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CORPORATE PARTICIPANTS

Jeff Su *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Wendell Huang *Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President, Finance and Chief Financial Officer / Spokesperson*

C.C. Wei *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

CONFERENCE CALL PARTICIPANTS

Gokul Hariharan *JPMorgan Chase & Co - Analyst*

Charlie Chan *Morgan Stanley - Analyst*

Sunny Lin *UBS AG - Analyst*

Bruce Lu *Goldman Sachs Group Inc - Analyst*

Laura Chen *Citigroup Inc. - Analyst*

Krish Sankar *Cowen and Company LLC - Analyst*

Arthur Lai *Macquarie Research Ltd - Analyst*

PRESENTATION

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

(spoken in foreign language)

Good afternoon, everyone, and welcome to TSMC's third quarter 2025 earnings conference call. This is Jeff Su, TSMC's Director of Investor Relations and your host for today. TSMC is hosting our earnings conference call via live audio webcast through the company's website at www.tsmc.com, where you can also download the earnings release materials. If you are joining us through the conference call, your dial-in lines are in listen-only mode.

The format for today's event will be as follows: first, TSMC's Senior Vice President and CFO, Mr. Wendell Huang, will summarize our operations in the third quarter 2025, followed by our guidance for the fourth quarter 2025. Afterwards, Mr. Huang and TSMC's Chairman and CEO, Dr. C.C. Wei, will jointly provide the company's key messages. Then we will open the line for Q&A.

As usual, I would like to remind everybody that today's discussions may contain forward-looking statements that are subject to significant risks and uncertainties which could cause actual results to differ materially from those contained in the forward-looking statements. Please refer to the safe harbor notice that appears in our press release.

And now I would like to turn the call over to TSMC's CFO, Mr. Wendell Huang, for the summary of operations and the current quarter guidance.

Wendell Huang - *Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President, Finance and Chief Financial Officer / Spokesperson*

Thank you, Jeff. Good afternoon, everyone. Thank you for joining us today. My presentation will start with financial highlights for the third quarter 2025. After that, I will provide the guidance for the fourth quarter 2025.

Third quarter revenue increased 6% sequentially in NT as our business was supported by strong demand for our leading-edge process technologies. In US dollar terms, revenue increased 10.1% sequentially to USD33.1 billion, slightly ahead of our third quarter guidance.

Gross margin increased 0.9 percentage points sequentially to 59.5%, primarily due to cost improvement efforts and a higher capacity utilization rate, partially offset by an unfavorable foreign exchange rate and dilution from our overseas fabs. Accordingly, operating margin increased 1.0 percentage points sequentially to 50.6%. Overall, our third quarter EPS was TWD17.44, up 39% year-over-year, and ROE was 37.8%.

Now let's move on to revenue by technology. 3-nanometer process technology contributed 23% of wafer revenue in the third quarter, while 5-nanometer and 7-nanometer accounted for 37% and 14%, respectively. Advanced technologies, defined as 7-nanometer and below, accounted for 74% of wafer revenue.

Moving on to revenue contribution by platform. HPC remained flat quarter-over-quarter to account for 57% of our third quarter revenue. Smartphone increased 19% to account for 30%. IoT increased 20% to account for 5%. Automotive increased 18% to account for 5%. And DCE decreased 20% to account for 1%.

Moving on to the balance sheet. We ended the third quarter with cash and marketable securities of TWD2.8 trillion or USD90 billion. On the liability side, current liability decreased by TWD101 billion quarter-over-quarter, mainly due to the decrease of TWD112 billion in accrued liabilities and others as we paid out 2025 provisional tax of TWD136 billion.

In terms of financial ratios, accounts receivable turnover days increased 2 days to 25 days. Days of inventory decreased 2 days to 74 days due to strong shipment in N3 and N5.

Regarding cash flow and CapEx, during the third quarter, we generated about TWD427 billion in cash from operations, spent TWD287 billion in CapEx and distributed TWD117 billion for fourth quarter '24 cash dividend. Overall, our cash balance increased TWD106 billion to TWD2.5 trillion at the end of the quarter. In US dollar terms, our third quarter capital expenditures totaled USD9.7 billion.

I have finished my financial summary. Now let's turn to our current quarter guidance. Based on the current business outlook, we expect our fourth quarter revenue to be between USD32.2 billion and USD33.4 billion, which represents a 1% sequential decrease or a 22% year-over-year increase at the midpoint. Based on the exchange rate assumption of USD1 to TWD30.6, gross margin is expected to be between 59% and 61%, operating margin between 49% and 51%. This concludes my financial presentation.

Now let me turn to our key messages. I will start by talking about our third quarter '25 and fourth quarter '25 profitability. Compared to second quarter, our third quarter gross margin increased by 90 basis points sequentially to 59.5%, primarily due to cost improvement efforts and a higher overall capacity utilization rate, partially offset by margin dilution from our overseas fabs and an unfavorable foreign exchange rate.

Compared to our third quarter guidance, our actual gross margin exceeded the high end of the range provided three months ago by 200 basis points, mainly as the actual third quarter exchange rate was $1 to TWD29.91 compared to our guidance of $1 to TWD29.

In addition, we also delivered better-than-expected cost improvement efforts. We have just guided our fourth quarter gross margin to increase by 50 basis points to 60% at the midpoint, primarily driven by a more favorable foreign exchange rate, partially offset by continued dilution from our overseas fabs.

While the cost of overseas fabs remain higher, thanks to the company's overall larger scale, we now expect the gross margin dilution from the ramp-up of our overseas fabs to be closer to 2% in the second half of 2025. For the full year 2025, we now expect it to be between 1% to 2% as compared to 2% to 3% previously.

Looking ahead, we continue to forecast the gross margin dilution from the ramp-up of our overseas fabs in the next several years to be 2% to 3% in the early stages and widen to 3% to 4% in the latter stages. We will leverage our increasing size in Arizona and work on our operations to improve the cost structure. We will also continue to work closely with our customers and suppliers to manage the impact.

Overall, with our fundamental competitive advantages of manufacturing technology leadership and large-scale production base, we expect TSMC to be the most efficient and cost-effective manufacturer in every region that we operate.

Now let me make some comments on our 2025 CapEx. As the structural AI-related demand continues to be very strong, we continue to invest to support our customers' growth. We are narrowing the range of our 2025 CapEx to be between USD40 billion and USD42 billion as compared to USD38 billion to USD42 billion previously. About 70% of the capital budget will be allocated for advanced process technologies, about 10% to 20% will be spent for specialty technologies, and about 10% to 20% will be spent for advanced packaging, testing, mask making and others.

At TSMC, a higher level of capital expenditures is always correlated with higher growth opportunities in the following years. Even as we invest for the future growth with this higher level of CapEx spending in 2025, we remain committed to delivering profitable growth to our shareholders. We also remain committed to a sustainable and steadily increasing cash dividend per share on both an annual and quarterly basis.

Now let me turn the microphone over to C.C.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Thank you, Wendell. Good afternoon, everyone. First, let me start with our near-term demand outlook. We concluded our third quarter with revenue of USD33.1 billion, slightly above our guidance in US dollar terms, mainly due to the strong demand for our leading edge process technologies.

Moving into fourth quarter 2025, we expect our business to be supported by continued strong demand for our leading-edge process technologies. We continue to observe robust AI-related demand throughout 2025, while non-AI end market segments have bottomed out and are seeing a mild recovery.

Supported by our strong technology differentiation and broad customer base, we now expect our full year 2025 revenue to increase by close to mid-30s percent year-over-year in US dollar term.

While we have not observed any change in our customers' behavior so far, we understand there are uncertainties and risk from the potential impact of tariff policies, especially in consumer-related and price-sensitive market segments.

As such, we will remain mindful of the potential impact and be prudent in our business planning going into 2026, while continuing to invest for the future mega trend. Amidst the uncertainties, we will also continue to focus on the fundamentals of our business, that is technology leadership, manufacturing excellence and customer trust, to further strengthen our competitive position.

Next, let me talk about the AI demand outlook and TSMC's capacity planning process disciplines. Recent developments in AI market continue to be very positive. The explosive growth in token volume demonstrated increasing consumer AI model adoption, which means more and more computation is needed, leading to more leading-edge silicon demand. Companies such as TSMC are leveraging AI internally to drive greater productivity and efficiency to create more value. As such, enterprise AI is another source of demand. In addition, we continue to observe the rising emergence of sovereign AI.

We are also happy to see continued strong outlook from our customers. In addition, we directly receive very strong signals from our customers' customers, requesting the capacity to support their business. Thus, our conversion in the AI megatrend is strengthening, and we believe the demand for semiconductor will continue to be very fundamental.

As a key enabler of AI applications, TSMC's biggest responsibility is to prepare the most advanced technologies and necessary capacity to support our customers' growth. To address the structural increase in the long-term market demand profile, TSMC employs a disciplined and thorough capacity planning system. Externally, we work closely with our customers and our customers' customers to plan our capacity. We have more than 500 different customers across all the end market segments. In addition, as process technology complexity increases, the engagement lead time with customer is now at least two to three years in advance. Therefore, we probably get the deepest and widest look possible in the industry.

Internally, our planning system involves multiple teams across several functions to assess and evaluate the market demand from both top-down and bottom-up approach to determine the appropriate capacity to build. This is especially important when we have such high forecasted demand from AI-related business.

As the world's most reliable and effective capacity provider, we will continue to work closely with our customers to invest in leading edge, specialty and advanced packaging technologies to support their growth. We will also remain disciplined and thorough in our capacity planning approach to ensure we deliver profitable growth for our shareholders.

Now let me talk about TSMC's global manufacturing footprint update. All our overseas decisions are based on our customers' needs, as they value some geographic flexibility and a necessary level of government support. This is also to maximize the value for our shareholders. With the strong collaboration and support from our leading US customers and the US federal, state, and city government, we continue to speed up our capacity expansion in Arizona. We are making tangible progress and executing well to our plan.

In addition, we are preparing to upgrade our technologies faster to N2 and more advanced process technologies in Arizona, given the strong AI-related demand from our customers. Furthermore, we are close to securing a second large piece of land nearby to support our current expansion plans and provide more flexibility in response to the very strong multi-year AI-related demand. Our plan will enable TSMC to scale up to an independent GIGAFAB cluster in Arizona to support the needs of our leading-edge customers in smartphone, AI and HPC applications.

Next, in Japan, thanks to the strong support from the Japan Central, Prefectural, and local government, our first specialty fab in Kumamoto has already started volume production in late 2024 with very good yield. The construction of our second fab has begun, and the ramp schedule will be based on our customers' needs and market conditions.

In Europe, we have received strong commitment from European Commission and the German federal, state, and city governments. Construction of our specialty fab in Dresden, Germany has also started, and we are progressing smoothly with our plans. The ramp schedule will be based on our customers' need and conditions.

In Taiwan, with support from the Taiwan government, we are preparing for multiple phases of 2-nanometer fab in both Hsinchu and Kaohsiung Science Parks. We will continue to invest in leading edge and advanced packaging facilities in Taiwan over the next several years. By expanding our global footprint while continuing to invest in Taiwan, TSMC can continue to be the trusted technology and capacity provider of the global logic IC industry for years to come.

Finally, let me talk about our N2 and A16 status. Our 2-nanometer and A16 technologies is addressing the insatiable demand for energy-efficient computing, and almost all innovators are working with TSMC. N2 is well on track for volume production later this quarter, with good yield. We expect a faster ramp in 2026, fueled by both smartphone and HPC AI applications.

With our strategy of continuous enhancements, we'll also introduce N2P as an extension of our N2 family. N2P features further performance and power benefits on top of N2 and volume production scheduled for second half '26.

We also introduced A16 featuring our best-in-class Super Power Rail, or SPR. A16 is best suited for specific HPC products with complex signal routes and dense power delivery networks. Volume production is on track for second half '26. We believe N2, N2P, A16 and its derivatives will propel our N2 family to build another large and long-lasting node for TSMC.

This concludes our key message, and thank you for your attention.

QUESTIONS AND ANSWERS

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Thank you, C.C. This concludes our prepared statements. (Operator Instructions) Should you wish to raise your question in Chinese, I will translate it to English before our management answers your question. (Operator Instructions) Now let's begin the Q&A session. Operator, can we please proceed with the first caller on the line. Thank you.

Operator

First one, Gokul Hariharan, JPMorgan.

Gokul Hariharan - *JPMorgan Chase & Co - Analyst*

So on the AI front, I think you have met with pretty much everybody who is driving the Gen AI revolution over the last couple of months. And as you said, everybody seems to be a lot more positive. I think we gave a guidance of mid-40s data center AI growth CAGR earlier this year until 2029. Anything that you see which should kind of change that number? Definitely feels like the growth today seems to be much stronger.

And related to that, you did talk about the very detailed capacity expansion planning that TSMC does. In past technology cycle, TSMC CapEx has gone up significantly to prepare for the next upgrade or next leading-edge node.

But in this cycle, TSMC revenues have grown 50% from the previous peak in '22, CapEx has only grown about 10%. So how should we think about the CapEx over the next couple of years? I know that you're not giving new guidance yet, but I just wanted to understand like there are we looking at much higher CapEx in the next couple of years, given all these conversations you've had? And I have a follow up after that. Thank you.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. So Gokul's first question -- sorry, Gokul, let me summarize for everyone's benefit. So again, he wants to know, firstly, related to the AI-related demand that TSMC works with many, if not everyone, who is doing AI. And many of the customers seem to be even more positive today. So I guess you would like to ask C.C. sort of what are we seeing or hearing from our customers. And then we had previously said that the next five years from 2024 to '29, we expect AI accelerator to grow at a mid-40s CAGR. Is there any update to this? I think this is the first part, then I'll get to the second part on CapEx.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Well, that's a long question, isn't it. But Gokul, the AI demand actually continue to be very strong and more stronger than we thought three months ago, okay? So in today's situation, we have talked to customers and then we talk to customers' customers. So the CAGR previously we announced is about mid-40s, but it still is a little bit better than that. We will update you probably in beginning of next year. So we have a more clear picture. Today, the number are insane.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Then the second part of Gokul's question related to CapEx. He notes that in the past, when TSMC sees opportunities for higher growth, past cycles or past instances, we would step up the CapEx significantly to prepare to drive the future growth. But he notes, this cycle, actually, though, while CapEx is increasing, the revenue is increasing even faster. So his question really, I think, how do we see this playing out over the next few years, both in terms of the CapEx spend and the growth relative to the revenue growth?

Wendell Huang - *Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President, Finance and Chief Financial Officer / Spokesperson*

Okay. Gokul, every year, we spend the CapEx based on the business opportunity in the following few years. As well as we believe there are business opportunities, we will not hesitate to invest. And if we do our job right, the growth of our business, of our revenue should outpace the growth of the CapEx. And that's what we have been delivering in the past few years.

Now going forward, assuming we're doing -- still doing a very good job, then we will continue to see that happening again. So a company of our size, the CapEx number, it's unlikely to suddenly grow up significantly in any given year. When we continue to invest and our growth is outpacing our CapEx growth, then you see the growth like what we have done in the past few years.

Gokul Hariharan - *JPMorgan Chase & Co - Analyst*

Understood. I know that it is unlikely to drop, but it is also likely to grow quite a bit given what C.C. mentioned in terms of every customer asking you and every customers' customer requesting you for capacity addition?

Wendell Huang - *Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President, Finance and Chief Financial Officer / Spokesperson*

Yeah. As I said, a higher level of CapEx is always going to be correlated with a higher growth opportunity. So as C.C. said, next year looks to be a healthy year, and we are confident on the mega trend that we'll continue to invest.

Gokul Hariharan - *JPMorgan Chase & Co - Analyst*

Maybe one more follow-up question from me. C.C., I think last year also, you gave us an indication of how much CoWoS capacity you would be building. I think you talked about 2x or doubling the CoWoS capacity. It clearly feels like even that is not enough. Could you give us some idea about how much capacity would you be building next year just to get some idea about what you are seeing in terms of AI demand.

And also just to get some understanding of TSMC's data under AI exposure, I think last year, we talked about mid-teens revenues. Where do we end up this year? Do we end up close to like 30% of revenues coming from AI?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. So Gokul, your second question, really, he wants to understand can we provide any detail or colors on the CoWoS capacity plan for 2026 in terms of year-on-year increase? And also in terms of our definition of AI accelerated revenue, the narrow definition, how much will it contribute for 2025 revenue? Is it 30%?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Well, Gokul, this is C.C. Wei again. Talking about the CoWoS capacity, all I can say is continue the three months ago, we are working very hard to narrow the gap between the demand and supply. We are still working to increase the capacity in 2026. The real number, we probably update you next year.

Today, all I want to say about the AI, everything related, like frontend and backend capacity is very tight. We are working very hard to make sure that the gap will be narrower, but what I can say is we are working very hard.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. Thank you, Gokul. I think we need to move on in the interest of time. So operator, can we move to the next participant, please.

Operator

Yeah. Next one, Charlie Chan, Morgan Stanley.

Charlie Chan - *Morgan Stanley - Analyst*

And again, congratulations for a very strong results, C.C., Wendell and Jeff. So my first question is really about your business demand. As C.C. just mentioned, your front-end demand is also very strong into next year. But one of your major customers said that Moore's Law is dead. I think his point is that doing maybe a system-level innovation in thermal, et cetera, can boost up more kind of performance.

So just a kind of a dumb question, how do we reconcile your very, very strong leading-edge demand and the customers continue to migrate to your most advanced nodes, and also you continue to reflect value, whereas the customer continue to think that Moore's Law is dead? Can we get some clarification from TSMC?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

So Charlie's question is very specific, although he wants us to comment on a customer saying Moore's Law is dead. But how do we reconcile this with a very strong leading edge demand into 2026 and also with system-level innovations?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Okay. Charlie, this is C.C. Wei. Yeah, I know my customers, very important customers, say, Moore's Law is dead. But what he means is, it's not only we rely on the chip technology anymore. Now we have to focus on that whole system's performance. So he wants to emphasize the whole system performance rather than just talking about the Moore's Law, which is not enough to meet his requirement.

So again, we work very closely with his people and to design our technology both in frontend and backend and also all the packaging to meet his requirement. That's all I can say.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. Thank you, C.C. Do you have a second question, Charlie?

Charlie Chan - *Morgan Stanley - Analyst*

Yeah, I do, Jeff. Yeah. So I would interpret that as Moore's Law 2.0 that your co-COO, Mr. Cliff Hou, also kind of shared during the SEMICON Taiwan. Anyways, thanks, C.C., for your commentary.

My second question is actually a follow-up from last quarter's same question. Back then, I consult you about China AI GPU demand, right, whether you can seize the market opportunity because China says NVIDIA is also extending their AI infrastructure very rapidly. But given the recent kind of back and forth between US and China, whether China can really import NVIDIA GPU, would that kind of discount your potential long-term growth of the AI CAGR? Is that something that TSMC would worry about?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. So Charlie's second question is related around AI demand and specific to China with the sort of the export control and restriction. His question is, does that impact our ability to address the market opportunity? And will this impact our AI CAGR growth if we are not allowed to fully serve China?

Charlie Chan - *Morgan Stanley - Analyst*

Yeah. I think there's both sides. I mean, in restriction from the US, but also China government kind of discouragement to procure US chips. Sorry for the interruption.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Well, Charlie, to speak the truth, I have confidence on my customers, both in graphics or in ASIC, they are all performing well. And so if the China market is not available, but I still think the AI's growth will be very dramatical and as I said, very positive, and I have confidence that our customers' performance, and they will continue to grow, and we will support them.

Charlie Chan - *Morgan Stanley - Analyst*

So even with a limited opportunity from China for the time being, you are still confident that a 40% CAGR or even higher can be achieved in the coming years?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

You are right.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Operator, can we move on to the next participant, please.

Operator

Yeah. Sunny Lin, UBS.

Sunny Lin - *UBS AG - Analyst*

Congrats on the very strong gross margin. So my first question is how should we think about 2026. I understand we should get better color maybe into January. But just want to get some directional major puts and takes for gross margin trending going to 2026. Especially, how should we think about the gross margin impact from 2-nanometer ramp for 2026?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. So Sunny's first question is regarding gross margin. She would like to know directionally, how do we see the gross margin for next year 2026 in terms of certain puts and takes. And also, if Wendell is able to comment specifically, Sunny, sorry if I heard you right, on the N2 dilution impact, correct?

Sunny Lin - *UBS AG - Analyst*

Yeah, that's right.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. That's her first question.

Wendell Huang - *Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President, Finance and Chief Financial Officer / Spokesperson*

Okay. Sunny. Yeah, it's too early to talk about 2026. But you already mentioned about the N2 dilution. And as all the new node, when they just come out, the N2 will have dilution in our gross margin in 2026. But at the same time, the N3 dilution is gradually coming down, and we expect the N3 to catch up to the corporate average sometimes in 2026.

The other factors include like overseas fabs dilution, which will continue and which we said that it will be about 2% to 3% dilution in the early stage of the next several years. That will also be there. And also, we all saw the dramatic foreign exchange rate movement in the earlier part of this year. There's no control. We don't know when that will be. But every percentage move of dollar against NT will affect our gross margin by 50 -- 40 basis points. So that just gives you some rough idea.

Sunny Lin - *UBS AG - Analyst*

Sorry, if I may. Yeah, a very quick follow-up. And so on 2-nanometer, over the typical 2% to 3% dilution by new node for the first seven to eight quarters of mass production, being a good reference for 2-nanometer as well for 2026.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. So Sunny, a quick follow-up. She wants to know for the 2-nanometer dilution, if we're able to provide any detail? And can she still think about it in terms of seven to eight quarters or six to eight quarters dilution to reach the -- time, sorry, to reach the corporate average?

Wendell Huang - *Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President, Finance and Chief Financial Officer / Spokesperson*

Yeah. Sunny, let me share with you. N2's structure profitability is better than N3, okay? Secondly, it's less meaningful nowadays to talk about how long it will take for a new node to reach the corporate average in terms of profitability. And that's because the corporate profitability, the corporate gross margin moves, and generally, it has been moving upwards. So less meaningful to talk about that, okay?

Sunny Lin - *UBS AG - Analyst*

Got it. No problem, very helpful. My second question, maybe for C.C. Thanks a lot for sharing with us the details on how you think about the capacity expansions and planning. And so my question is now cloud AI is working a lot faster than the prior opportunities like smartphones and PCs.

Yet, I think the demand for cloud AI is also may be harder to forecast. So just wanted to maybe get a bit more color from you that now to the prior rounds of capacity expansions, what is TSMC doing differently versus before? And how do you ensure that while you are ramping up the capacity more quickly, we're still having a good risk control?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. Thank you, Sunny. So Sunny's second question is regarding capacity planning and expansion. In a capital-intensive business, she notes this is very important. But in the past, smartphone and PC megatrends. Today, it's AI and cloud AI. She is wondering, does that make this planning process more difficult to forecast? And what are we doing differently or how do we forecast this to make sure that we are investing appropriately?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Sunny, indeed, right now because of -- I believe we are just in the early stage of the AI application. So very hard to make right forecast at this moment. What do we do differently? There's a big difference because right now, we pay a lot of attention to our customers' customers. We talk to and then discuss with them and look at their applications, be it in the search engine or in social media's application.

We talk with them and see how they view the AI application to those functions. And then we make a judgment about what AI going to grow. And so this is quite the difference. As compared with before, we only talk to our customers and have an internal study. This is different.

Did I answer your question?

Sunny Lin - *UBS AG - Analyst*

Got it. Yeah, yeah, yeah. and looking forward to the CapEx guide in January.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

You're welcome.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

All right. Thank you, Sunny. Operator, can we move on to the next participant, please.

Operator

Next one, Bruce Lu, Goldman Sachs.

Bruce Lu - *Goldman Sachs Group Inc - Analyst*

I think Jensen talked about like 3 to 4 trillion AI infrastructure opportunity by 2030, right? This compared to like $600 billion CapEx recently for this year implies for about 40% CAGR. This is similar to TSMC's guidance for the AI growth, right? But for me, first of all, what I want to know is what is TSMC's view for AI infrastructure growth for the next five years? And what is TSMC's forecast for the token growth rate in the next few years?

TSMC used to provide the semi industry growth, foundry growth and how much TSMC can outperform the industry, right? Given the context, can we assume like TSMC AI-related revenue can track or will track with the CapEx growth of AI or the major cloud service provider? Or should we expect even higher growth rate for TSMC considering you're potentially getting more value out of it?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. Let me try to summarize your question, Bruce. He notes that one of our customers has highlighted a 3 trillion to 4 trillion infrastructure opportunity over the next few years compared to $600 billion current CapEx, implying a 40%-something CAGR growth rate, which is similar to ours. Bruce's question is, he wants to know what is TSMC's forecast or view for AI infrastructure growth. He would also like to know what is TSMC's forecast or view for the token growth.

And then what is TSMC's AI-related revenue growth? Can it track that of the cloud service providers? And his question is, should it be even higher -- shouldn't it be even higher given the value that we capture? That's actually several questions, but is that correct, Bruce?

Bruce Lu - *Goldman Sachs Group Inc - Analyst*

That's right.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Well, Bruce essentially, just want to know how accurate that we can predict the AI's demand. We give you a number, roughly 40 -- the mid-40s CAGR, not including all the infrastructures built up and also aligned with our major customers' forecast for their view.

More than that, I think if we are talking about the tokens, the number of tokens that increased is exponential. And I believe that almost every three months, it will be exponentially increased. And that's why we are still very comfortable that the demand on leading edge semiconductor is real.

And as I continue to say that we look at all the demand and look at our capacity expansion, we need -- TSMC needs to work very hard to narrow the gap. That's what we are doing right now. Exact number that we probably will share with you in next year when we have a clear picture.

Bruce Lu - *Goldman Sachs Group Inc - Analyst*

I just had a quick follow-up. I'll use that as my second question anyway. I think the question is that the token growth seems to be substantially higher than the AI-related revenue guidance on TSMC, right? So the gap is actually enlarging if you compound in the outer years, right? That's why -- that's the differences between the -- what we see for the current TSMC outlook and the potential token consumptions, right? So the gap is -- continue to see it enlarging. How do we solve this? And do we really see that as a major issue?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. So Bruce's second question, which is a follow-on from his first, is that the token growth is growing at a much higher rate or exponentially than TSMC's AI revenue growth, and this gap will only enlarge or widen in the next few years. So he wants to know -- sorry, Bruce, basically, what's the implication to TSMC or how do we see this? Is that correct?

Bruce Lu - *Goldman Sachs Group Inc - Analyst*

Correct.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Okay, Bruce. You are right. You are right. The tokens and the number of tokens have increased exponentially, it's much, much higher than TSMC's CAGR as we forecasted. And let me tell you that, first, our technology continues to improve.

And so our customer moving from one node to the next node so that they can handle much more tokens in their basic fundamental calculation. So that's one thing. We progressed very well from one node into the other node. And our customers are working with TSMC to continuously -- to improve their performance. And that's why when we say that we have about 40, 45 CAGR, but then the token number are exponentially increased because of our customer and TSMC's technology combined that can handle much more or much efficient than before.

Did I answer your question?

Bruce Lu - *Goldman Sachs Group Inc - Analyst*

So you believe your node migration plus your customer design change can fulfill or can meet the exponential growth for the token consumption?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Exactly.

Bruce Lu - *Goldman Sachs Group Inc - Analyst*

Is that the conclusion?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Yeah. (multiple speakers)

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Bruce, that was your second question. Operator, we need to move on. Thank you, Bruce.

Operator

Next on, Laura Chen.

Laura Chen - *Citigroup Inc. - Analyst*

Appreciate, C.C., sharing your view on TSMC strategy on the AI capacity planning. I think along with the very strong advanced node demand, I believe that advanced packaging like CoWoS is also one of the focus for your AI clients they are now looking for. I recall that TSMC previously also planned to expand advanced packaging in Arizona.

So can you give us updates here? And also, I mean, for the time being, the very stretched demand at the moment. So would TSMC work more closely with your OSAT partner to fulfill the strong demand at the same time? That's my first question.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. Thank you, Laura. So her first question is on capacity planning. We have talked earlier on the call about the planning for leading node. She wants to understand also on the CoWoS capacity and specifically, I guess, advanced packaging in Arizona and how do we work with our OSAT partners.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Okay. We have announced our plan to build two advanced packaging fabs in Arizona and to support our customers. But at the same time, actually, right now, we are working with the one OSAT, a big company and our good partner, and they are going to build their fab in Arizona, and we are working with them because they're already breaking ground. And the schedule is earlier than TSMC's two advanced packaging fabs. And we are working with them. And our main purpose is to support our customers so we can made in the US.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Laura, do you have a second question?

Laura Chen - *Citigroup Inc. - Analyst*

Yeah. Certainly, we see that the advanced node, advanced packaging are quite strong. And also at the same time, we are also seeing that the migration is also happening for N2 and N3. So just wondering that from the revenue growth perspective, I know it's still early to predict next year based on your guidance, but I'm just wondering, will it be more driven by the ASP increase because of the technology migration? TSMC will be able to sell in your value or more that will be driven by the capacity or volume growth on both N2 ramp-up?

And also, C.C., you mentioned some of the mild cyclical recovery. So that may also drive some of the volume growth into next year. So just wondering, like if you look at the growth outlook, it will be more driven by the technology upgrade ASP increase or also more like a volume? That's my second question.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. So Laura's, again, second question is looking at 2026. She would like to understand what will be the key drivers of the growth? Is it more from the technology mix migration, things like N2? Is it more from ASP upgrade? Or is it more from just pure wafer volume growth?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Laura, all the above. All right? You knew it, right?

Laura Chen - *Citigroup Inc. - Analyst*

There also a follow up because we see that actually N3 is very tight. And at the same time, we are also kind of expanding on N2. And C.C., you previously mentioned that you will migrate some of the even N7, N6, and also N5, like -- but specifically on N3, do we also need to add more capacity into next year on newly added capacity?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Sorry, Laura is saying that will -- next year, will we continue -- sorry, Laura, if I understand correctly, will we need to add new capacity? Will we continue to do conversion? What will we do to support the very strong trend we see at leading edge next year.

Laura Chen - *Citigroup Inc. - Analyst*

Right. Yeah.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Well, let me answer that question. We continue to optimize the N5, N3 capacity to support our customers. For the new building for the N3 capacity to expand, we put the new building for the N2 technology. That's today's plan. Okay.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Thank you, Laura. Operator, in the interest of time, we'll take the questions from the last two participants, please. Thank you.

Operator

Yeah. Next one, Krish Sankar, TD Cowen.

Krish Sankar - *Cowen and Company LLC - Analyst*

My first one is, C.C., about 10 years ago, back in the smartphone days, TSM talked about the revenue opportunity for TSM per phone. I was wondering in today's world, can you talk about how much 1 gigawatt of AI data center capacity could translate in terms of wafer demand or revenue for TSMC? And then I have a follow-up.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. So Krish's first question, he noted in the past in the smartphone megatrend, we talked about the content per phone opportunity for TSMC. So now with AI, is there a way to frame or quantify 1 gigawatt of data center capacity, what is the revenue opportunity for TSMC?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

We -- recently, as I said, AI demand continue to increase. And then when customers say that 1 gigawatt, they need about -- invest about $50 billion. How much of TSMC's wafer inside? We are not ready to share with you yet because of different from different approaches.

Krish Sankar - *Cowen and Company LLC - Analyst*

And then a quick follow-up.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Yeah, excuse me, I just want to say that right now, it's not only one chip. Actually, it's many chips together to form a system, right?

Krish Sankar - *Cowen and Company LLC - Analyst*

Got it. Very helpful for that. Then a quick follow-up. Obviously, you first forecast long-term trends and then build capacity towards that. I'm kind of curious, when you look at the AI demand over the next several years, from a TSMC angle, does it matter whether it's -- that demand is coming through a GPU or an ASIC? Does it have an impact on your revenue or gross margin mix?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. Thank you, Krish. So his second question is, again, with our business outlook. Again, we forecast the long-term trends. We plan our capacity, as C.C. said, in a thorough and disciplined manner. His question is, what are the implications, for example, of -- I believe you said GPU versus ASIC in terms of the AI market? Do we have a preference or what? Is there a difference for TSMC? Is that correct, Krish?

Krish Sankar - *Cowen and Company LLC - Analyst*

That's right. The impact to revenue and gross margin, whether it's a GPU or an ASIC.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Right. Okay.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Well, Krish, whether with it's GPU or it's an ASIC, it's all using our leading-edge technologies. And from our perspective, we are working with our customers, and we all know that they are going to grow strongly in the next several years. So no differentiation in front of TSMC. We support all kind of types.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Operator, can we take -- thank you, Krish. So we'll take the question from the final participant, please.

Operator

Last one, Arthur Lai, Macquarie.

Arthur Lai - *Macquarie Research Ltd - Analyst*

Congrats on a strong outlook. I'm Arthur Lai from Macquarie. So my question is about competition. So C.C., you define the Foundry 2.0 market. And I wonder what's a strategic initiative that TSMC's undertaking to further strengthening your competitive landscape and also in this broader ecosystem. So some context, I got the question from the US investor as your clients have announced they invest in Intel.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. So Arthur's question is around competition. In the Foundry 2.0 landscape, what strategic initiatives, what things are TSMC focusing on to further strengthen our competitive advantage? I think the last part, Arthur, you're asking in the environment where one of our competitors in the US, how do we focus on the competition? Is that correct?

Arthur Lai - *Macquarie Research Ltd - Analyst*

Yeah.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

Okay. Let me answer that one. When we introduced our Foundry 2.0, we set the purpose that -- as I said, one of my customers said that system performance is very important in these days, not only a single chip. And also, let me share with you that our advanced packaging revenue is slightly over (corrected by company after the call) 10% and is significant in our revenue, and it's important for our customers. So that's why we introduced Foundry 2.0 to capitalize this foundry business. Not as usual, previously, we only look at it the frontend portion. Now it's the whole thing, the frontend, the backend and also important for our customer. That's why we introduced 2.0.

Talking about our competition in the U.S. Well, the competitor happened to be our customer, very good customer. So in fact, we are working with them to -- for their most advanced product. Other than that, I don't want to make any more comment.

Arthur Lai - *Macquarie Research Ltd - Analyst*

Can I ask one more question?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Yeah, you have two. So your second question. Sure.

Arthur Lai - *Macquarie Research Ltd - Analyst*

Yeah. My second question is very quick on the end demand. So I recall, C.C., you, last time, mentioned that we should also monitor and worry about a prebuild, especially in the consumer electronics. And then this quarter, our number suggests that there's a QoQ 19% growth in the smartphone. So my question is, do you still worry about the prebuild?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

All right. So Arthur's second question is on smartphone. Do we -- are we concerned about prebuild or sort of, I guess, pulli-in prebuild from customers in that regard?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman & Chief Executive Officer*

No. We don't worry about the prebuild because of -- when you have a prebuild, you have inventory. And in this stage, the inventory already go to the very seasonal level and very healthy. So no prebuild.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director, Investor Relations*

Okay. Thank you, C.C. Thank you, Arthur. Thank you, everyone. So this concludes our Q&A session.

Before we conclude today's conference, please be advised that the replay of the conference will be accessible within 30 minutes from now. The transcript will become available 24 hours from now, and both are going to be available through TSMC's website at www.tsmc.com.

So thank you, everyone, for joining us today. We hope you'll continue to stay well, and we hope you will join us again next quarter and early 2026. Thank you, and have a good day.