

Y 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 of Investor Relations

Other Participants

- Achal Sultania, Analyst
- Adithya Metuku, Analyst
- Aleksander Peterc, Analyst
- Alexander Duval, Analyst
- Amit Harchandani, Analyst
- CJ Muse, Analyst
- David Mulholland, Analyst
- Janardan Menon, Analyst
- Joseph Michael Quatrochi, Analyst
- Krish Sankar, Analyst
- Mehdi Hosseini, Analyst
- Mitch Steves, Analyst
- Sandeep Deshpande, Analyst

Presentation

Operator

Thank you for standing by. Welcome to the ASML 2019 Fourth Quarter and Full Year Financial Results Conference Call on January 22, 2020. Throughout today's introduction, all participants will be in listen-only mode. After ASML's introduction, there will be an opportunity to ask questions. I would now like to open the question-and-answer queue (Operator Instructions).

I would now like to turn the conference call over to Skip Miller. Please go ahead, sir.

Skip Miller {BIO 20244900 <GO>}

Thank you, operator. Welcome everyone. This is Skip Miller, Vice President of Investor Relations at ASML. Joining me today from ASML's headquarters in Veldhoven, in Netherlands is ASML's CEO, Peter Wennink; and our CFO, Roger Dassen.

The subject of today's call is ASML's 2019 fourth quarter and full year results. The length of this call will be 60 minutes and questions will be taken in the order they are received. The call is also broadcasting live over the Internet at asml.com. A transcript of management's opening remarks and a 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 Q4 and full year 2019 annual results conference call.

Before we begin -- we begin the Q&A session, Roger, and I would like to provide an overview and some commentary on the fourth quarter and the full year 2019, as well as provide our view of the coming quarters. Roger will start with a review of our Q4 and full year 2019 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. Thank you. Roger?

Roger Dassen {BIO 15064806 <GO>}

Thank you, Peter, and welcome everyone. I will first highlight some of the fourth quarter and full-year financial accomplishments and then provide our guidance for the first quarter of 2020. Q4 results were basically in line with our guidance. Net sales came in at EUR4 billion, net system sales of EUR3.1 billion was heavily weighted towards Logic at 83%, with the remaining 17% from Memory, clearly showing the continued strength of Logic business as well as the ongoing digestion phase of the Memory business.

We reported EUV system sales of EUR922 million from 8 shipments. Installed Base Management sales for the quarter came in at EUR906 million. Gross margin for the quarter was 48.1%.

Overall operating expenses came in above our guidance with R&D expenses at EUR516 million, and SG&A expenses at EUR148 million, Higher than guided SG&A is due to additional employee benefit costs and costs related to our IT and presentation [ph].

Turning to the balance sheet, EUR186 million worth of shares were repurchased in Q4. We ended last quarter with cash, cash equivalents and short-term investments at a level of

EUR4.7 billion. This amount is significantly higher than anticipated with most of the cash coming in the December period.

Moving to the order book, Q4 system bookings came in at EUR2.4 billion including EUR1.1 billion for 9 EUV systems. Logic order intake was 79% of the total value with the remaining 21% from Memory, again reflecting the continued strong Logic demand for leading edge lithography. Net income in Q4 was EUR1.134 billion, representing 28.1% of net sales and resulting in an EPS of 2.70.

For the full year, net sales grew 8% to EUR11.8 billion. The installed Base Management sales was EUR2.8 billion, which was a small increase compared to previous year. In 2019, we booked EUR6.2 billion of EUV orders, which is more than 50% of the total bookings value for the year reflecting customer strong demand for EUV technology.

We continue to invest in the future of ASML and increased R&D spend to EUR2 billion in 2019. The increase was primarily driven by the acceleration of our EUV roadmap, Low and High-NA program. Overall R&D investments as a percentage of 2019 sales was about 17%, SG&A was about 4% of sales.

In addition ASML invested EUR886 million in CapEx, supporting our long-term growth opportunities, primarily around High-NA capacity and infrastructure. Net income for the full year was EUR2.6 billion resulting in 21.9% of net sales and an EPS of EUR6.16.

With that, I would like to turn to our expectations for the first quarter of 2020; we expect Q1 total net sales between EUR3.1 billion and EUR3.3 billion. We expect our Q1 Installed Base Management sales to be around EUR950 million, driven by a strong demand for field upgrades, especially EUV. Gross margin for Q1 is expected to be between 46% and 47%. The lower gross margin relative to the strong Q4 number is primarily due to DUV mix effect, fewer immersion and more drive systems with some positive EUV mix effect.

The expected R&D expenses for Q1 are around EUR550 million, and SG&A is expected to come in at around EUR140 million. Our estimated 2020 annualized effective tax rate is around 13%. Regarding our capital return, ASML paid total dividends of EUR1.3 billion, made up of the 2018 dividend and 2019 interim dividend and purchased EUR410 million worth of shares in 2019.

Through December 31, 2019, ASML acquired 9 million shares under the 2018-2019 program for a total amount of EUR1.6 billion. Supported by our long-term business plan ASML will submit a proposal at the 2020 Annual General Meeting of shareholders to declare a dividend for 2019 of EUR2.40 per ordinary share. Recognizing the interim dividend of EUR1.05 paid in November 2019, this leads to a final dividend of EUR1.35 to be paid in the second quarter. This is a 14% increase compared to the 2018 dividend. The 2020 Annual General Meeting of shareholders will take place on April 22 in Veldhoven.

ASML announces a 3-year share buyback program of up to EUR6 billion, to be executed in 2020 through 2022. ASML intends to cancel these shares after repurchase with the exception of up to 0.4 million shares, which will be used to cover employee share plans.

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

Peter Wennink {BIO 1852674 <GO>}

Thank you, Roger; as Roger highlighted, we had a very strong quarter resulting in another solid year of growth, driven by Logic and EUV. We were able to achieve an 8% topline growth, despite an overall industry decline of around 10% due to a weak Memory market. There's always a reflection of our Logic customers drive to continue to innovate and invest in technology for future nodes. For 2020 we currently expect a year of double-digit growth in both sales and profitability, primarily driven by EUV and installed base business.

Major innovation drivers such as artificial intelligence, 5G, high performance compute, autonomous driving and big data are creating new end user applications. These applications require more high-performance Logic fueling increased demand for leading edge nodes, and this is evident in several customer announcements regarding ramp plans with the 7 and 5-nanometer nodes, which will drive another strong Logic year and an increased demand for EUV.

In the Memory market, the customers have indicated they're seeing signs of demand recovery in some market channels and improvements in Memory Chip pricing also support this view. As customers have lowered litho tool utilization to reduce wafer output throughout the weak memory demand period they will first use this underutilization to return to normal supply levels which will take some time.

Subsequently, this will also trigger equipment demand, albeit a bit later than the supply demand recovery for memory devices. But taking the slope of the recovery of our litho equipment utilization as a proxy, it seems likely that we will see stronger litho equipment demand for Memory in the second half of the year.

We expect significant growth in our installed base business, our service business will continue to scale, as our installed base grows and we will also see EUV contribute to service revenue as these systems start running wafers in volume manufacturing now. We expect significant demand for upgrades, particularly in EUV, as customers utilize upgrades as a quick way to increase capacity. In EUV it was a breakthrough year with the technology now starting in high volume production and producing consumer products that are already available in the market.

As we continue to execute on our accelerated EUV roadmap, we are able to ship our first NXE:3400C in 2019, which provides higher productivity translating to increased customer value, delivering higher ASPs and improved gross margins. We shipped 6 3400C systems in Q4 of the 8 EUV systems total we shipped in the quarter, bringing the total to 26 EUV systems and the full-year sales of around EUR2.8 billion in 2019.

Increase in customer confidence in EUV is translating to more layers in Logic production as well as expanding to new markets with the adoption in Memory. For full year 2020 we plan for EUV sales of around EUR4.5 billion on 35 systems. We continue to see demand building for next year shipments and expect a healthy order flow to continue. In order to

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fulfill the expected strong demand increase, we're working on the cycle time reduction to enable the capacity of 45 to 50 systems next year.

2021 [ph] is shaping up to be a very busy year. Regarding our current outlook for the year, we expect 2020 to be another growth year as mentioned before. Although it's too early to provide quantitative expectations, let me make a few qualitative comments. Major innovation drivers and applications that require high performance Logic are driving increased demand at the advanced nodes. Logic demand is currently strong and we expect this demand to remain healthy, primarily driven by EUV.

As previously communicated we expect the sales of EUR4.5 million on 35 systems this year, which translates to EUV sales growth of approximately 60%. Memory is showing early signs of recovery, and although there is still uncertainty around the exact timing of the recovery it is likely we will see stronger demand for the second half of the year and taking this into account, we expect stronger second half with strengthening sales throughout the year.

Certainly 2019 was another great year with continued positive momentum in EUV, as well as strong demand across our entire product portfolio. We expect another growth year supported by healthy Logic demand and likely recovery of the Memory market with increased sales from our installed base business as well as demand for EUV.

The positive industry momentum around innovation and expanding new markets further strengthens our confidence in 2021 outlook and our 2025 growth scenarios.

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

Skip Miller {BIO 20244900 <GO>}

Thank you, Peter, and Roger. The operator will instruct you momentarily on the protocol for the Q&A session. Beforehand I would like to ask 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

Yes, thank you. At this time we will begin the question-and-answer session. (Operator Instructions) One moment please for the first question. The first question comes from Mehdi Hosseini. Please state your company name followed by your question.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

Yes, sir. Thanks for taking my question. My question has to do with your comment regarding EUV manufacturing capacity of 50 system by 2021. Peter do you think your

backlog would reflect that capacity as we progress through the year? In other words would you be able to have a full commitment from your customers for full capacity. And my short follow-up has to do with your -- the multi-beam EUV wafer inspection. Are we still on target for the first shipment in the first half, and how should we think about the time it would take for your customers to evaluate the tool?

A - Peter Wennink {BIO 1852674 <GO>}

Okay. Mehdi, thanks. On the EUV capacity, yes, I think the backlog will reflect this. I think the order intake on the EUV is looking very healthy. So I have little doubt that we will have the backlog filled this year to support the capacity that we have lined out now for 2021. I think the issue here is really we need to reduce the cycle time, which we have good plans for. I mean we see first progress. I think the focus is on cycle time reduction in this case.

And B, multi-beam inspection. Yes, we will ship in the first half and I think the customers will probably take throughout this year to evaluate the tool, so that we can start shipping next year in higher volume.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

Great, thank you.

Operator

The 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 Dave Mulholland from UBS. Just two follow up on some of the comments you made around Memory. Obviously there are some indicators things are improving. I think some of the checks we've been doing through the supply chain are certainly pointing to improved capacity plans particularly potentially from Q2. When do you think you could start seeing that in orders? And I guess in some respects, why haven't we already seeing some of that in Q4 and then I'll come back with a follow-up.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, thanks David. I think it's a good question. I wish I had a definite answer because that will make things easier. We are basically saying we are -- when I said in my prepared remarks that we see the utilization of our tools going up and we just extrapolate the slope of utilization increase and I think it would mean that in the first half of this year we will see likely a return to a normal supply-demand balance for our customers. Now they see that also and taking into account the order delivery times, the order lead times. Then I would expect orders, have to come in somewhere in Q2 in order for us to make sure that in the second half of the year, we should -- we could see an increase of our Memory business.

Again we're in this business for quite a long time and in my experience Memory always comes back with a vengeance. They -- when it comes, it always comes quick. So we'll just

have to wait. So I think it makes a big difference, whether orders come back in Q2 or they come back in Q1 or in early Q3. I mean, it makes a big difference for the year.

So we have to wait and see and I wish I had a final and definite answer.

Q - David Mulholland {BIO 16819172 <GO>}

And just one second follow up on the Installed Base Management business, obviously very strong run rate in Q1 at EUR950 million. How do you think about this on a full year basis. And in the past you'd had a target, I think of EUR3.7 billion, but been slightly more conservative run rate through the last couple of years. What's driving the pickup in Q1. How should we think about that on a full year basis.

A - Peter Wennink {BIO 1852674 <GO>}

David, I think the -- if you look at the Q1 and also if you look at Q4, you see that the momentum was already building up in Q4 where we were already were slightly over EUR900 million, EUR950 million for the quarter. We expect that we will not be able to sustain it at this level for the entire year. I think a good way to go would be to say that we're probably going to see a 20% increase over last year annualized. So that would get you to approximately EUR3.4 billion for the year. That's where we would see it for the full year.

Q - David Mulholland {BIO 16819172 <GO>}

That's great, thanks very much.

Operator

The next question comes from Mr. C. Muse. Please state your company name followed by your question.

Q - CJ Muse

I'm C.J Muse with Evercore ISI. Thanks for taking the question. I guess first was hoping to hit on gross margins. Can you walk through where we exited on EUV In the fourth quarter and then how you are seeing the trajectory for overall gross margins through the year, on account of [ph] increased EUV shipments as well as likely higher immersion shipments in the back half for DRAM.

A - Roger Dassen {BIO 15064806 <GO>}

Yeah. Thank you, CJ. So let me first talk about gross margin for EUV and then give you the wider picture on gross margin. So on EUV, what we said, as you know last year on the systems side, systems gross margin for EUV, we're looking at about 30%. This year we're looking at about 40%, 4-0. So that's what we have in the plan, and that's what we're executing for and that's also in our models for this year.

On the wider picture for gross margin and I know that many of you are looking at the Capital Markets Day, at the Capital Markets Day we mentioned 50%. So let me start there,

let me start at the 50% and let's look at what the circumstances were at the time, what the circumstances are today and then we will start talking about how we see this unfold and what the potential is that we see for this year.

So back in November, at the Capital Markets Day in November 2018 I think there are three things that we should bear in mind. First off, at that stage what we modeled at that stage for you and that had the 50% in there was what we called a mid-market growth scenario.

And I think in all likelihood if we look at the circumstances today, if we look at the circumstances of the Memory market today, then I think it will be hard to say that for the full year, we're looking at a mid-market scenario. It's definitely not what we're looking at today depending on when it's going to come back. And as Peter said how it's going to come back. You could still on average, see a mid-market scenario, but at this stage, I think it's hard to say that we're looking at a mid-market scenario for that at this stage the Memory market in these months is fairly flat. So that's one important circumstance, I think to recognize.

The second thing that I think changed from November 2018, and I think Peter already responded to that in the first question is the multi-beam. So the delay in the multi-beam, where I think we're going to see commercial application and commercial sales of multi-beam only in 2021, where at the Capital Markets Day, as you know, and as we already told you also last year, we were still looking at for 2020 as commercial application of multi-beam. So that's in essence shifted with a little under 1 year. So that's the second sort of thing [ph] to bear in mind.

The third thing that deviates a little bit from what we told you in the Capital Markets Day in November 2018 is a bit of accounting issue and that has to do with the High-NA. We are preparing for High-NA not just on the R&D side, but we're also preparing for High-NA on the manufacturing side and on the supply chain side and we are incurring cost there that we cannot capitalize and have to run through cost of sales, which is a bit weird because we're not selling High-NA but nonetheless, that's what the accounting rules dictate you to do and that represents a little short of 1% alone in gross margins.

So those are three things to bear in mind that might be different from the perspective and the model that existed in November 2018. So now let's look at this year and let's look at the 46% to 47% that we have for Q1 and let's look at the potential for the rest of the year. I think there is a number of drivers in there that I think could further drive the gross margin up.

The first one obviously is related to the situation in the memory market and that is pretty important, not just for the top line, but it's also very important for gross margin because if we see a solid recovery in the second half of the Memory market that will have a significant impact on the sale of immersion tools, which as all of you know comes with pretty high gross margin and also with a good recovery in our voltage contrast business, which as you know, is also very much tied to the Memory business, and again, that is a very high margin product that we have.

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So if we get the recovery in the memory market that will also have a significant impact on the gross margin on those two elements alone. The second element that will -- that is expected to further drive up the gross margin throughout the year is the EUV service. EUV service for the full year is still expected to be -- to have negative gross margin. But over the quarter-over-quarter, you will see a sustained improvement in the gross margin that we have on EUV service, for two reasons. First off, because as you know, with the number of customers, we have the pay per wafer model and to the extent that EUV continues to go into high volume manufacturing, obviously we got more revenue.

And secondly, the cost that we have per EUV machine goes down because we get more efficient in doing it. And we also get scale effects as a result of that. So quarter-over-quarter, you will see that the EUV service margin will improve. For the full year, it's still negative, but at least in Q4, maybe even a little before that we will see it as it starts to become a positive. A third improvement that we expect to occur in the course of this year will be the introduction of our new emerging [ph] tool. The 2050, NXE:2050 which again comes with a good improvement of our gross margin.

So those are three significant drivers that we have that we believe give us a good shot at achieving a significant improvement of our gross margin, particularly in the second half and a good shot at the 50%. And then this 50% we will be able to then sustain further into 2021 which as Peter already alluded to, we think is going to be a very busy year, and a very busy year at that stage, would also come with a number of scale benefits in our gross margin and better fixed cost coverage. And also in 2021, we would see the introduction of a successor to EUV that would also again come with gross margin improvement.

So then we think the momentum that would be created in the second half around reaching the 50% would then be further sustained and elaborated on in the 2021 time frame.

Q - CJ Muse

Very, very helpful. If I may follow up, I think the buyback announcement as we're moving into high volume manufacturing EUV seems to be a bit of an inflection here for ASML, moving into cash cow mode.

So curious if there are metrics that we should be looking at whether it's free cash flow margins or working on working capital or perhaps CapEx intensity coming down as you've invested in EUV capacity High-NA multi-beam. So I'm curious if there is kind of -- you would be looking at to gauge free cash flow in the coming years.

A - Roger Dassen {BIO 15064806 <GO>}

Yeah. And so in the short term you will see that with the increase in EUV, and EUV becoming increasingly important for the company given the cycle time of EUV, significantly longer than DUV, in the short-term you may expect that inventory levels will continue to go up a little bit. That's a dynamic on the one hand. And also in the short term as you -- as I think we've said before you might expect that the CapEx level that you've

seen for 2019. That will be above the CapEx level that you might expect for this year and for next year.

So around EUR900 million to EUR1 billion is the CapEx number that we think is likely for this year and for next year.

So those are dynamics in, I would say the short-term. In the years thereafter I expect CapEx level to level off and actually go down because then the significant preparation for our future I think CapEx wise, I think will have been done and we'll be able to go down. Also I would expect that in one to two year time frame you might expect inventory levels to go down for a number of reasons. First off at that stage we talk about 2021. There is a significant build-up of our capacity for EUV.

But once you there and once you are at those levels then the further buildup of inventory will no longer have an impact on your, inventory levels. And secondly, as we mentioned before, the way we believe we will be able to get an increase in our capacity from the 35-ish that we have for this year to the 45, 50 [ph] that we talked about the 2021 will primarily be the reduction of cycle times. Of course the reduction of cycle time, will then will kick in and further reduce working capital requirements.

So in the short term, I think the burden on working capital will still be -- it will still be there. In the longer run, so let's say 1.5 to 2 years you will see that we will be able to get it under control better. One final dynamic as far as that is concerned we talked to you in previous calls on the introduction of down payments for EUV, which we're pushing and where we have the initial accomplishments on that in 2019 and will continue to drive that and that will also be a mitigating factor, if you like in our working capital burden. So long winding answer, just to tell you that in spite of all of that -- in spite of this preparation for the growth, we're still looking at a pretty healthy free cash flow, development both this year and next year, and then the years thereafter I think the free cash flow that we generate will further increase substantially. And all of that taken together gives us more than enough comfort to introduce the EUR6 billion program for the next three years.

Operator

Okay. Next question, Krish Sankar. Please state your company name followed by your question.

Q - Krish Sankar {BIO 16151788 <GO>}

Hi, it's Krish Sankar from Cowen and Roger thanks for the detailed comments on gross margin. I had two questions, first one on EUV. So Peter, it looks like your commentary on 2020 EUV of 35 systems at EUR4.5 billion revenue in next year, about 45 to 50 systems capacity is similar to about three months ago, I was in the impression that over the last three months at the margin there was more incremental demand from DRAM for EUV.

So I'm just wondering is it an issue that you are still capacity-constrained and that's why you cannot ship more. Are you being conservative? And then my second question is, how

to think about DUV units this year relative to 2019? Would it be similar levels lower or higher, any color would be helpful.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah. On your first question, actually I tried to answer that in an earlier question, that the issue with the 2021 is to make sure that we can reduce the cycle time. So much that we can create capacity between 45 and 50 units, which is a capacity issue, not a demand issue. So, yes, DRAM will be there. We just have to make sure that we can squeeze as many EUV systems out of our available square meters, so that we can fulfill customer demand. It's not a demand issue, it's a capacity issue.

So that's why the commentary is similar to what we did last quarter, because the capacity lead time fortunately is a lot longer than just the customer order lead

Time.

Now on the DUV units, good question. Very much changes on, and as Rogers said, on the recovery of the Memory market. Yeah. So memory is still very much driven by immersion. Of course, we are seeing with the increase number of EUV systems in Logic some cannibalization because of multiple patterning schemes that will actually move on to single patterning EUV schemes now. So if you would not see a recovery of the Memory business, which I do because we do expect a recovery, clearly, the DUV units would be down, but it's really the timing of the Memory recovery that will determine how much of the DUV units, we're going to see this year. So it really hinging on the timing of the Memory recovery.

Q - Krish Sankar {BIO 16151788 <GO>}

Got it. Thank you very much, Peter.

Operator

The next question, Alexander Duval. Please state your company name followed by your question.

Q - Alexander Duval {BIO 16682293 <GO>}

Yes, hi there. I'm Alex from Goldman Sachs. I just wanted to ask, or clarify on the extra R&D and SG&A for the first quarter that you've guided to versus where the Street was. And just wondered if you could help decompose a bit, the most important drivers and sort of what underpins them. For example, to what extent it is more about investing in faster cycle times for those 50 or 45 to 50 units of 2021. To what extent is it about increasing functionality of future EUV versions as we move beyond the 3400C and to what extent does it hinge on any other key factors? Many thanks.

A - Roger Dassen {BIO 15064806 <GO>}

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So on R&D last quarter, we were at EUR516 million. This quarter, we're guiding EUR550 million, and I think the vast majority of that increase is labor cost increase. As we mentioned before, at this stage, we have the capacity that we think we need in order to accomplish the R&D objectives that we have which are all of the things that you just mentioned. That's primarily focused on the low-NA High-NA roadmap, multi-beam but also a number of developments in DUV obviously.

So we think we have the capacity that we need in order to get that done. And that's why we said on previous calls, expect going-out rate for the fourth quarter to be the basis and then obviously it needs to be, what we call inflation-adjusted, which is obviously linked to wage increases for that and that's what you see. So the 6% increase from EUR516 million to EUR550 million really is primarily at the wage increase on the R&D department.

In terms of SG&A, SG&A I think is modeled at EUR140 million, which is I think very much in line with what you saw in previous quarters. Q4 had a little bit of a spike. There were some accounting adjustments in there in Q4 that had a little impact and also in the process of implementing a new IT system which has, which has some impact on the SG&A number, but those are small things. But the guidance of EUR140 million I think is pretty much in line with what we were in previous quarters and obviously there too the wage impact.

A - Peter Wennink {BIO 1852674 <GO>}

Yes, I think on the wage, I don't think we get our people 10% wage increase because they will probably raise a lot of questions and when people start listening to this call, it's the combination of the normally inflationary wage increase and the fact that, of course, we added people in 2019. So you see the full year effect now of that growth in R&D in 2020 which actually happen throughout 2019, but now you see the full year wage affect.

Q - Alexander Duval {BIO 16682293 <GO>}

Very clear. Many thanks.

Operator

Next question is from Joe Quatrochi. Please state your company name followed by your question.

Q - Joseph Michael Quatrochi {BIO 18961101 <GO>}

Yeah, thanks. It's Wells Fargo. I had a question on the Memory side, I know that ASML's historically been more tied to DRAM and NAND. So I was hoping you could kind of help us kind of parse out the comments that you've made in terms of the recovery and seeing potentially improved bookings kind of looking into 2Q, is that more of a NAND flash comment or should we think about that from a DRAM perspective?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think if you split the DRAM and NAND, and I can only, like I said, the proxy that we have is basically looking at some utilization data. I think it is first noticeable in 3D NAND. I

also think the slope of the recovery is a bit more aggressive in NAND than in DRAM. But there are both there.

Having said that, I also mentioned in my prepared remarks that the customers who are creating underutilization in order to make sure that they could read balance of supply and the demand in the memory space sooner that underutilization correction was also deeper in 3D NAND. So was also not a big surprise that of course the return slope back up is also a bit steeper.

So -- but that's where we are. I think as we have started the bid earlier, it's a bit steeper slope, but both are trending in the upward direction.

Q - Joseph Michael Quatrochi {BIO 18961101 <GO>}

Okay, that's helpful, and then just for the March quarter guidance. I was wondering in the past you guys have given us kind of the EUV shipment and revenue expectation for the quarter. So I was curious if you could give us that for the March quarter. I know there is four shipments systems rather that are included from 2019. And then maybe just any thoughts on the cadence for 2020 just now given that the 3400C is available for the full year.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think we've indicated in the past that as soon as we really see that EUV is in essence going into high volume manufacturing and are also at a point where we can take revenue up on shipment. That would be the time we're no longer going to give separate guidance on EUV shipments. So that's clearly the case by now. So that's the reason why starting this year we no longer do that. What we do however is continue to indicate at least for 2020 for the full year we give you an indication of the euro value and also the number of units for EUV for the full year. And of course we will report quarter-by-quarter we will report to you what the euro number and the unit number of that will be.

As it relates to your second question on how is the distributed over the year, it's not completely evenly distributed. It's a little bit tilted towards the second half, but only -- but modestly so, it's not as exacerbated the if like as we had it in 2019. There's a better balance, but it is still a little bit tilted towards the second half of 2020.

Q - Joseph Michael Quatrochi {BIO 18961101 <GO>}

Thank you.

Operator

Next question from Janardan Menon. Please state your company name followed by your question.

Q - Janardan Menon {BIO 1718725 <GO>}

FINAL

Hi, good afternoon. It's Janardan Menon from Liberum. I just had two follow-ups on the Logic side, especially on the EUV front. Sorry, on the DUV front. So if I take your growth number for this year, just calculating EUV revenues alone. You're going from EUR2.8 billion to EUR4.5 billion. I'm assuming that much of that is going to be logic shipment. And so if I put that EUR1.7 billion of additional revenue, which on the Logic revenue of EUR6.6 billion last year, that's about 25% of additional growth in Logic for this year. I'm just wondering, given that DUV shipments will probably come down during the year, what kind of a decline in DUV are we looking at.

Is it 3 or 4 units in which case you will still be growing your Logic revenue there about 20% or higher or will the DUV drop you a bit more than that, and you could be sort of in the 10% to 20% range of growth on your logic side. And the short follow-up is on the EUV capacity, given that you're seeing so much of demand for EUV right now. And you're saying that in 2020 it's more a capacity issue otherwise, you probably could ship 50 units.

What can you do to add capacity further into 2022, if this kind of strength, and especially in the memory market, the DRAM market comes in more strongly for EUV in 2022 and the Logic strength continues. Is there scope to further reduce cycle time to take your unit shipments above 50, or can you use some of the base in your High-NA new facility for low-NA systems, if that were to be required. Is there ways you can go above 50 units by 2022.

A - Roger Dassen {BIO 15064806 <GO>}

Let me take the first question and then Peter can go into the second question. If you piece together the data points that we gave you, I think you can find sort of an answer to your first question.

So as Peter said in the video, we're looking at a double-digit -- double-digit growth. So if you do that math and you have a number that you arrive at and then we gave you two other important components. On the one hand, indeed as you mentioned EUR4.5 billion for EUV. And also on the call -- on this call, gave you the 20% increase over the installed base which would get you to approximately EUR3.4 billion. So then you can sort of calculate for DUV and apps combined where they would land for the year. I think that's what you're looking at.

Of course, as Peter said it will be dependent upon the timing and the extent of the recovery, but we believe that the number that you would derive in that way is a safe number to go by with some potential [ph] obviously, if the Memory recovery is significant and timing.

Q - Janardan Menon {BIO 1718725 <GO>}

Yeah.

A - Roger Dassen {BIO 15064806 <GO>}

Yes. Peter second question on the --

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, second answer on the question on the -- when you look at the EUV capacity that we currently have, and like I said, will be driven by cycle time reduction because the lead time reduction for capacity adds is longer. Yes, for 2020 -- beyond 2021, we are looking to bring the output capability above 50 now, which is what we're doing today is really looking at how much would that be.

If we have to go over 60, we probably need to extend square meters of production capacity at ASML and at suppliers which could be, like you said using production facilities that we're currently building for High-NA, use that for temporarily use in low-NA, although we'd like to prevent that because (inaudible) not and I mean, these base are different, the High-NA base are different than the low-NA base, so that mean some extra cost but if push comes to shove, you could probably do that.

But I think we can, with our probably [ph] we can go over 50, but I think it will be very difficult to go over 60. So if we have to go over 60 then we probably need to quickly add some manufacturing capacity additional at the supply chain.

Q - Janardan Menon {BIO 1718725 <GO>}

Understood. Thank you very much.

Operator

Next question is Amit Harchandani. Please state your company name followed by your question.

Q - Amit Harchandani {BIO 16134002 <GO>}

Hello, everyone. Amit Harchandani from Citi, and thanks for letting me on. A couple if I may. The first question goes back to the demand for EUV, you've talked about, obviously the capacity for 2021. In terms of the drivers of demand from your customers, what really do you think is changing or accelerating from a customer standpoint? Is it the number of layers of adoption, is it the pace of cadence down the node, is it their end customers push? Could you give us a sense for what really do you think is driving this optimism and acceleration towards the number that you've talked about for 2021 from a customer standpoint? And then I have a follow up.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I mean, the easy answer is all of the above. Yes, we are seeing increase of layer count, the fact that EUV works also gives the customer the confidence on their roadmap and when they get numbers on the roadmap, you see a cadence change. there's a push, may be a pull in. Yeah. But also I think the discussion that we're having with customers and customers having with us, although without going to very specific customer details we will never do that.

It's very clear that the number of tape-outs and the request from their customers -- our customers' customers on different types of end applications is going up. So it is basically the combination of those three things. I mean you mentioned them all and that's what it is and I think we are responding to what our customers are asking us based on those three drivers and this is why we come to the problem of or the capacity issue in 2021, then a demand issue.

Q - Amit Harchandani {BIO 16134002 <GO>}

Thank you, Peter. And secondly, if I may, could you maybe give us your latest thoughts on how you're thinking about demand from indigenous customers in China. There is obviously news flow around the EUV tool and you've commented on that very clearly. But more broadly as you think of your 2020 guidance, and 2021 things have changed a bit since November 2018. Any clarity on demand from indigenous China, the various end markets and what are baked into your assumptions right now?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think, the things of course changed, the markets changed and since November 2018. But I would say on China, we're pretty much on target in terms of the strategic roll out, especially in the memory space. In Logic and it's not so much a leading edge Logic, it's more the mature Logic Systems. I think our current assessment of the market is a bit higher than it was at 2018. So if anything at leading edge we're on plan. On the trailing edge in a more mature technology I do see -- we have seen upside, but no downside.

Q - Amit Harchandani {BIO 16134002 <GO>}

Okay. Thank you.

Operator

Next question, Achal Sultania. Please state your company name followed by your questions.

Q - Achal Sultania {BIO 17744137 <GO>}

Hi, good afternoon. It's actually from Credit Suisse. Roger maybe on EUV services' gross margins, just trying to understand like how much of headwind, it has been on at a group level in 2019. Obviously, you made a comment that it will get to, -- it will still be loss making this year. But basically we have improvement through the year.

So I'm just trying to understand how much of it has been already a headwind in '19 and then how quickly can that business ramp-up towards 40%, 45% services gross margins like you have -- most likely in DUV. Does it take two years, three years. Any color around that would be helpful.

And then secondly on the mix, when you talk about this 45 to 50 capacity for EUV in 2021, can you help us understand like obviously Logic is -- foundry is a big part of that number,

but what are you hearing from logic and DRAM customers in terms of the unit breakdown of that 45 to 50 unit number. Thank you.

A - Roger Dassen {BIO 15064806 <GO>}

Thank you. So on the gross margin impact of EUV service that was around 2% for 2019. So that's the gross net margin impact of that in 2019. As I mentioned to you we do see it coming to a positive number in the course of this year. I expect it to be at least Q4, maybe even before that, that it will turn positive.

Before we have EUV service gross margin and the corporate growth -- at the corporate gross margin level, I think we're probably two or three years away from that, but the aspiration clearly is there to have it at that stage in the time frame.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, on the split 45 to 50 units split, that kind of I'll give you -- not going to give any details, but the majority and I mean it's above the 50% is going to go to the Logic space. So we're still dominated by Logic. But clearly, the 2021 numbers for DRAM will go up, as logical. I mean we have in the Logic space we have several customers, in the DRAM space we still have one.

So that's also an issue that will drive the division between Logic and between DRAM, but we just want [ph] to be significantly above 50% is going to be Logic.

Q - Achal Sultania {BIO 17744137 <GO>}

Okay. Thank you, Peter. And Roger.

Operator

Next question, Adithya Metuku, please state your company name followed by your question.

Q - Adithya Metuku {BIO 17642884 <GO>}

Yeah. Good afternoon, guys. It's Bank of America. I had two questions. Firstly, just thinking about the memory demand as we go through this year and into next year. Obviously, when we look at the last three years going into 2018 we had a very strong increase. We had a doubling in '17 and then another 50% increase in revenues from Memory customers in 2018. Now when you look at the next two years, obviously things maybe a little different and I know it's very difficult to give a pinpoint number but I just wondered what do you have in your scenarios internally and then where do you see if Memory was to come back in 1Q, where do you see memory revenues for this year and if it were to come back in 3Q, where do you see that coming. Any color that you can give us to help us get a rough sense of where we might end up would be very helpful.

And then secondly, just a question for Roger just on OpEx. I just wondered if you could confirm whether the OpEx annualizing 1Q number would be a good proxy for the full year

or whether there is anything else we need to think about. Thank you.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think on the question on the Memory demand I did give you some indication. I can repeat myself, but when I look at the best proxy we have is to just look at how our machines are being used. That's why I said I do believe that in the first half, and it's difficult to understand, like the exact timing or to gauge the exact timing. It will be in the first half. I think our customers will come back to this more healthy supply demand balance and they will see this coming. So they will place orders. So for us it's going to be likely going to be a second half event.

But having said that, I mean 2019 was of course a weak Memory market for us and also in the first half of 2020 could be not very strong as Roger indicated, and but when I come back to second half, we will have an impact on our business, also on our financial performance. But when the Memory goes comes back, then I think you really need to look into 2021 like I said earlier, 2021, we do see strong EUV demand, I see no reason why the demand of our customers for leading edge products in the memory space, 5-nanometer will kick in then, will go down.

But when the Memory recovery starts in the second half of the year for us, is will extend into 2021. So you would then have had effectively a year and a half of a Memory downturn, which I think historically is not long but not short either. So we just -- it all seems to fit. This is the kind of color that I can give you based on -- on top of what I already said.

A - Roger Dassen {BIO 15064806 <GO>}

And Adithya on your questions on the -- on OpEx, indeed, I can confirm that what we have. So the EUR554 million R&D and the EUR144 million SG&A, those are good run rates for the quarters in this year.

Q - Adithya Metuku {BIO 17642884 <GO>}

Okay, thank you, guys.

Operator

Next question, Sandeep Deshpande. Please state your company name followed by your questions.

Q - Sandeep Deshpande {BIO 3869012 <GO>}

Yeah, hi Sandeep Deshpande at JPMorgan. Most of my questions have been answered, but just actually a clarification Peter. Firstly on whenever this Memory recovery occurs. I mean you can see how the customer utilization is doing. Your exposure to NAND is lower than your exposure in DRAM, but do you see that NAND utilization is rising faster than DRAM or vice versa at this point, because that will determine the timing of when your orders come in.

And then secondly, regarding these, the multi-beam tools that you're working on, you think at this point is the view that these will begin shipping in 2021 and thus be -- that there could be even further accretion to the margin in 2021? Thank you.

A - Peter Wennink {BIO 1852674 <GO>}

I think I will do the memory recovery. Like I said earlier with the slope of the utilization recovery, is a bit faster, bit steeper for 3D NAND. But it also come from a deeper point. So in that sense -- and yes, we have, as you mentioned, less exposure to the 3D NAND market, but the 3D NAND market needs a lot of exposure. So I mean this is what we are counting and this is we're seeing. So I think NAND, probably rising a bit faster. I think that could be the conclusion. And sorry, the second part was --?

Q - Sandeep Deshpande {BIO 3869012 <GO>}

The second part was on the gross margin and multi-beam tools.

A - Peter Wennink {BIO 1852674 <GO>}

Roger (inaudible)

A - Roger Dassen {BIO 15064806 <GO>}

Okay. Yeah, yeah. And these multi-beam as I mentioned multi-beam is expected to be a high-margin product. So to the extent that when it will go into commercial application and that is expected for 2021, we do believe that it will be accretive to our gross margin.

A - Peter Wennink {BIO 1852674 <GO>}

Roger it's not only -- if you look at the multi -- as you look at the leading tool, it's a machine but it's very much it is compute power. So there's a lot of software also. That's why margins are generally higher in e-beam space then in the lithography space.

Q - Sandeep Deshpande {BIO 3869012 <GO>}

Understood thank you.

Operator

Next question, Aleksander Peterc. Please state your company name followed by your question.

Q - Aleksander Peterc

Yes, good afternoon and thank you for taking my questions. It's Alex from SocGen. I just like to understand as you now contemplate 45 to 50 EUV units in '21 does this in any meaningful way accelerate your path to higher gross margins more closer to DUV for your EUV business overall or there's nothing changed in terms of your gross margin scenario for this business unit. And then just briefly, your comment regarding the timing of free cash flow generation. It looks like over the next three years, you will have an acceleration in free cash flow generation.

A - Roger Dassen {BIO 15064806 <GO>}

Yeah. So let's first talk about the, about the gross margin for EUV. I do believe a further increase in numbers will improve our gross margin for three reasons. One is our base price, to the extent that given the capacity that we have, we have a higher output of course your fixed -- fixed cost coverage will improve. And as we mentioned the increase in capacity will be achieved by reducing cycle time, will not be achieved by further CapEx. So that's why more units will result in gross margin improvement. That's one element.

The second element is to the extent that we have more of these tools in the field that also means that our service margin will in all likelihood improve because the number of -- the more tools we have in one location, the more efficiency we have and having our service crews there. So then the efficiency per tool will further increase. And thirdly, not necessarily related to the number of units, but since you talked specifically 2021, as I mentioned that, we'll also see the introduction of the successor to 3400C, which again we are hopeful will bring such value to our customers that the gross margin will benefit from that.

So yeah, a number of reasons why I think, why we believe gross margin for EUV will continue to further improve through 2021 and beyond. On the free cash flow question, I think that is right as well. So I mentioned to you that in the very short term the working capital burden that we have from further growing to let's say this capacity level that we talked about, will be there because you know, given the cycle time it will mean that we have to take a significantly more inventory on board to get it done. But then at a certain stage, you will see the offsetting factor of the fact that cycle time get reduced.

So I think in this one-year window, you will see a spike and then a leveling off as a result of the reduction of the cycle time. And as I also mentioned, we do want to get down payments more as the default in our commercial model and that should also at some stage lead to an offset in the working capital burden.

A - Skip Miller {BIO 20244900 <GO>}

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

Operator

Yes, sir. Mitch Steves. Please state your company name followed by your question.

Q - Mitch Steves {BIO 19155169 <GO>}

Hey, thanks. RBC Capital Markets. So most of my question is answered, but I just want to clarify a couple small points. So first of all, based on the tone of this call, it sounds like 2021 will probably be an accelerated growth year relative to 2020. I want to make sure that's a reasonable assumption.

And then secondly, and I realize you guys can't time the exact recovery of Memory but from a historical perspective, when you look at when the Memory market recovers, what type of sequential growth do you expect? Can we see [ph] initial first batch of our recovery, if I look at your Q-over-Q numbers.

A - Peter Wennink {BIO 1852674 <GO>}

Well, I think the second question is always impossible to answer. I mean you could say, yeah, the Memory business is quite different than it was a couple of years ago, I mean six players in 3D NAND, three in DRAM. So those patterns will also be a function of the composition of that market and individual position of those companies in that market.

So it's really difficult to use historical rates as a proxy for what's going to happen now. I think, yes, 2021 could be an accelerated growth year. However, Roger said it. I mean, even without the assumption on the recovery of the Memory market and the growth of the memory market we will see a double-digit growth year, this year, based on the Logic and on the Digital Base Management. On top of that we could see a recovery of the Memory market. So I think you could see an acceleration this year also.

Now that's not for the full year granted, because we do expect that in the second half. So but it will definitely continue like I said earlier, once this Memory market recovers, it doesn't recover for two quarters. I mean it recovers for a longer period like it always does, on top of the Logic market. So yeah, I think we are looking forward to some acceleration.

Q - Mitch Steves {BIO 19155169 <GO>}

All right, thanks.

A - Peter Wennink {BIO 1852674 <GO>}

On behalf of ASML I'd like to thank you for joining us today. Operator, if you could formally conclude the call, I'd appreciate it. Thank you.

Operator

This concludes the ASML 2019 fourth quarter and full year financial results conference call. Thank you for participating. You may disconnect.

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