the math, how that translates into a reduction of that.

A - Peter Wennink {BIO 1852674 <GO>}

And the -- you have to realize it's all about cost. So if you have a machine that has a higher throughput and that throughput is recognized by the customer, that also means that the breakeven point between the multiple patterning layer and an EUV layer comes closer and closer, yeah. So we will see with higher productivity, higher uptime, the better non-maturity of the tool -- the better overlay -- then I think you're all right to just basically transfer most of the flattening layers into EUV, that's also a thing to consider and that's something we will figure out in the next two to three years.

Q - Pierre Ferragu {BIO 15753665 <GO>}

Okay. Very clear. Thank you so much.

Operator

Next question is from Mr. C.J. Muse. Please state your company name followed by your question.

Q - C.J. Muse

Yes, thanks for taking the question. C.J with Evercore ISI. I guess, first question, if I go back to your commentary in early September around Memory, you were talking about an increase in utilization and giving some comfort to a recovery, whereas, I think the language here seems a little bit more, I don't know, conservative, and so I guess would love to hear if anything has changed in your Memory outlook over the last month or two. And then, as you think about a recovery into 2020, if you could parse how you're thinking about NAND versus DRAM given that your intensity on the NAND side is so much less than the DRAM side?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think you're absolutely right on the last point. I mean, it depends -- and I think it was an earlier question, what do we think is going to rebound first in NAND or DRAM and I answered that by saying, we don't know. But it's true, if NAND ramps first, the little intensity in NAND is lower than in DRAM. At the other hand, it's very difficult to predict which one will move first. On the increase in utilization, we have actually said -- in terms of the utilization, what we have seen is that -- that the utilization numbers have stabilized and it's just a matter of to see how DRAM pricing will recover, how inventories that are in the chain, how inventories will be in and up and will be absorbed over what time period, then customers will start to utilize the tools even at the higher level before they start putting in orders for the wafer fab equipment.

I think it's the -- it's the utilization leveling that we have seen, which is always good, and we talked about it in that context, but then it doesn't tell you anything about the end market yet. So that is a matter of people buying more bits. And with reference to what I said earlier in our 2020 model, which was the scenario modeling that we did, we assume for 2020 a 20% bit growth in DRAM and 40% in NAND, this is not where we are today. Now that doesn't tell us anything about next year, because it could change and it probably will and it very likely will. But to what extent will it then grow in 2020, that's something we just have to wait and see. And like I said, even I would suggest we all look at the pricing levels of those devices and take that as early indicator of what's going to happen.

Q - C.J. Muse

That's very helpful. My follow-up, you talked about not achieving your target at least on the near-term buyback plan. I guess, is the reasoning there that investing in High NA and multi-beam and that's the reason why for the push. And then as a follow-up to that, your target model for 2020 was 410 million shares and we're sitting here today at 422 million. Do you think the buybacks that you have planned into 2020 can get us to that target model level? Thank you.

A - Roger Dassen {BIO 15064806 <GO>}

C.J., a couple of reasons for the share buyback program and the delay in execution thereof, if you like. So one, we should not forget that we also introduced an interim dividend and of course we can only distribute the euros once, right. So that is one key element. You're right, CapEx, and we talked about CapEx is significant, that's another driver. And also the further ramping of EUV and also the fact that we're pretty back loaded this year in terms of sales, I mean, all of that contributes to a free cash flow pattern this year, which is a bit of an anomaly and that's -- so that's combined with the interim dividend, I think that created the circumstance that we just described. Tempting, what you do to ask us to make any projections on the share buyback program in the 2020, we're going to do that in 2020, and in 2020 we will announce what the share buyback program will look like at that point.

Q - C.J. Muse

Thank you.

Operator

The next question is from Mr. Andrew Gardiner. Please state your company name followed by your question.

Q - Andrew Gardiner {BIO 7137663 <GO>}

Thank you. It's Andrew Gardiner from Barclays. A bit of a -- if I could start with a follow-up actually to one of the earlier questions on layer count. Peter, in your prepared comments as well you sort of referenced the performance of 3400C and sort of talked about your customers being -- having greater conviction in the tools operation and therefore layer count going up. So when you talk about sort of 10 layers on average at 7-nanometer,

doubling to 20 at 5-nanometer, can -- that has been a moving target higher, 7-nanometers relatively fixed at this point. But as we look at the 5-nanometer, is there still the opportunity for that to go higher? What are you hearing from the customers in terms of those trend?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think it's a good question. Of course, our planning of the number of layers that we'll use in EUV is also based on the assumption that we share with our customers, our customer share with us. And you should not forget that there is always a level of conservatism in there. You have to -- when you have a tool, let's say, two years back and we talked about layers of 7-nanometer and of course they looked at those layers as the absolute necessary layers that needed EUV. And over time, when we got more confidence and customers got more confidence on the EUV as a production technology, then layer count went up, they gradually went up. It is logical, because you get more confidence and that means your level of risk taking is also different, which I think will also be true for 5.

When you go to 5-nanometer and we would -- and we will execute on our productivity improvement plans, we will execute on our uptime plans, we will execute on the plans that we have for the improvement of our own product outlay. When you look at that and we do this and customers will gain more confidence over time and obviously in 2020 on the use of EUV in high volume production and we execute on our plans, I see a trend, similar to what we saw on the 7-nanometer is that the number of layers might go up. And that would be quite logical, because all are net of cost. So, yes, there is definitely a fair opportunity.

Q - Andrew Gardiner {BIO 7137663 <GO>}

Okay. Thank you. And Roger, if I could follow-up just on OpEx. So it's been creeping higher through the course of the year for a number of reasons, but we still got those 2020 targets that you set out around this time last year is looking increasingly harder with each passing quarter to get in particular on the R&D side the sort of 14% of sales number. Can you just give us a better sense as to how we should be thinking about your OpEx plans into next year relative to that? Thank you.

A - Roger Dassen {BIO 15064806 <GO>}

Sure. So on the SG&A side, I think the 4% that we've modeled that -- I think that's still what we're targeting for. So I think that's probably still the right number to go for. In terms of R&D, I guess, the way to look at it is, this year we're probably going to end approximately $2 billion, that's the R&D number that we're looking at for this year. I think if we look at the capacity -- capacity that we have today after the significant increase in capacity in terms of number of people that we have in the R&D department, I think we're now at a stage where we say that's the right capacity to have for the -- at least for the near-term development plans that we have. We talked about the acceleration for Low NA, we talked about High NA, we talk about multi-beam, we've talked to you before about, for instance, the people that we hired as a result of the Mapper transaction for multi-beam.

So I think at this stage, we're comfortable with the people that we have. So for the foreseeable future, I think what you're looking at is that the capacity is okay and therefore for the years to come, you will primarily see an increase, that is, let's call it inflation related, but the capacity that we have today, we think will do it for the foreseeable future.

Q - Andrew Gardiner {BIO 7137663 <GO>}

Okay. Thank you both.

Operator

The next question is from Mr. Alexander Peterc. Go ahead please.

Q - Alexander Peterc {BIO 1805877 <GO>}

Yes, hi. This is Alex Peterc from SocGen. Just a few follow-up questions. Could you be more specific on what's the final configuration of C machines that you're currently shipping means exactly in terms of throughput. And I suppose there will be later upgrade within this sort of payments from customers. That's the first one. And the second question is really more on the DRAM layer side. I understand that in 1z that there is only one EUV layer for now being planned, but I guess the 1 alpha generation will be -- will be more fruitful for you. So how many layers do you plan for the next generation DRAM? Thank you.

A - Roger Dassen {BIO 15064806 <GO>}

Yes, so on the throughput for the 3400C, as we said before, for the machine, it's 170 the throughput, which again is more than 30% uptick from the 125 that we had on the B machines. The changes that we're going to make to the machines that are -- that are out in the field now both for this quarter and for next quarter, in essence they're not really related to throughput, they're more related on the availability of the tool, so -- because it's all related primarily to the modular vessel and that is not so much a factor if you like in throughput, it's a factor in the availability. Now we expect that that will be done -- that will be done next year.

In terms of upgrades for the 3400B machines, we do have number of upgrades available for 3400Bs do not exactly get into the same throughput level for 3400C, because that would mean swapping of LANs, which wouldn't make economic sense. But we do have a number of upgrades available to customers that they can choose from that would -- that would substantially drive up the performance over 3400B machine.

Q - Alexander Peterc {BIO 1805877 <GO>}

A 20%?

A - Roger Dassen {BIO 15064806 <GO>}

Yeah, about 20%.

A - Peter Wennink {BIO 1852674 <GO>}

Yes on the -- and on the DRAM layer count, yes, I mean, on 1z is one layer, on 1 alpha -- also what is true for Logic is also true for DRAM. I think it's -- throughput is in -- and you know DRAM is more cost sensitive in a sense, so higher throughput to more attractive. It could be to replace with multiple patterning layers with EUV. So that is one thing. And the other -- and also what we are seeing is that device performance in DRAM is also very much favorable when it comes to these critical layers for EUV. So now, 1 alpha is not in HVM yet as you know. So that's still in, you could say, that is still in the development phase. But currently, we are looking at three to four layers. So I mean, we've been surprised getting some feedback on the reasons why customers want to move with DRAM in -- sorry, with EUV in DRAM. And one of the reasons, there is not so much the current productivity, but it is the device performance that you get when you use EUV as compared to Deep UV. So currently three to four layers. But like I said, it's in the development stage. So we don't know what is still in there when we really get to a maturity level. So let's wait and see, but I think that would be a safe bet.

Q - Alexander Peterc {BIO 1805877 <GO>}

Very clear. Thank you very much.

A - Skip Miller {BIO 20244900 <GO>}

We have time for one last question. So if you are unable to get through on this call and still have questions, please feel free to contact ASML Investor Relations department. Now, operator, may we have the last caller, please.

Operator

The last question is from Mr. Amit Harchandani. Please state your company name followed by your question.

Q - Amit Harchandani {BIO 16134002 <GO>}

Thank you. Good afternoon all. Amit Harchandani from Citi and thanks for letting me on. Two questions if I may. Firstly, maybe for Roger. When we look at -- you touched upon the free cash flow development earlier, and when we look at the change in assets and liabilities over the first nine months, it does seem significantly more negative than in previous year. I would assume that has to do with the EUV ramp, but could you give us a sense for how you think free cash flow development might shape up going into next year. So any thoughts in terms of how we should model that would be appreciated.

And secondly, if I may, going back to the 23 orders, I just wanted to understand the thought process in terms of customer discussions, clearly a large number. Do you think the customer has gone ahead and placed this order because they are worried that EUV is accelerating and they might fall behind in the queue? You think it's a one-off, is it a sign of maturity? Just trying to understand what's led to the customer go ahead and place such a large order at this stage? Thank you.

A - Roger Dassen {BIO 15064806 <GO>}

Amit, thank you. I'll take the free cash flow question, and Peter will take the customer question. So on the free cash flow, I think it's actually a combination of things. I think rightfully you point at the continued EUV ramp, that's definitely the case. I mean, the way EUV is ramping and it does lead to a free cash flow anomaly as I called it. So therefore, you would expect at some stage for that to -- for that to normalize. And also given where we are today, we are talking to our customers to look at different models and also in terms of prepayment there and down payments there. So that's what we're addressing and I think given the level of maturity that we currently have on the products, I think that is -- that's the right way for us to go.

Secondly, as we've all seen, this year is very much back-loaded in terms of sales and obviously that also results in a situation where free cash flow is following in an ominous pattern. So if both of those issues are addressed, I would expect that next year you're going to see a cash conversion which is much more natural than what you've seen in this -- end of year this year.

A - Peter Wennink {BIO 1852674 <GO>}

Yes, on the question for -- on the customer orders and why so large now. And you mentioned, is it fair that they are going to end up in the back of the queue. I think customers are -- the way we do interact with our customers and the transparency that we give them on our manufacturing capability, on our manufacturing plans, I don't -- I don't think that give rise to a lot of fear. It is really driven by the fact that the customers have figured out that in the devices that they want to make, whether it's 7-nanometer or whether it's DRAM 1z products, that the performance of EUV layers and the productivity that they can now count on gives them the confidence that this is the way to go, yeah.

And so this is -- this is the first question that they will internally answer and they will share that with us. And then they come to the next question and say, and then how much do we need and what is available. Yeah. And then of course, it's a -- almost a public knowledge where that -- what our capacity is. It's -- and EUV is very complex technology and they also know that we are ramping supply chain that from time to time might be a bit later, a couple of weeks late as we have seen at the end of this year. So this is the order.

Why do they come? They come because they know that EUV will provide you with the solutions that they need and is going to provide a significant value. And if you listen to customer statements, then you can actually get-go information of that. And then of course, they come to us and we're very transparent on our capacity and say, fine, this is the EUV performance, this is our wafer start ramp plan and this is the number of tools that we need. Yes, you are capacity limited, let's put the order. It's in that order and not the other way around.

Q - Amit Harchandani {BIO 16134002 <GO>}

That's very helpful, Peter. And thank you, Roger.

A - Peter Wennink {BIO 1852674 <GO>}

You're welcome.

A - Skip Miller {BIO 20244900 <GO>}

Now, on behalf of ASML, I'd like to thank you all for joining us today. Operator, if you could formally conclude the call, I'd appreciate it. Thank you. Operator? This concludes the ASML -- go ahead.

Operator

This concludes the ASML 2019 third quarter financial results conference call. Thank you for participating. You may now disconnect.
