Q3 2018 Earnings Call

Company Participants

- Daniel J. Durn, Senior Vice President & Chief Financial Officer
- Gary E. Dickerson, President, Chief Executive Officer & Director
- Michael Sullivan, Corporate Vice President, Investor Relations and Marketing Communications

Other Participants

- Atif Malik, Analyst
- C. J. Muse, Analyst
- Harlan Sur, Analyst
- John William Pitzer, Analyst
- Joseph Moore, Analyst
- Patrick J Ho, Analyst
- Pierre C. Ferragu, Global Team Head
- Romit Jitendra Shah, Analyst
- Steven Kinney Chin, Analyst
- Timothy Arcuri, Analyst
- Toshiya Hari, Analyst
- Weston David Twigg, Analyst
- Y. Edwin Mok, Analyst

MANAGEMENT DISCUSSION SECTION

Operator

Welcome to the Applied Materials Earnings Conference Call. During the presentation, all participants will be in a listen-only mode. Afterwards, you will be invited to participate in a question-and-answer session.

I would now like to turn the conference over to Michael Sullivan. Please go ahead, sir.

Michael Sullivan {BIO 16341622 <GO>}

Good afternoon and thank you for joining us. I'm Mike Sullivan, Head of Investor Relations at Applied Materials. We appreciate you joining us for our third quarter of fiscal 2018 earnings call, which is being recorded. Joining me are Gary Dickerson, our President and CEO; and Dan Durn, our Chief Financial Officer.

Before we begin, let me remind you that today's call contains forward-looking statements, including Applied's current view of its industries, performance, products, share positions, and business outlook. These statefments are subject to risks and uncertainties that could cause actual results to differ materially and are not guarantees of future performance. Information concerning these risks and uncertainties is contained in Applied's most recent Form 10-Q and 8-K filings with the SEC. All forward-looking statements are based on management's estimates, projections and assumptions as of August 16, 2018, and Applied assumes no obligation to update them.

Today's call also includes non-GAAP financial measures. Reconciliations to GAAP measures are contained in today's earnings press release and in our reconciliation slides, which are available on the Investor Relations page of our website at appliedmaterials.com.

And now, I'd like to turn the call over to Gary Dickerson.

Gary E. Dickerson {BIO 2135669 <GO>}

Thanks, Mike. I'm pleased to report that our revenue for the quarter was up 19% compared to the same period last year, and the second-highest in the company's history. Fiscal 2018 remains on track to be another record-setting year for Applied Materials, and we expect each of our major businesses to deliver strong double-digit growth.

In today's call, I'll start by providing our perspective on the market environment and our business performance. Then I'll lay out our views on the industry's future growth drivers and describe how we're evolving our strategy to take full advantage of the tremendous opportunities ahead. In aggregate, we see ongoing strength in our markets. Customers are making rational investments in new capacity, resulting in well-balanced supply/demand dynamics. At the same time, they are aggressively pursuing their development roadmaps, with healthy spending on next-generation technologies.

Demand for wafer fab equipment is on track to be an all-time record in 2018 and our view of 2019 remains positive. Our thesis that spending in 2018 plus 2019 combined will exceed $100 billion remains firmly intact. The details within our 2018 forecast are consistent with the view we shared during our last call, with the exception of a recent downward revision to our foundry outlook. As foundry customers optimize existing capacity, they have trimmed their capital spending plans for the year. They are still pushing forward with leading-edge development, prioritizing current investments towards long lead-time equipment, which is a positive leading indicator for 2019.

NAND bit demand is expected to grow at about 40% this year, with bit supply growing slightly faster. As a result, we see spending levels flat to modestly down from last year's record levels. DRAM investments are strong, up approximately 50% year-over-year, as customers invest in capacity and technology to meet growing demand for high-performance DRAM for data centers. Capital investments by the leading cloud service providers continues to strengthen, up about 85% year-to-date compared to 2017, and in line with our prior view, we also expect logic investments to be higher this year.

Stepping back and looking at the broader context, 2018 shows how the industry has fundamentally changed over the past five years. More diverse demand drivers spanning consumer and enterprise markets, combined with very disciplined investment, has reduced cyclicality. We're not seeing the large fluctuations in wafer fab equipment spending that we did in the past.

Over the same time period, we've also driven significant changes within Applied that have resulted in a larger, less volatile and more resilient business. In semiconductor, we've gained seven points of market share in memory since 2013, while maintaining our traditionally strong position in logic foundry. As a result, we are now very well balanced across market segments.

We built a strong portfolio of products that address major technology inflections. For example, by developing tools for next-generation multi patterning, we have grown our patterning business in DRAM, logic and foundry from about $100 million in 2013 to more than $1 billion this year. We expect our patterning opportunity to grow by another $1 billion, as EUV and new materials-enabled patterning steps are adopted over the next five years.

In Display, we have scaled the business from about $600 million in 2012 to approximately $2.5 billion this year. In both TV and mobile, customers are investing in new technologies and that plays directly to Applied's strengths. We expect Display to remain a powerful growth driver for the company over the long term.

In Service, we have grown revenue at a 15% compound annual growth rate since 2014. As we look ahead, we're confident that we can sustain at least that pace of growth, driven by our growing installed base, customers placing a larger portion of tools under long-term service agreements, and new advanced service products that help customers shorten ramp times, improve device performance and yield, and optimize operating costs.

When we look at the company as a whole, about 40% of our revenue today comes from sources other than new semiconductor equipment sales. Combined, our services, spares, upgrades, consulting, software, and display, and flexible technology businesses will generate more than $7 billion of revenue this year. This breadth and diversity gives us confidence in our ability to sustain strong performance under a variety of market conditions and provide a great platform for future growth.

I strongly believe that the most exciting days for the industry and Applied are ahead of us. Over the next decade, AI and Big Data will transform almost every sector of the economy and be a major growth driver for electronics and semiconductors. AI is already driving a significant increase in hardware research and investment from a broad range of companies, because it requires new types of computing at the edge and in the cloud, lower cost, lower power chips, and abundant storage.

In these early innings of AI, the industry is focused on addressing two major technology inflections: first, the development of new computing architectures customized for specific

training or inference workloads; and second, overcoming the deceleration of Moore's Law scaling. This is driving new types of innovation across the ecosystem.

We believe that future improvements in chip performance, power, area and cost needed to enable the AI era will be driven by a combination of five factors: new chip architectures; new structures within the chip, including 3D; new materials; new ways to shrink chip geometries, including EUV lithography and self-aligned patterning; and new ways to connect chips together using advanced packaging techniques. All five of these approaches will require major advances in materials engineering and create huge opportunities for Applied.

The AI-Big Data era is a catalyst for Applied to play a bigger and broader role than ever before. Our first priority is to be the most valuable partner for our customers. The introduction of more novel materials, combined with new structures, to improve power, performance and cost, means that integration challenges in a chip manufacturing process are increasingly complex. Our broad portfolio of technology and our ability to understand the interaction between materials creation, materials removal, and materials modification is tremendously valuable. As a result, we are seeing customers engaging Applied in earlier and deeper collaborations to develop unique solutions focused on device performance and yield.

One example of how we're doing this is Integrated Materials Solutions, where we can combine multiple processes together typically within a single system. We launched our first Integrated Materials System in June, but this is just the start. We have a very robust pipeline of integrated products, several of which we expect to come to market in 2019. We're also expanding our engagements within the AI ecosystem and finding new ways to create value with our technology. For example, we recently announced a collaboration with ARM to develop a neuromorphic switch that can enable new approaches to AI computing. This program is part of DARPA's Electronics Resurgence Initiative to develop new computing materials, designs and architectures.

In July, we hosted the industry's first AI Design Forum, with over 700 attendees spanning system architects, chip designers, and the manufacturing community. The common message from participants was that the ecosystem needs to work together in new ways to bring AI technologies to market faster and at lower cost. Applied has highly differentiated technologies and capabilities to accelerate new materials and systems like our Maydan Technology Center that enables rapid testing of new concepts and designs.

To further accelerate materials innovation and our ability to connect across ecosystem, we're expanding capacity and capabilities. In addition, we're applying AI and Big Data methods within our own research and development teams. We're partnering with leading AI companies in making infrastructure investments to significantly increase learning rates.

Before I turn the call over to Dan, I'll quickly summarize. Industry fundamentals remain strong, with customers making disciplined investments in capacity and new technologies. Applied's performance remains strong. 2018 will be another record year for all of our major businesses and our outlook for 2019 is positive. And we see a very bright future

ahead. We're expanding engagements with current and new customers to position the company to play a larger and more valuable role in the AI-Big Data era.

Now Dan will give his perspective on our performance and outlook.

Daniel J. Durn {BIO 17483115 <GO>}

Thanks, Gary. In Q3, Applied delivered revenue and non-GAAP earnings that were both within 2% of the all-time records we set last quarter. On a year-over-year basis, we generated strong revenue growth and increased non-GAAP EPS by 40%, even as our memory customers made capacity adjustments during the period.

We continue to see the wafer fab equipment market and Applied Materials being sustainably larger and less cyclical today than in the past. And as Gary outlined, our outlook for 2019 and the longer-term remains very positive. Given the adjustments in memory markets, along with recent foundry CapEx reductions, I want to offer you a little help this quarter with how we see demand profiling from 2018 into 2019.

My philosophy is to tell you what I see today based on our market analysis and customer engagements. I can't guarantee what happens in the economy, in policy circles, or in our markets, but I'm happy to be transparent with you and let you make your own judgments about the external factors.

Our fiscal Q4 business outlook calls for Semiconductor Systems revenue to decline by about 4% year-over-year, with non-GAAP earnings to increase by about 3% year-over-year at the midpoint to $0.96.

From what I can see today, Semiconductor Systems revenue will be flat to slightly higher sequentially in Q1. Non-GAAP earnings will be slightly higher sequentially in Q1 as well, even when you include a $0.05 headwind from an increase in our tax rate that takes effect in fiscal 2019. Our current outlook into Q2 and the balance of fiscal 2019 is for continued growth.

Returning to the bigger picture Gary described, you may notice how resilient the industry and the company have become, particularly given the supply and demand adjustments now taking place in memory. Some of us remember the steep cyclicality of the past, but here's the news, we expect trough non-GAAP quarterly earnings of $0.96 in Q4. To put this into perspective, $0.96 also happens to be the average of our full-year earnings in the six years from 2010 to 2015. We can now generate the same level of earnings in a single quarter. This comparison demonstrates the benefits of Applied's breadth and growth.

In Semi, while our memory systems revenue declined by 19% sequentially in Q3, our overall systems business was down by half that amount. This demonstrates the benefits of our balanced revenue share across device types. Applied's Display business has grown nearly $2 billion as compared to 2012, and the best indication of Applied's resilience is our Services business. This quarter, AGS posted its 19th consecutive quarter of year-on-year growth. In fact, Applied has the industry's largest installed base of more than 40,000

systems and we're shipping over 2,000 new, 300 millimeter systems this year alone. This year's record shipments will further expand our Services opportunity next year. In fact, due to the increase in trust our customers are placing in our Services products, we are now generating about half of our Services revenue from long-term agreements.

I'm sometimes asked to quantify the total proportion of our Semi-related business that comes from servicing the installed base. The answer is 32%. That's AGS excluding Display Services, plus 300 millimeter upgrades and refurbishments, which are reported as part of our Semiconductor Systems group segment. So Applied generates more installed base revenue than any other company in our industry.

Now I'll summarize our third quarter results. We generated operating income of $1.3 billion, which was up 22% year-over-year. Our non-GAAP EPS was $1.20, which was $0.03 above the midpoint, benefiting from higher revenue, as well as lower tax rate and share count.

Turning to the segments, our Semiconductor Systems group delivered revenue that was slightly above the midpoint of our expectations. Our Services revenue was up 21% year-over-year, which was slightly lower than the midpoint of our Q3 expectations, but well above our long-term growth target. AGS posted another all-time record in both revenue and operating income. Our Display group delivered revenue that was slightly above the midpoint and also set new records in both revenue and operating income.

Turning to the balance sheet, Gary talked about the many initiatives we're driving to accelerate innovation. We invested $133 million in capital improvements that were primarily aimed at expanding our capabilities in both R&D and manufacturing to support our customers. This quarter, we returned over $1.4 billion to shareholders. We paid out the first $0.20 dividend and we used $1.25 billion to repurchase 25 million shares of our stock. Over the last 12 months alone, we've repurchased 92 million shares or 9% of the shares outstanding at the beginning of that period. And we still have about $5 billion remaining in buyback authorization.

Now I'll share our business outlook for Q4. We expect overall revenue to be in the range of $3.85 billion to $4.15 billion. Within the outlook, we expect Semiconductor Systems revenue to decline by about 4% year-over-year. This forecast includes the impact of recent foundry CapEx reductions.

Our Services revenue should increase by about 15% year-over-year and our Display revenue should grow by about 2% year-over-year. Our non-GAAP gross margin should be around 45.4% and our non-GAAP operating expenses should be in the range of $765 million, plus or minus $10 million. And we expect non-GAAP EPS to be in the range of $0.92 to $1.

Now that you have our financial expectations for the full 2018 fiscal year and our positive view of 2019, I'd like to give you an interim update on our 2020 financial model in the context of the new opportunities Gary has been describing.

Q3 was a very busy quarter for us, and I was delighted to see more than 160 of you at our investor breakfast at SEMICON West. At the AI Design Forum, Gary shared the stage with NVIDIA, IBM and many of the world's top AI experts and startups. Two weeks later, Gary joined NVIDIA, Intel and others at the DARPA ERI Summit, showing how we can use materials engineering to accelerate AI, even as Moore's Law slows. DARPA awarded millions of dollars to Applied, ARM and our research partners to explore new material for neuromorphic computing. These are early indications of the work we are now doing to drive growth for our company and our customers. So, based on the current view of our markets, our evolving strategy, and our financial performance, we are confident that we will exceed our goal of earning $5.08 per share in our 2020 fiscal year, specifically.

We expect Semi Systems revenue to be more than $11.6 billion in fiscal 2020. We believe $50 billion is the new normal for this industry and that WFE will keep pace with the revenue growth of the industry. We also expect Services plus Display revenue of more than $8 billion. Within the mix, we see Services revenue being above our prior expectation, fully offsetting Display revenue, which we expect to be up in 2020, but still below our original target.

We continue to expect gross margin of 47% and operating margin of 29.6%. Our non-GAAP tax rate should be slightly higher than the prior expectation of 10%, due to the new tax rules. Additionally, our share count is already below 1 billion, versus the original goal of 1.024 billion. And we'll continue to return excess cash to our investors.

Now I'll turn the call back to Mike to start the Q&A.

Michael Sullivan {BIO 16341622 <GO>}

Thanks, Dan. And now, to help us reach as many of you as we can, please ask just one question at this time. If you have an additional question later, please just poll the operator, we'll do our best to answer it later in the call. Let's please begin.

Q&A

Operator

Our first question comes from C. J. Muse of Evercore ISI. Your line is now open.

Q - C. J. Muse {BIO 6507553 <GO>}

Yeah. Thank you for taking my question. Good afternoon. I guess, so my question, can you talk to the adjustments that you saw, both memory and foundry recently? And then, as you think about calendar 2019, can you discuss kind of the puts and takes in terms of how you're seeing each of the end markets, so whether foundry, logic, DRAM, NAND? And as part of that, if you could include your thoughts around clean room availability and timing of investments through the calendar year? Thank you.

A - Daniel J. Durn {BIO 17483115 <GO>}

Thanks, C. J. Given the announcements in the last month, we're now seeing some movements in foundry capital spending. That's reflected in the guidance we just provided for fiscal Q4. All other assumptions from last quarter still hold true. To give you more color on what we're seeing in foundry, we continue to see growth in trailing-node geometries. The split between leading-edge and trailing-node geometries historically was 80-20, then it became 60-40. Today it's more like 50-50. And specifically in 2018, we see trailing-node spend up and leading-edge node spend down. And on the leading-edge, we're seeing a prioritization towards spend to very long lead time items, which we believe is a good indicator of our business going into 2019 and beyond. In 2019, we expect, both leading- and trailing-node geometry spend to be healthy.

When we look at 2018 and 2019, just to provide the broader context, 2017 was an all-time record, 2018 is likely to be the new record, being up over 2017. And we're seeing strengths across all device types.

Gary in his prepared comments said 2018 plus 2019 combined will exceed $100 billion. I think it's too early to make a point estimate on either year. But based on customer conversations we're having, 2019 will be above $50 billion and still healthy across all device types. And so, we're really seeing a strong end market, and how things profile into 2019.

A - Michael Sullivan {BIO 16341622 <GO>}

Yeah. And I think C. J. might've had a comment something about capacity at the fab level for some of this. So I think (00:24:15).

A - Daniel J. Durn {BIO 17483115 <GO>}

Yeah, so the best I can get to from a capacity standpoint is we're tracking 32, 300 millimeter factories around the globe, that still have to be facilitized. The average size of those 32 fabs is about 72,000 wafer starts per month, and it represents about 200 billion of potential floor space for WFE equipment. So in terms of ability to deploy capacity in a fairly rapid fashion, I think the infrastructure and the build is out there. I think it's just a matter of letting the demand-led environment lead our customers' investment profile to maintain rationale supply/demand dynamics and strong pricing in their markets.

A - Michael Sullivan {BIO 16341622 <GO>}

Hey, thanks C. J. for the question.

Operator

Thank you. Our next question comes from Atif Malik of Citigroup. Your line is now open.

Q - Atif Malik {BIO 15866921 <GO>}

Hi. Thanks for taking my question. And Dan, thank you for updating us on the $5, 2020 target model. I have a question on the Display segment. It looks like you guys are on track to do 30% year-over-year growth for fiscal 2018. On the last earnings call, you guys talked

about the decline of 15% to 20% for fiscal 2019. I was curious, if anything has changed to that outlook in the mobile or the TV markets? Thank you.

A - Gary E. Dickerson {BIO 2135669 <GO>}

Thanks, Atif. So, our Display forecast is really unchanged, similar to what we communicated previously. As you said, 2018 is going to be around $2.5 billion, up more than 30% from the previous year, and up from $600 million in 2012. So, tremendous growth overall in Display. And we still see 2019 down in the 15% range and 2020 to be higher than 2018.

In terms of mix, 2018-2019 is more weighted towards TV. And one thing I'd remind everybody, for large screen TVs, if you compare Gen 10.5 to Gen 8.5, you get a TV versus three. So our view on the TV market is similar to what we previously communicated. And overall, again, we see 2020 up over 2018, continue to see Display as a great growth driver for the company. Future technology inflections are more capital intensive, and we have a pipeline of new capabilities that create a strong opportunity for future growth.

Operator

Thank you. Our next question comes from Pierre Ferragu of New Street Research. Your line is now open.

Q - Pierre C. Ferragu {BIO 15753665 <GO>}

Hi. Thank you for taking my question. I'd like to come back very rapidly on C. J.'s question and really make a difference between memory and logic. So if I understood you correctly, Dan, what you're saying is that in memory, what you saw three months ago and that led you to tell us you could reasonably expect like sequential growth between Q3 and Q4 in Semiconductor System, that outlook didn't change, which means that the low point in memory was Q3 and things should be improving from there based on your visibility today. And then the new thing is only logic has a push back – the pull outs you mentioned about logic.

And then on the back of that, my question would be how much confidence do you have in the fact that these Q4 numbers is also baking in low points in logic, which means that we would have gone through in just a couple of quarters, a pull-back in memory and a pull-back in logic and with therefore limited raise of the sale that are – negative sale price (00:28:27) down the line.

A - Daniel J. Durn {BIO 17483115 <GO>}

Thanks, Pierre. A couple of comments on the memory side, everything that is out in the market today from an information standpoint was reflected in our guide, and that's playing out as we thought. So there's no incremental news or information. And the delta between how we thought Q4 was going to profile three months ago versus what we're guiding to today is a foundry-driven dynamic. So you used the word logic, we differentiate between logic and foundry. And so I just wanted to be clear that our view is

coming out of the foundry market. And it was versus our expectations on how Q4 was going to profile. So that is the big delta between what we thought three months ago.

And as we roll the clock forward, the spending in foundry today is being driven by very long lead time items, which we see as a lead indicator for our business where the lead times are much shorter as capacity comes online to meet customer demand. So I think the setup around 2019 for us is a result of that and the foundry market looks good.

A - Michael Sullivan {BIO 16341622 <GO>}

Thanks, Pierre.

Q - Pierre C. Ferragu {BIO 15753665 <GO>}

Thank you.

Operator

Thank you. Our next question comes from Krish Sankar of Cowen. Your line is now open.

Q - Steven Kinney Chin {BIO 16211528 <GO>}

Hi. Thanks for taking my question. This is Steven Chin calling on behalf of Krish. Gary, earlier you mentioned some comments on the NAND market, specifically sort of what you're seeing in terms of the demand growth of roughly 40% and supply growth a little bit more than that. I was wondering if you could give us a little more color on how you see the NAND WFE profile going to back-end this year and maybe into 2019, just based on some of those comments. And I guess the implication would be there might be some pricing pressure in the NAND market if those dynamics continue to play out. And if so, would you expect that NAND WFE to see some slowdown towards the back-end of the year because of pricing? Or do you think investments in upgrades to the 96-layer or above, that that will continue and hence continue to keep NAND WFE strong?

A - Daniel J. Durn {BIO 17483115 <GO>}

So, I guess, here's the comments that I would make on the NAND market. We signaled a quarter ago that we're going to see some back-half weakness. So I think that's playing out as we expected. In Gary's prepared comments, he talked about the NAND market being down year-over-year versus 2017. We see that playing out.

And as we look at the health of the market, if we take a step back and just look at the macro drivers driving semiconductor demand today, those macro drivers are intact and playing out as expected. Things like artificial intelligence and the data economy are going to drive a structurally larger semiconductor industry as the demand for those devices to fuel those trends increases over time. As we take a look at customer profitability, it's better today than it's ever been. And they're investing a lot of money. But as a percentage of their profitability, it's down substantially since 2012.

In the memory market, over that time period, CapEx as a percentage of EBITDA is down 40%. And the customers are doing a better job of modulating supply and making demand-led investments. There will always be adjustments from a supply/demand standpoint to keep those markets in balance. And I think that our customers have done a good job to strike the right balance in the environment that we're in. And as we look forward into 2019, I'll come back to an earlier comment on one of the earlier questions. We see a healthy dynamic across all four device types into 2019.

A - Michael Sullivan {BIO 16341622 <GO>}

Thanks, Steven.

Q - Steven Kinney Chin {BIO 16211528 <GO>}

Thanks, Dan.

Operator

Thank you. Our next question comes from John Pitzer of Credit Suisse. Your line is now open.

Q - John William Pitzer {BIO 1541792 <GO>}

Yeah, good afternoon, guys. Gary, Dan, thanks for letting me ask a question. Guys, similar to your U.S. peers, you're kind of calling your October quarter as the bottom, a little bit different than the U.S. peers, as they're a little bit more emphatic about growth into their December quarter, your January quarter. And I'm just kind of curious, is that a function of sort of your being over-indexed to foundry or not as indexed to 5-nanometer on the process equipment side i.e. if you were to look at your domestic peers and kind of compare the apples-to-apples businesses, would you be more confident that your January semi equipment business would be up sequentially?

A - Daniel J. Durn {BIO 17483115 <GO>}

So I think there's a couple of things at play, John. And thanks for the question. The first thing I would say is, it's hard for me to know exactly what the assumptions were in each of the competitors' and peers' forecasts. So it's hard to make a direct comparison of what we see differently than others. What I would say is, is our guide reflects everything we see. Our footprint is broader than our peers. We're exposed to more of those end markets and device types. And the guidance, we have reflects our view of the world, and the conversations we're having with our customers.

From a foundry-specific standpoint, we emphasize the fact that spending on the leading-edge today is prioritizing some very long lead time items for capacity that will become – that will come online in the next year, 18 months, which is a nice setup for shorter lead time tools, which creates a nice opportunity for us going into 2019. So it's hard to be very specific on a comparative basis of how we're profiling differently than others. All we can try to do is be transparent with what we see developing in the market and how our conversations with customers are profiling.

A - Michael Sullivan {BIO 16341622 <GO>}

Thanks, John.

Q - John William Pitzer {BIO 1541792 <GO>}

Thank you.

Operator

Thank you. Our next question comes from Harlan Sur of JPMorgan. Your line is now open.

Q - Harlan Sur {BIO 6539622 <GO>}

Good afternoon. Thanks for taking my question. And sorry if I missed this, but can you guys just help us understand the dynamics around the foundry push-outs? If I look at my semi coverage universe, right, some of the big complex SoC guys, Broadcom, AMD, Xilinx, Qualcomm, so on, the 7-nanometer tape-out ramp looks actually quite significant. That's going to start to ramp kind of beginning of next year. So if you could just help us understand the rationale for your views on what you think in terms of why the push-outs of investments here in the second half of this year? And maybe just also address the breadth of the foundry push-out, is it primarily one customer or is it multiple customers?

A - Daniel J. Durn {BIO 17483115 <GO>}

Thanks, Harlan. As we take a look at the foundry segment, what we can reflect in our guide is what gets communicated from our customer base. And the customers have done a very good job in the foundry space, managing a supply statement commensurate with where they see demand coming from.

As you know, tape-outs come and capacity gets put in place. And so there's pretty close synchronization in that market as the business materializes, capacity gets deployed to meet that demand statement. So we feel pretty good that what's in the market today from a capacity standpoint is able to absorb the demand that's coming into the foundry space.

The second part of your question, over the past month, we've been reading about public comments on adjustment in the foundry spending, reflects conversations we have with the customer base. You're now seeing that reflected in our guidance going forward. The adjustment we're seeing is primarily from what you've been reading about, but not exclusively one customer.

Q - Harlan Sur {BIO 6539622 <GO>}

Great. Thanks for the insights.

Operator

Thank you. Our next question comes from Romit Shah of Nomura Instinet. Your line is now open

Q - Romit Jitendra Shah {BIO 16865852 <GO>}

Yes, thank you. I guess a two part from me. I mean, you made the comment, Gary, in your prepared remarks that the business is seeing less fluctuations, but, you, three months ago said that July was going to be the bottom and October would grow. And now you're guiding October revenues down about 10%. So, how is it that the business is more reliant and less cyclical than what we've seen (00:37:42).

Then I guess as a second part to that, DRAM spending I understand is strong, but all indications are that DRAM prices can be down in Q4. So what gives you confidence that this isn't the next – DRAM is not the next shoe to drop? Thank you.

A - Daniel J. Durn {BIO 17483115 <GO>}

Thanks, Romit. When we contemplated our July guidance and how October was going to profile, it was conditioned on a set of conversations and a set of knowledge that was in the market. Subsequent to that, there was an adjustment in spend profiles in the foundry space, so new information became available and our guidance reflect all of the information that's out there today.

When I take a step back and we talk about resilience and we talk about less cyclicality, let's talk about the overall markets and then specifically apply it to Applied Materials, 2017 in the WFE space was an all-time record year, 2018 is going to be up over 2017 with strength across all device types in an environment where we're talking about re-profiling of both memory and foundry spend. And so I think that's a pretty strong statement from an end market standpoint that the industry is evolving in ways that I think will accrue benefits to us going forward.

When we take a step back and look at Applied specifically, in an environment characterized by those same pressures re-profiling memory and foundry spend, we talked about EPS in my prepared comments, a single quarter is now larger than what this company used to do in a full year just a short time ago. And I think that's a pretty strong statement that our business is more resilient and less cyclical than we've seen in the past. So we feel pretty good about that context and those statements. And I'm sorry, Romit, what was the second part of your question?

Q - Romit Jitendra Shah {BIO 16865852 <GO>}

I was curious about DRAM. DRAM spending has been strong, but it looks like in Q4, DRAM prices could be down. And given that we saw earlier in the year weakness in NAND that sort of preclude a decline in NAND spending. I guess I'm just (00:40:10-00:40:26)

A - Daniel J. Durn {BIO 17483115 <GO>}

So, I guess, the best way I would address that, Romit, is there can always be changes in markets. What we're giving a perspective on today is what we're seeing in the market. The supply/demand balance has been reasonably intact from a DRAM standpoint. It's led to pricing stability. It's something the customers monitor very granularly and they've been very disciplined from an investment standpoint, making demand-led investments. Taking

a step back, macro (00:41:01) I think the long-term demand drivers around silicon, DRAM and logic foundry, all device types are still there. And so, if there are short-term disruptions, I don't think it changes our long-term view of how these markets evolve, and so we view the market still as healthy.

A - Michael Sullivan {BIO 16341622 <GO>}

Thanks, Romit.

Operator

Thank you. Our next question comes from Tim Arcuri of UBS Securities. Your line is now open.

Q - Timothy Arcuri {BIO 3824613 <GO>}

Thank you very much. Dan, I want to ask a question about SSG's share. So, even if I assume, like, $51 billion this year, which it sounds like it's probably going to be at least that, if not higher. Other guys are saying $52 billion or $53 billion. It still looks like based upon your guidance for the fiscal Q1, that you're still going to lose a little bit of WFE share this year, after losing a little bit last year as well. Now maybe that $51 billion number is too high or something. But even if I look at the 2020 model, your comments on that, you said SSG is going to still be about $11.6 billion or higher, which is in line with the old model. But the old model was at $45 billion WFE. And now it seems like you're saying that $50 billion is sort of the new normal. So it seems like the share assumption has come down a bit. So I'm wondering what to read into all that? Thanks.

A - Gary E. Dickerson {BIO 2135669 <GO>}

Yeah, I think – so last year, the share wasn't down. I think if you go back to the previous six years, the share was up or flat, mostly up in all of the previous six years. So if you take an overall look at the company over the last few years, one of the big things that we've driven is a much better balance across all device types. So if you go back to 2013, we had only greater than 20% share in foundry, less than 15% share in NAND, DRAM and logic. Since 2013, we've grown the memory revenue 5x and 7% share growth and almost 2x growth in revenue and logic. So, again, tremendous balance across all of the device types versus really just being more foundry-focused.

And what I would say going forward that certainly Dan reiterated that we would exceed the model for 2020. And if I look at the company, how we're positioned, we're in a great position for next technology nodes, very strong pipeline of new products across many markets and compelling Integrated Materials Solutions, and we talked about some of that over the last two months. In the new products and material solutions, we'll introduce some significant new capabilities in the next 12 months and beyond.

And also, if you look from a macro perspective, I was a speaker at the AI Design Forum and the DARPA conferences, and some of the themes that came out of that were around AI-Big Data being a major opportunity, at the same time Moore's Law's challenged. So, at those conferences, and you see many people talking about the future being about

materials, new structures, 3D, driving future innovation and enabling AI-Big Data power performance area and cost, future logic memory patterning packaging. And at one of those conferences, I gave examples of new capabilities, including a three orders magnitude improvement leakage current that provides lower power performance.

And there's, again, a very large value in time to market. So when you think about going from materials to systems, there's tremendous value in accelerating that whole process, going from materials to single process steps, to integrated materials, to structures, to devices, to packages, to systems. And I really deeply feel Applied's never been in a better position to use our breadth to enable these new capabilities.

So, bottom line, from a position standpoint, we've never been in a better position. We have a very strong pipeline of new products, Integrated Materials Solutions, and Applied really is at the foundation of accelerating these AI-Big Data industry inflections.

Q - Timothy Arcuri {BIO 3824613 <GO>}

Thanks, Gary. Thanks.

Operator

Thank you. Our next question comes from Toshiya Hari of Goldman Sachs. Your line is now open.

Q - Toshiya Hari {BIO 6770302 <GO>}

Yeah, thank you very much for taking the question. Gary, I was hoping to get an update on how you view your near and medium-term opportunity in China. Obviously, there's lots going on from a political/trade perspective. I think some of your customers are making some progress on the technology front. I think one of your NAND customers had a pretty big presence at the Flash Memory Summit last week. So, just curious what you're seeing today and if you've seen any kind of pull-ins from your customers in China? Thank you.

A - Gary E. Dickerson {BIO 2135669 <GO>}

Yeah. Thanks, Toshiya for the question. Our current forecast for China is in line with our prior assumptions. 2018 is going to be a great year for Applied. We'll grow faster than the market. And based on our mitigation plans, we don't see any meaningful impact from tariffs that have been imposed, that I know people are wondering about. So, overall, strong position in China.

Regarding the geopolitical situation, certainly we believe in fair trade and that a successful resolution – the current situation is important to the overall ecosystem. And we believe that's the likely ultimate outcome relative to Applied's – we will continue to monitor the impact of any future developments to Applied's supply chain, customers, and take any actions that are needed to mitigate impact to Applied and our customers.

Relative to technology positions, I think nothing has really changed versus what we thought before. China will continue to incrementally invest. This year, the domestic business is more heavily weighted to foundry logic than memory, similar to 2017, was more foundry logic. 2019 we see more weighted towards foundry logic. But China will definitely continue to incrementally invest. We don't see any hockey stick relative to future investment, and we still believe it's going to take a long time for their technology to mature, to get anywhere close to the leading edge. But, again, incrementally, we still see China as a very positive market for Applied.

A - Michael Sullivan {BIO 16341622 <GO>}

Thanks, Toshiya.

Q - Toshiya Hari {BIO 6770302 <GO>}

Thank you.

Operator

Thank you. Our next question comes from Patrick Ho of Stifel. Your line is now open.

Q - Patrick J Ho {BIO 5499707 <GO>}

Thank you very much. Gary, in past Analyst Days, which by the way if you have an update on when you think this year's Analyst Day will be, where and when, you talked about capital intensity trends, particularly for the NAND industry and how that's positively impacted Applied Materials. As the industry moves to 96-layers and above, can you give us a little bit of an update on Applied's position in both its core etch and deposition businesses, but also in other areas like CMP and process control where you gained share in the past and you're looking to gain more share?

A - Gary E. Dickerson {BIO 2135669 <GO>}

Thanks, Patrick. So, yeah, I think it was – maybe it was 2013, we talked about the 2D – the 3D NAND inflection and the business moving from litho intensive to etch and deposition intensive. And as I talked about earlier, we've grown our memory revenue from 2013 about 5x. We've increased share 7%. We're optimistic that the scaling is going to continue for 3D NAND. And we have some really tremendously enabling capabilities. The etch business for us is continuing to grow. Our conductor etch share is in a leadership position. We have new capabilities that we're bringing to market in NAND. So we're very optimistic on etch. We're optimistic in terms of deposition. CMP steps are growing in 3D NAND. So, again, overall, I'm very optimistic about the market and our position.

A - Michael Sullivan {BIO 16341622 <GO>}

Guys, maybe I'll give an update on the Analyst Day. So we're looking at New York, probably for the next one. I've got a venue that's on hold. What we haven't finalized is the date. And I've really got two choices that we're thinking about. One is, we squeeze it in before the end of the year. What I'm thinking about is, if we do that, we're going to give a long-term market outlook that sounds a lot like what we did at SEMICON West and the AI

Design Forum. The other choice is to save the meeting for next year. If we do that, what we'll be able to do is give you some updates on some of the products that we've been alluding to, and also some of the initiatives that Gary has been describing, which might be a benefit.

So if you ask me from where we sit here, I'm leaning to next year, and what we need to do is make a final determination and then send you a calendar notice. So I promise to do that, Patrick. Thanks.

Operator

Thank you. Our next question comes from Joseph Moore of Morgan Stanley. Your line is now open.

Q - Joseph Moore {BIO 17644779 <GO>}

Great. Thank you. I had another question on the three-year outlook. To the extent that the WFE number for FY 2020 was $45 billion, it's now $50 billion. What's the rationale for the change? What's changed since you gave the $45 billion number? And then, can you talk a little bit about, you're maintaining the gross margin guidance with some mix shift, with Display lower and Services higher. What's the impact of that mix shift? Thank you.

A - Daniel J. Durn {BIO 17483115 <GO>}

Thanks, Joe. As we take a step back and just look at where we sit relative to what was communicated at the last Analyst Day, just in terms of what the new normal is, 2017 was high-40s from a WFE standpoint. We talk about 2018 and 2019 combined exceeding $100 billion. And so I think there's visibility on three nice proof points that get us to an industry that's larger than what was originally contemplated when we first went out with our long-term model. So we feel pretty good about $50 billion being the new norm in the industry going forward. And I'm sorry the second part of your question?

Q - Joseph Moore {BIO 17644779 <GO>}

Yeah, just the gross margin impact of mix shift with Services, foundry and Display?

A - Daniel J. Durn {BIO 17483115 <GO>}

So, the gross margins of our business, while we don't disclose what they are in order are Semi business, our Display business and our Service business. And you rightfully point out as Display is falling short of the target that was originally contemplated by 2020, that shortfall gets made up by our Services business, creates a natural headwind in the business. And the management team is working hard on a number of fronts to drive gross margins and our execution to deliver on our shareholder commitment, and so it's just a lot of hard work that underpins the journey we've been on and the company has made great progress on this in the last four or five years, where our gross margins are up 500 basis points. So we feel good about the journey ahead.

A - Michael Sullivan {BIO 16341622 <GO>}

Thanks, Joe.

Q - Joseph Moore {BIO 17644779 <GO>}

Thank you.

Operator

Thank you. Our next question comes from West Twigg of KeyBanc Capital Markets. Your line is now open.

Q - Weston David Twigg {BIO 15419233 <GO>}

Hi. Thanks for taking my question. I wanted to ask about cobalt adoption. You've detailed it a couple of months ago. Just wondering if you could comment on the traction you're seeing. Are customers successfully integrating it? Or do you see any yield risk? And I think you said there was around a $500 million opportunity at 7-nanometer. How far into that opportunity do you think you'll get in 2019 based on the current customer activity?

A - Gary E. Dickerson {BIO 2135669 <GO>}

Yes. Thanks for the question. So we see cobalt continuing to be adopted over the next three, four years. Just for reference, one layer of cobalt adds about $70 million incremental business. So from where we're at right now, we continue to see adoption. It's probably in the $250 million, $300 million range over the next few years in terms of incremental business.

Q - Weston David Twigg {BIO 15419233 <GO>}

Okay. That's helpful.

A - Michael Sullivan {BIO 16341622 <GO>}

Yes, thanks, West. Operator, I think we have time for one more question.

Operator

Thank you. Our next question comes from Edwin Mok of Needham & Company. Your line is now open.

Q - Y. Edwin Mok {BIO 15222334 <GO>}

Hey, guys. Thanks for squeezing me in. Sorry, my line got dropped in the middle, but sorry if this was asked, but on the prepared remarks, you guys talked about patterning, you guys are growing your patterning business and potentially adding $1 billion over the next five years. And when we talk to investors, some of them are worried that (00:54:35). So is this possible, can you guys provide maybe some examples of why you think your patterning business can grow? Is it driven by share gain, new processes or new architecture et cetera?

A - Gary E. Dickerson {BIO 2135669 <GO>}

We have a number of really strong products inside the patterning market. Oh – I am sorry, I wasn't on, I guess. Yeah. Yeah, we have a number of strong products in the patterning market, the Sym3, Selectra, the CMP business is also growing as more patterning steps are adopted. We have new deposition capabilities. So, our overall market, as you talked about, grew $1 billion over the last few years. We have a lot of confidence and line of sight to additional $1 billion over the next few years.

So if you look at the market overall, about 50% is memory. Certainly, our share there is growing a significant amount. You have trailing geometries, about 25%. 25% is leading foundry and logic. And we see in the foundry logic, significant traction. If we look at our share of patterning in 5-nanometers and our overall TAM in 5-nanometers versus 7-nanometers goes up something like 25%. Our positional share in 5-nanometers will also go up, and especially, in patterning. So as multi-patterning gets further adopted and EUV steps are adopted, all of that is incrementally positive for Applied.

EUV steps are replacing positions that Applied really isn't present today. So both of those areas, the growth in EUV, the growth in multi-patterning are positive for Applied.

And the other thing I would say relative to patterning, there are really two major areas of focus, one is shrinking features, but the other one is placing features in the right position. And if you look from an overall industry perspective, this pattern placement or alignment is a big challenge for customers. So we have a very good position as some of these new processes are adopted. And certainly, we have a good line of sight to the future technology node. So, for Applied, EUV is positive, our positions are positive, and we have a good line of sight to that additional growth.

A - Michael Sullivan {BIO 16341622 <GO>}

Thanks, Edwin for your question. And Dan, would you like to add anything in closing.

A - Daniel J. Durn {BIO 17483115 <GO>}

Thanks, Mike. To me, it comes down to three things. First, our markets, and in particular, our company; what we continue to see going forward, our business is going to be sustainably larger, it's more diverse, less volatile, less cyclical than it's been in the past. Couple of proof points we look at; in my intro, talked about how we can now do the same level of earnings in a single quarter that we used to do in a full year a short while ago. Something else to think about; even with the adjustments in spend that our customers have made this year, the lowest quarter of EPS in 2018 will be higher than any quarter in 2017, which was an all-time record for the company.

Second, 2019, we see continued strength. The more we talk to both customers and others in the tech ecosystem, the more we believe we're on the beginning of a powerful new wave. Applied Materials is on the critical path. Those trends depend on what Applied does best.

Third, 2020 financial model on track to exceed the targets we have out there. But it also says is behind the scenes, we're building a pipeline, strong pipeline of new products, new innovations, new opportunities that set us up extremely well in the years beyond. As Gary said, we've never been better positioned as a company than we are today.

Lastly, Citigroup Conference is coming up in a few weeks. So look forward to seeing many of you there. And just let us know if you have any questions. We want to be helpful. We're here to help. Just let us know.

With that, Mike, let's go ahead and close the call.

A - Michael Sullivan {BIO 16341622 <GO>}

Okay, great. Thanks, Dan. And we'd like to thank everybody for joining us. A replay of this call is going to be available on our website by 5 PM Pacific time today. And thank you for your continued interest in Applied Materials.

Operator

Ladies and gentlemen, thank you for participating in today's conference. This concludes today's program. You may all disconnect. Everyone have a great day.
