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PRESENTATION

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

(Spoken in Foreign Language)

Good afternoon, everyone, and welcome to TSMC's second-quarter 2026 earnings conference and conference call. This is Jeff Su, TSMC's Director of Investor Relations and your host for today.

Today's event is being webcast live through TSMC'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 second quarter 2026, followed by our guidance for the third quarter 2026. 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 both the floor and the line for the question-and-answer session.

As usual, I'd 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 maturity 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 microphone over to TSMC CFO, Mr. Wendell Huang, for the summary of operations and the current quarter guidance.

Wendell Huang - *Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President 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 second quarter of 2026. After that, I will provide the guidance for the third quarter of 2026.

[Second quarter revenue increased 12.0 percent sequentially in NT dollars, supported by strong demand for our leading-edge process technologies. In US dollar terms, revenue also increased 12.0 percent sequentially to 40.2 billion, at the high-end of our second quarter guidance. Gross margin increased by 1.5 percentage points sequentially to 67.7%, primarily due to cost improvement efforts and a higher capacity utilization rate, partially offset by margin dilution from overseas fabs].

[Total operating expenses accounted for 7.8% of net revenue, as compared to 8.3% in 1Q26, mainly due to operating leverage. Thus, operating margin increased by 2.2 percentage points sequentially to 60.3%. Total non-operating items were a gain of 96 billion NT dollars, an increase of 67 billion sequentially. The increase was mainly due to disposal and mark-to-market gains of 63 billion on Vanguard shares, which contributed 2.24 NT dollars to second-quarter EPS. Overall, our second quarter EPS was 27.25 NT dollars, and ROE was 45.9%]. (added by company after the call)

Now let's move on to revenue by technology.

2-nanometer process technology contributed 3% of wafer revenue in the second quarter. 3-nanometer, 5-nanometer, and 7-nanometer accounted for 30%, 33%, and 11%, respectively. Advanced technology, defined as 7-nanometer and below, accounted for 77% of wafer revenue.

Moving on to revenue contribution by platform.

HPC increased 20% quarter over quarter to account for 66% of our second-quarter revenue. Smartphone decreased 4% to account for 22%. IoT increased 4% to account for 5%. Automotive increased 15% to account for 4%. DCE increased 5% to account for 1%.

Moving on to the balance sheet, we ended the second quarter with cash and marketable securities of TWD3.5 trillion or USD110 billion. On the liability side, current liabilities increased by TWD144 billion quarter over quarter, mainly due to the increase of TWD58 billion in accounts payable and the increase of TWD48 billion in accrued liabilities and others.

In terms of financial ratios, accounts receivable days increased by 3 days to 29 days. Inventory days increased 7 days to 87 days, primarily due to the ramp of N2 technology.

Regarding cash flow and CapEx. During the second quarter, we generated about TWD783 billion in cash from operations, spent TWD496 billion in CapEx, and distributed TWD156 billion for third quarter 2025 cash dividend. Overall, our cash balance increased TWD99 billion to TWD3.1 trillion at the end of the quarter.

In US dollar terms, our second quarter capital expenditures totaled USD15.7 billion.

I finished my financial summary. Now let's turn to the current quarter guidance.

Based on the current business outlook, we expect our third-quarter revenue to be between USD44.6 billion and USD45.8 billion, which represents a 12% sequential increase or a 37% year-over-year increase at the midpoint. Based on the exchange rate assumption of USD1 to TWD32, gross margin is expected to be between 65% and 67%, operating margin between 56% and 58%.

This concludes my financial presentation.

Now let me turn to our key messages.

I will start by talking about our second-quarter '26 and third-quarter '26 profitability.

Compared to the first quarter, our second quarter gross margin increased by 150 basis points sequentially to 67.7%, slightly ahead of our guidance, primarily due to cost improvement efforts and a slightly higher overall capacity utilization rate, partially offset by dilution from our overseas fabs. We have just guided our third quarter gross margin to decrease by 1.7 percentage point to 66% at the midpoint, primarily as we expect the steep ramp-up of our 2-nanometer technology to dilute our gross margin by about 3 to 4 percentage points. This dilution is expected to be partially offset by very strong demand for our leading-edge technologies and continued cost improvement efforts, including productivity gains and across-node capacity optimization.

Looking at the second-half of the year, given the six factors that determine our profitability, there are a few puts and takes that I would like to share.

First, we expect a steep ramp-up of our 2-nanometer to dilute our gross margin by about 3 to 4 percentage points in the second half of the year. Furthermore, as the scale of our overseas expansion grows, we continue to forecast the gross margin dilution from the ramp-up of 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. On the other hand, demand for our leading-edge technologies is very strong.

In addition, we continue to leverage our manufacturing excellence to generate more wafer output and drive greater across-node capacity optimization in our fab operations to support our profitability. Finally, we have no control over the foreign exchange rate, but that may be another factor.

Next, let me talk about our 2026 capital budget.

At TSMC, a higher level of capital expenditures is always correlated to higher growth opportunities in following years. With our strong technology leadership and differentiation, we are well positioned to capture the multi-year structural demand from the industry megatrends of 5G, AI, and HPC.

Given the continued strong structural demand from our customers, including the newly emerging agentic AI market, we have decided to raise our full-year 2026 capital budget to be between USD60 billion and USD64 billion as we continue to invest heavily to support our customers' growth.

We always collaborate closely with the tool suppliers well in advance to prepare the capacity, whether it is a strong upcycle or downcycle, just like our customers collaborate with us well in advance to plan our capacity. Thus, we do not foresee any bottlenecks to our capacity expansion plans.

About 70% to 80% of the 2026 capital budget will be allocated for advanced process technologies, about 10% will be spent for specialty technologies, and about 10% to 20% will be spent for advanced packaging, testing, mask making and others.

Even as we invest for the future growth with this level of CapEx spending in 2026, 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.

In 2025, we paid TWD467 billion in cash dividends, up 28.6% year over year as TSMC shareholders receive a total of TWD18 cash dividend per share. In 2026, they will receive TWD24 per share, up another 33% year over year, and we expect a continued and increasing cash dividends per share in 2027 as well.

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

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

Thank you, Wendell. Good afternoon, everyone.

First, let me start with our near-term demand outlook. We concluded our second quarter with revenue of USD40.2 billion, at the high end of our guidance in US dollar terms, driven by strong demand for our leading-edge process technologies.

Moving into third quarter, we expect our business to be supported by continuous strong demand for our leading-edge process technologies, including the steep ramp up of our 2-nanometer technology. Looking ahead, we observe consumer and the price-sensitive end-market segment are being challenged due to the impact of rising component prices and macroeconomics uncertainties. As such, we are being prudent in our business planning while focusing on our fundamentals of our business to further strengthen our competitive position.

Having said that, AI-related demand continues to be extremely robust. The AI megatrend continues to drive the need for more and more computation, which supports the robust demand for leading-edge silicon. Our customers and customers' customers, who are mainly the cloud service provider, continue to provide us with their very strong signal and positive outlook. Thus, our conviction in the multi-year AI megatrend remain very high. Supported by our robust technology differentiation and the broad customer base, we now expect our full-year 2026 revenue growth to be slightly above 40% year over year in US dollar terms.

Now let me talk about the acceleration of agentic AI.

The AI market continues to be very dynamic. The emergence of agentic AI is leading to a resurgence in the role of CPUs in AI data centers, which drives more silicon demand in addition to AI accelerators. We believe this is positive for TSMC, as no matter what CPU approach is taken, whether it's x86, ARM-based, or RISC-V architecture, they are almost all TSMC's customers. We are already collaborating closely with our CPU customers and working to support them with the most advanced technologies and necessary capacity, so they can capture agentic AI market opportunities.

Next, let me talk about TSMC's capacity expansion strategies.

To address the structural increase in overall long-term semiconductor market demand profile, TSMC collaborates closely with our customers and our customers' customers to plan our capacity. Given the fundamental complexity of leading-edge technologies and the design-in and lead time involved, we also have a very good idea of their multi-year product roadmap and production plans.

This is important because it takes more than five years to develop the technology and product, prepare the capacity, and ramp it up to high-volume production. Internally, TSMC employs a disciplined capacity planning system to assess the market demand from both a top-down and bottom-up approach. This is a continuous and ongoing process. Based on our assessment, we are stepping up our CapEx investment to increase our capacity to support our customers' future growth.

Now, with a strong collaboration and support from our leading US customers and the US federal, state, and city governments, we would like to announce an additional USD100 billion investment in Arizona. This is to build several more semiconductor logic wafer fabs for 2-nanometer and below technologies, as well as advanced packaging fabs, to support strong multi-year demand from our leading US Customers. We believe this investment will help to further foster the development of the US semiconductor ecosystem, strengthen the supply chain, and support an increasing number of high-tech, high-paying jobs in the United States.

At the same time, we are building 13 leading-edge and advanced packaging fabs in Taiwan over the next several years, and we will continue to further invest in Taiwan. Therefore, TSMC's semiconductor technology and manufacturing will continue to play a pivotal role in supporting the global semiconductor industry, while unleashing our customers' innovation.

Now let me talk about the current N3 capacity expansion.

We are executing well on our global plan to add three additional 3-nanometer fabs, one in Taiwan, one in Arizona, and one in Japan, to support the robust multi-year pipeline of demand for 3-nanometer technologies. In addition to all the new fabs, we continue to convert 5-nanometer tools to support 3-nanometer capacity in Taiwan. We are also leveraging our manufacturing excellence to drive greater productivity across our fab in all locations to generate more wafer output. We are also focusing on capacity optimization across nodes, which includes flexible capacity support among N7, N5, and N3 nodes. In summary, we are using multiple levers to do everything we can, wherever we can, however we can, to maximize the support to all our customers.

Now, let me talk about our mature node strategies.

TSMC's strategy at mature node has not changed. Our first priority is to fully support our customers, and now we continue to increase, not decrease, our mature node capacity in the higher value-added segment. For example, we are increasing our mature node capacity through JASM Fab 1 in Japan, for CMOS Image Sensor application, and ESMC in Germany for automotive and industrial applications. In today's market, outside of specific areas such as power management IC and CMOS image sensor, the mature node demand in other commodity areas is not that strong. Thus, TSMC will continue to focus on the higher value-added and strategic segments, while ensuring we have the necessary capacity to support our customers' growth.

Finally, let me talk about our A14 status.

As I mentioned a few minutes ago, the complexity of leading-edge technology continues to increase. The lead time to develop a new technology such as A14, building the capacity, and then ramp it up now takes five to seven years. There are no shortcuts. Our A14 technology represents the second generation of nanosheet transistors and delivers another full-node stride from N2, with performance and power benefits to address the insensible need for high-performance and energy-efficient computing. Compared with N2, A14 will provide a 10 to 15% speed improvement at the same power or 25 to 30% power improvement at the same speed, and close to 20% chip density gain. A14 technology development is on track and progressing well. Internal product-like vehicle demonstrated close to 90% device performance and close to 90% 256 megabits SRAM yield. We are observing a strong level of customer interest and engagement on both smartphone and HPC/AI applications, and customer new tap-out activity is ongoing and ahead of schedule. Risk production will start in 2027 and volume production is scheduled for 2028. With our strategy of continuous enhancement, we also introduced A13 and A12 as extension of the A14 family. A13 represents a further advancement of our A14, achieving an over 6% die area saving through an innovative 97% optical shrink. Through continuous design-technology co-optimization, A13 also delivers further performance and power efficiency improvement. A13 design rules are backward compatible with A14 to ensure smooth IP migration.

We also introduced A12, which will bring our innovative Super Power Rail technology to the A14 platform for superior performance, power, and area benefits. Both A13 and A12 are scheduled for volume production in 2029. We believe A14 and its derivative technologies will propel our A14 firmly to be an even larger and long-lasting node for TSMC than N2, just like a 2-nanometer technology is a larger and longer-lasting node than 3-nanometer, and help further extend our technology leadership position well into the future.

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

QUESTIONS AND ANSWERS

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

Thank you, C.C. So this does conclude our prepared statements.

(Event Instructions)

Sunny Lin, UBS.

Sunny Lin - *UBS AG - Analyst*

Congrats on the very strong performance and outlook.

So number one, I'll do a double-click on the CapEx. So very encouraging CapEx outlook, and I do think it's essential that TSMC showcase a stronger determination in capacity expansion, given the stronger demand and the very tight supply. And so beyond 2026, I think every large client also wonder how aggressive TSMC is planning for CapEx. And so back in the COVID super cycle, TSMC did provide a three-year CapEx outlook by then. And so I wonder at this point, would it be possible for you to share any color, maybe for the coming three years CapEx?

Thank you.

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

Okay. So Sunny's first question is regarding CapEx. She does believe it's important/essential to show our determination to support our customers with these large CapEx investments. So she wants to know, do we have a three-year CapEx guidance, '26, '27, '28, similar to what we did back in 2021?

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

Hey, Sunny, we do not have a number to share with you. But as you know, we invest CapEx this year for the future business opportunity and as long as there are business opportunities, we will not hesitate to invest. As you can hear from our prepared remarks that our conviction in the megatrend, AI megatrend multi-year is very strong, and we are stepping up the CapEx, including increasing this year's CapEx.

Last time, we said our CapEx in the next three years will be significantly higher than the CapEx in the past three years. Now the CapEx in the next three years will be even more significantly higher than the past three years.

Sunny Lin - *UBS AG - Analyst*

Yeah, maybe let me follow-up on CapEx from another -- yeah, sure. So you just announced additional USD100 billion CapEx in the US, and I think that's pretty important for you to secure the business in the US as well. And so now with total USD265 billion CapEx in Arizona, what's your current plan to bring on the capacities in Arizona in the coming few years?

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

Okay, so Sunny's second question is on to C.C. said investing an additional USD100 billion in Arizona based on the strong demand from our customers. So the total investment now is USD265 billion. What is the schedule, time frame, or the plan for these investment? Is that correct, Sunny?

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

Sunny, the schedule will depend on the market situation, you know that. So today's situation. The makeup trend is so strong so that we announce additional USD100 billion investment in Arizona.

How many fabs? Many.

So actually, let me say that there's probably additional four or more fabs will be built.

Sunny Lin - *UBS AG - Analyst*

And that's combining frontend backend.

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

Yes.

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

Charlie Chan, Morgan Stanley.

Charlie Chan - *Morgan Stanley - Analyst*

So first of all, so congrats for a very strong outlook.

My first question is really about the foundry competition. I understand that there's no shortcut for a newcomer like TeraFab, but how about like Samsung Foundry, right? They got a huge profit from memory business. Intel got a US policy support. So I'm not sure how TSMC is going to address those competition because apparently several US companies are engaging with those industry peers.

And recently, actually yesterday, ASML just announced to expand the EUV capacity for 2028. Would TSMC worry that your competitors to take more slots and build a large capacity in the future to compete with your leading edge business?

Thank you.

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

Okay, so Charlie's question is competition from two angles. One, he does note, C.C. said, foundry competition, no shortcuts, but he says, according to the news, many of our customers are engaging with our foundry competitors. One of them in Korea is making huge amounts of money these days. Another one may have the US Government policy support. So the first part of this question, how do we see the competition and threat of customers moving to our competitors, number one?

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

Well, let me say that. Yes, one of my competitors in South Korea, they make a huge amount of money. And I'm jealous about it. And then the other one in the US, they got the very strong US Government support. We also got the government support, by the way, although we don't announce it. However, let me share with you, as we said, there is no shortcut.

What does that mean? Meaning that in this semiconductor industry, you have to go back to fundamental. Governments are here is welcome. Really, we also appreciate that. A lot of money, of course, that's nice to have. But the most important thing, as we continue

to say, is the technology, manufacturing, and customer trust. These three fundamentals never changed for my 30-some, 40-years career. It's always the most important thing. And that's always TSMC's secret recipe to win the business.

So from the competition point of view, choosing a technology, ramping it up, it's not buying milk from 7-Eleven. Well, I'm using that, I'm quoting the sentence from my customer anyway. It says that you're choosing a kind of technology partner, it's no shortcut. You need to understand the technology. You need to really utilize it using the test chip and then something and work together and then prepare the capacity and ramp it up. That's what I say, it takes about five years.

It's not that today, you think this milk is better, you go to the next store, it's a 7-Eleven. You don't like it, you go to another store, no. So that's my answer.

Charlie, is agree.

Charlie Chan - *Morgan Stanley - Analyst*

Yeah, so hope you can buy more milk so other people cannot get it.

Thank you. Yeah, so let me switch gears to a more exciting side. Just said, you see very strong signals from customers. You also revise of the full-year revenue guide. Are you ready to revise the five-year revenue CAGR, especially the AI semi CAGR? I remember it was like high 50%. But here comes the question, right, that agentic AI demand is so strong. CPU is a great opportunity for TSMC. But how about a kind of memory cost increase, right? It's kind of a big chunk of this kind of AI CapEx. So what's the update of the AI semi CAGR and how should we look at the contents of the AI semi related to TSMC's growth.

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

So, Charlie, second question is regarding the AI-related demand.

We do continue to see very strong and positive signals from our customers, customers' customers. We've revised up our full year. So his question is around our AI CAGR guidance that we gave in January on a five-year period mid- to high-50s CAGR growth. He's wondering if there's any update to that.

Agentic AI, a new opportunity, what is our definition of AI accelerator, do we include that? And what is the CAGR?

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

Charlie, if you read our message that we continue to invest more, we increase the CapEx, with a good reason. So if you're asking about the AI's CAGR, let me give you not a number, but it's stronger and stronger and stronger. So we don't give you the number today because it continues to increase, so we don't know how to answer this question. But stronger than what we said before.

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

Arthur Lai, Macquarie.

Arthur Lai - *Macquarie Research Ltd - Analyst*

First, congrats on the strong execution and performance.

My question is regarding the new advanced packaging technology. We noticed that especially the EMIB-T is gaining traction, so how would TSMC react to this request?

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

So Arthur's first question is on advanced packaging and competition, I guess very simply put. EMIB-T, in his view, is gaining traction. So how do we see the competitive threat from this?

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

Well, let me say that our packaging capacity is so tight that now it limits my customers' growth. So we welcome that additional flexibility in the market and so that will help TSMC's frontend wafer business growth, which is a majority part of TSMC's business. The technology looks good, according to the newspaper, and we hope they will be successful and so that share some of the loading from TSMC.

Today, we're working very hard to shorten the gap between the demand and the capacity. And so, as I said, we welcome, have these additional alternatives and so the flexibility for my customer.

Arthur Lai - *Macquarie Research Ltd - Analyst*

Thank you. That makes a lot of sense.

So a follow-up. So this is a new technology, right? So if your clients, they ask your support and our value is support our customer success, right, how TSMC will handle this special request?

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

Sorry, your question is (multiple speakers) --

Arthur Lai - *Macquarie Research Ltd - Analyst*

If these technologies have some small problem and then ask our company to support, so how is our company accommodate it?

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

So Arthur question's is, if there is some issues with this technology, do we have a-- or I don't know how to say it, is there an alternative plan?

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

Let me answer the question.

Our number one is to support our customers' success. So whatever that we can help our customers, the business, we will do it. Does that answer your question? Okay.

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

Let's come back. We'll take one more here and then we'll go online and then back to the room.

Yeah, Gokul.

Gokul Hariharan - *JPMorgan Chase & Co - Analyst*

First question on, maybe since you're not wanting to give a longer-term numerical guidance, could you talk to us a little bit about the philosophy of how you are expanding capacity? Obviously, customer feedback, customers' customers' feedback is important.

Do you also consider competitive pressure? Because as an outright market leader, having like undersupply for a very long period of time is not really desirable for TSMC, right? You probably want a market which is more balanced. So when you think about your capacity expansion, like how long do you think it takes to fulfill the demand as you see right now? That's one.

And second, chips obviously is the current shortage, but there is also a lot of discussion about data center delay, power capacity being available. So could you also share some thoughts on how you are layering in that kind of concerns? Because you don't want your chips to be available, but having to wait for that data center deployment to happen. So just to understand how that goes into your planning framework as well.

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

Thank you. So Gokul's first question is, again, how do we plan our capacity and determine the capacity expansion plan. Certainly, we take into consideration the demand, multi-year demand from our customers and customers' customers, but do we also consider the competitive pressures from competitors' building capacity? Is that part of our calculus to expand the capacity, one?

And then also, what about things outside of chips like data center delays or power, these type of deals?

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

Gokul, that's a good question.

Definitely, every time when we think about business, we consider the competition. That's number one. And then we look at where we are and then we decide a bottom-up and then top-down assessment of those demand. Those are the typical things, I mean, in our daily life. So we make a lot of judgment and then we be more careful. We talk to customers and customers' customers. Those are the CSPs. And then we get all their input for the demand and then we make a judgment. Now remember that I believe every customer tell me the truth, everyone. You put all the truth together, it's not a truth. So we have to make some of the judgment. You know what I mean? Since you are laughing. Because all the customers are very aggressive, right? That's the CEO's job. CEO got to be aggressive. So they give me the number of their demand and I believe they try their best to tell me the truth. So I put all together, all the truth together is not a truth. Mark down that word.

So yes, we do a very careful judgment. Might not be correct, but we did carefully and because this is a big money, right? This year, we say we increased the capex from USD52 billion to USD56 billion, now USD60 billion to USD64 billion. And you bet that will continue to increase. It's a big money, so we do it carefully.

So we did all the assessment and that lead to your second question. Are we sure that we deliver the chips to our customer and they were not put into inventory? So actually, we are checking the AI data centers' progress, the building, the location, the demand, the racks. We checking all that to make sure that TSMC's chips will not be put in inventory.

That answer your question.

Gokul Hariharan - *JPMorgan Chase & Co - Analyst*

Yeah, that's clear. So C.C. So do you still believe even end of next year, we are still going to be running short of supply even with this elevated capacity build-out plans?

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

You want me to give you a guarantee, right? Let me say that.

I believe from this day on all the way to probably 2029, 2030, the demand is very strong. Whether in between there's a dip or not, I'm not very sure. But the trend is so robust that I believe we are witnessing a kind of a new industry. I would like to say the new industry called AI industry, which is so common in our daily life because it is going to affect our automotive, affect the humanoid robot, and also impact to all the industry. So by the amount of money we put in, I mean, including all the CSPs, this is alone is a very important new industry to the world. And so the demand will be there. And the fundamental thing is semiconductor chips and most of them in TSMC.

Gokul Hariharan - *JPMorgan Chase & Co - Analyst*

My second question is on your profitability. So CC you joked that you are definitely jealous of memory competitors' margins. But it definitely feels like profitability-wise, longer-term foundry, especially leading edge foundry, should be higher than memory, looking at number of competitors out there.

So as you are investing for a lot of your customers, how is that discussion going? Because you are no longer the most profitable semiconductor manufacturing company at this point in time. So you probably have less pressure in terms of passing on your value and capturing your value right now, compared to maybe one year back.

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

Okay, so Gokul's second question is on profitability and pricing to a certain extent. Of course, some of the memory makers are making very good profitability and margins today, but he notes the role of foundry could be even more value in TSMC's role as well. So what should be the right way to think about the long-term profitability for a foundry? Should it be better? And then I guess really pricing into this? What type of pricing approach do we want to take?

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

Yeah, Gokul, your question is actually simple. What is the wafer pricing strategy for TSMC and what kind of gross margin we should have? The higher, the better, of course. But we are a partner, a partner meaning that I say many times, our customer got to be successful. I don't want to squeeze them out from the market. And besides, we are a very trustable company with our customers.

So we don't suddenly increase our price by which I like to have 4x or 5x. You cannot survive for that kind of for -- for your customer to survive for that kind of price increase. So we earn our value and we make sure that our profit, our gross margin is enough for our long-term sustaining expansion, that's to the benefit of my customers and TSMC also, that's our philosophy.

So yes, I'm really jealous about memory company's 86% gross margin. 86 -- 68, I'll be happy about that. All right. Anyway, so I answered the question. We are very trustable.

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

Operator, can we take the next two questions from participants on the line, please?

Operator

Jim Fontanelli, Arete.

Jim Fontanelli - *Arete Research LLC - Analyst*

Could I ask about the risk that you see around customer concentration, as AI demand continues to significantly outgrow other end markets? I think your exposure to your top five customers is becoming meaningfully larger than at any point in your history. So I'd just like to understand how you see that risk.

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

So Jim's first question is risk around customer concentration. We have large customers that are getting larger. Are we worried that we have too many big customers or the customer concentration?

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

No, that's not our concern. Besides what you say, the customers are growing bigger and bigger, we are very happy about it. And some of the customers are growing very fast. So it's not, Jim, it's not what you say that the bigger customer is going bigger and bigger. No, I mean, there's a lot of new players in the AI industry.

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

Do you have a second question?

Jim Fontanelli - *Arete Research LLC - Analyst*

Yes. So we're seeing your direct customers put capital into both financing, investing and investing in AI demand. Is that something that TSMC is considering?

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

So, Jim's second question, he knows some of our customers are helping to invest in their customers.

Jim, if I understand you right correctly, you're asking if TSMC, if this is an approach we would take to invest in our customers. Is that correct? Or financing and investing?

Jim Fontanelli - *Arete Research LLC - Analyst*

Yeah, in the end-end customers, not your direct customers.

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

Right, so in customers' customers as well.

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

To answer, Jim, to answer your question directly, every company has a different consideration and every company has a different strategy. So far, no, TSMC don't do this kind of financial arrangement, because of we think we are working with current customer, with the current model smoothly and also successfully.

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

(Event Instructions)

Operator

Mehdi Hosseini, SIG.

Mehdi Hosseini - *Susquehanna Financial Group LLLP - Equity Analyst*

Two from my end. I want to go back to the USD100 billion investment in the US. Is there any way you can give us some timeline? Is it over the next three years, five years? How should we think about the progression of these USD100 billion investment in the US? And I have a follow-up.

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

So Mehdi's first question is around the announcement today, additional USD100 billion investment in the US. In terms of the CapEx, a timeframe, is it in the next three years, in the five years, do we have any schedule or timeframe to share about this additional USD100 billion?

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

We do have a plan, but let me share with you actually the progress or the schedule, most of the time depending on the market situation and our customers' demand. So if you ask me to give you a firm schedule, no, we don't have it today, but we do have a plan. And we speed it up, we try to speed it up as fast as possible.

Mehdi Hosseini - *Susquehanna Financial Group LLLP - Equity Analyst*

Okay, so the message is you're flexible but also you're expediting the investment in US. Is that correct?

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

Well, I think C.C. said, we're trying to move as fast as we can but everything is based on our customer needs.

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

Yeah, we're also moving the new fabs and facilities in Taiwan as fast as possible. And the same thing, we try to bring up a new fab in the Japan as fast as possible because -- the situation today is the demand and the supply, the gap is so big, so we are working very hard to narrow the gap.

Mehdi Hosseini - *Susquehanna Financial Group LLLP - Equity Analyst*

And I have a follow-up. Actually, I want to dive into the compute part of HPC. And I want to ask you about the networking switches. And in that context, when should we expect the COUPE platform to have a material contribution to your top-line?

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

So Mahdi's second question, very specific. He wants to know for our COUPE platform. When will it have a very meaningful contribution to the business.

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

We started the production right now, and it will be ramped up. As time goes by, I think the AI data center need to lower down the power consumption and increase the bandwidth of the communication channel. So I believe the COUPE will continue to increase the demand and then will become a fairly important technology in the next few years.

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

Laura Chen, Citi.

Laura Chen - *Citigroup - Analyst*

And my first question is also about very promising outlook as TSMC raised the CapEx and also the growth outlook for this year. And particularly, I think, C.C., you mentioned about the agentic AI and the CPU growth potential. But can you give us some more update among that AI, different kind of chips between GPUs, accelerators, or CPU, what you see the growth potential and your visibility?

Thank you.

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

So Laura's first question is around sort of the outlook. We obviously raised the CapEx and growth outlook for this year. She wants to know within the AI, the outlook for agentic AI and CPUs versus AI accelerators, GPUs, et cetera. How do we see these segments.

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

Laura, I don't think I can give you a very specific number, but let me share with you, all of them are in TSMC, and they're also using the same kind of leading-edge technologies. We're working with our customers to allocate the wafer, the supply to balance the CPU, GPU, XPU's ratio.

Laura Chen - *Citigroup - Analyst*

Okay, thank you. Yeah, that makes sense.

And then my second question is also about the advanced packaging. We know that during the Symposium, TSMC previously already announced 14 times reticle CoWoS roadmap to enable larger AI packaging. But at the same time, we also noted that TSMC, maybe last month in Japan, you showed the substrate developments for CoWoS to enable some of the glass technology. So I'm just wondering if you can give us more like technologies progress update on the different kind of technology for glass-core or glass substrate or a glass carrier, what's the progress at TSMC right now?

Thank you.

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

So Laura's second question is on advanced packaging. She notes, as we said, we roadmap to even larger than 14x reticle size with CoWoS, but she also wants to know the technology process in newer areas like glass substrates, glass-cores, what is the progress and status.

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

Let me say that today, the majority is still CoWoS, right? And we are developing that alternative, try to lower down the cost. And we also work with substrate vendor so that our customer can have their product be in the market. The progress, we're building a pipeline that I announced a few quarters ago, and it takes about another one year to be mature, so we can put into the production with our customer.

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

Bank of America, Haas Liu.

Haas Liu - *Bofa Securities - Analyst*

Congrats on great results.

My first question is regarding your CapEx and sales. You gave pretty solid CapEx outlook for this year and also said the CapEx outlook in the next couple of years will continue to be pretty significant. And you also raised this year at 40%-plus. So would you be able to provide your next couple of years sales growth outlook, try to quantify it?

And relatedly, I think also on that topic is whether you can just try to break down which part of the demand you are seeing as the key driver for you to raise your CapEx and also for this year's demand? Is it still mostly driven by cloud computing or it is proliferating to edge computing? Or to some extent, is it also related to your equipment supply chain is raising their price as well?

Thank you.

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

Okay, that's several questions in one. So I'm going to take that as one and a half questions at least. But basically, Haas is asking with the CapEx increase and the revenue increase this year, I think he's trying to look at intensity, but he wants to know what about the revenue guidance for the next several years.

Yes, I'll stop.

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

Okay, let me answer that question. Because of the revenue corresponding to our investment, right, because we know we forecast our demand and then we make an assessment and then we do the CapEx. Next few years is going to be a very good business for TSMC. That's all I can say.

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

And then the other part, so what's the key driver? Is it cloud AI? Is it edge AI? Is it because tool vendors are increasing the price?

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

It's all AI related, everything.

Haas Liu - *Bofa Securities - Analyst*

Yes, I think it is more on your long-term strategy because. A lot of people have actually been asking about your CapEx and also competition on the frontend. But I would actually say that if on the backend competition is rising, especially coming from Intel EMIB-T. Are you worried that your value-add for overall foundry business across frontend manufacturing to the backend packaging business, the value-add could actually be cannibalized with growing competition?

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

Okay, thank you. So Haas's second question is around the competition in advanced packaging. If our competitors are able to gain traction or business with things like EMIB-T, would that be the gateway or an entryway into more competitive threat on the frontend logic wafer side? So does advanced packaging lead to frontend wafer?

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

Let me answer that. The frontend wafer business and the backend business are two different things, right? If they are the same, then you can expect ASE become the frontend competitor also. It’s two different things. And I also say that since our capacity in the backend is still in shortage mode, the gap is bigger. And so I welcome that the competitor offer some of the flexibility to my customer so that their frontend wafer can be put into the package and that help TSMC's frontend wafer business. That's our attitude.

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

Operator, let's take one more from the online and then we'll wrap up with back in person.

Operator

Robert Sanders, Deutsche Bank.

Robert Sanders - *Deutsche Bank AG - Analyst*

You recently stated that high-NA tools are too expensive, but could you please discuss how your customers are considering the impact of die stitching challenges from a smaller field size with high-NA? Could that actually slow the adoption of high-NA even if the tech improves or the tech gets more productive?

And I have a follow-up, thanks.

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

Well, Rob's first question is very specific technology. Around high-NA adoption, he wants to know the customer's feedback on the challenges with die stitching. Is this an impediment or barrier to high-NA adoption in our view?

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

You've got a very detailed understanding of the high-NA. Today, the field size is only one-half and we put that one into our consideration of the manufacturing cost and something. Again, let me answer this question quickly. Whether we use a high-NA or not, actually, one, high-NA is a very good tool. Let's assume that, all right. We understand it's very high performance. But then TSMC make it clear that we work with ASML and try to make it more suitable for manufacturing in terms of the cost and in terms of the maturity. So we always consider that technology, maturity, and the cost in whether we use it or not.

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

Thank you, C.C. Do you have a second question, Rob?

Robert Sanders - *Deutsche Bank AG - Analyst*

Yeah, just a quick follow-up.

I think all of us on this call are assuming that the unconstrained demand for 3 nanometer and below is sort of 30% to 50% above your ability to supply. Is it in fact much larger than 30% to 50% above? Because it feels like it might be based on what you're saying, because I think all of us are assuming it's sort of solvable over the next three, four years, but it sounds like the number could be much larger.

Thanks.

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

Well, those are your numbers, but Robert is asking the demand in excess of supply, is it 30% to 50%? Is it something even larger? Do we have a number to share?

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

No, we don't have a number to share because of -- let me say that the gap is very big. Bigger than··· Sorry, I don't want to make a comment on the memory, but a very big gap.

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

Evelyn Yu, Goldman.

Evelyn Yu - *Goldman Sachs Group Inc - Analyst*

We mentioned a lot on that we're going to step up our capacity growth. I'm just trying to quantify here because I noticed that during your Symposium that you actually mentioned about 2-nanometer family capacity growth will be growing at around 70% CAGR from '26 to '28 and N3+ N5 to grow by 25% CAGR from 2022 to '27. So I was just wondering, are those numbers still right assumptions today? Are we seeing actually any changes over the past quarter and how should we compare with the non-supporting demand out there?

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

Okay. So Evelyn's first question is around capacity growth. She knows during the symposium we did share some five-year CAGR growth numbers for 2 nanometer, around 70% CAGR, and then 3 nanometer around, I guess, I can't remember the exact, but 25%. So are those numbers still the same, or has it changed now that our CapEx and stuff?

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

Did we say that in Technology Symposium? Oh, we show the chart. Okay, now is bigger. That's all I say.

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

Do you have a second question.

Evelyn Yu - *Goldman Sachs Group Inc - Analyst*

Okay, thank you. Very good direction.

All right, my other question touched based on the advanced packaging side. Because you always bundle the advanced packaging CapEx together with testing, mask-making, and others, that's around 10% to 20% of total CapEx. And so one thing I'm trying to figure out here is that how much of that actually goes through advanced packaging alone?

And because given that advanced packaging is capital intensive, less capital intensive versus frontend, so how should we think about a gap between its pricing revenue share and its CapEx share over the next few years? And well, I think finally is that as it becomes more important, how should we think of maybe you should consider bringing it out as a separate CapEx item going forward?

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

Okay, so Evelyn's question is around advanced packaging. She wants to know when we guide for the CapEx? Of course, we guide it in a bucket of packaging, testing, mask-making and others together. Why do we not separate out just into packaging specifically? Her suggestion is we should, but I think more so that's part of it, number one, the CapEx breakdown.

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

Evelyn, let me say that we try very hard to make sure that our CapEx number is correct, but with the flexibility between the frontend and the backend. Sometimes we have a bottleneck, so we put more money to buy the bottleneck tools. And sometimes it's in the frontend, sometimes it's in the backend. But in the ballpark, the percentage is just like a window shared with everybody. For long-term, I mean, that's a backend is about 10 to 20%, that's a big range.

Anyway, so that we -- all I can say is that still 10 to 20%. Because as I said, actually, I'm very honest to tell you that as time goes by, some of the customers' products need more tester. You cannot believe that. I mean, so the tester in shortage, so we have to put more CapEx in the tester or in the packaging or in other areas. So that's why we cannot be very specifically say which area we put how much of the CapEx.

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

That's too specific.

Felix Pan, KGI.

Felix Pan - *KGI Securities Co Ltd - Analyst*

So my first question is regarding to the CapEx revision. So from year to date, so TSMC raised the CapEx guidance by almost USD10 billion. So can you give me some color, where is the upside from, how you guys see the difference from six months ago. Is that from like CPU accelerator, or memory companion chip, or backend CoWoS expansion. Just the upside, how we see things differently from six months ago?

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

So Felix is noting, in January, we guided for USD52 billion to USD56 billion. In April, we said closer to USD56 billion, now USD60 billion to USD64 billion. So we have increased the CapEx guidance. What is driving this? Is it agentic AI only? Is it packaging? Is it AI accelerator?

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

Well, simply put, the most important reason is because that demand continues to increase. And we feel the pressure from the customer to drive TSMC, not drive, actually to cooperate with TSMC for the capacity increase. That's one of the major reasons.

The second reason is inflation. Now we buy the tools with inflation price, okay? You understand what I say.

Felix Pan - *KGI Securities Co Ltd - Analyst*

So my second question is about the mature node. So people always focus on AI leading nodes, but it seems like mature nodes also seeing a very strong demand recovery and also some supply issue as well. So how do you guys see the demand-supply dynamic and pricing for the mature node?

Because apparently, there's some impact from the AI crowding-out effect, but mature node still largely depends on the consumer demand. So consumer demand is still weak. So how you guys see the demand-supply dynamic for the mature node?

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

Thank you. So Felix's second question is on mature node.

He notes there's lots of talk that mature nodes are seeing a strong demand recovery and the supply is very tight. So mature node pricing is very favorable or strong. So he wants to know how do we see the mature node supply-demand situation?

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

Actually, the mature node cover a lot of different segments. Only the one with related to AI is in shortage, which is the most important one is the number one is power management IC, because all the AI data center need a lot of power management. And those are the mature node technology, like 0.18 micron, 90 nanometer, or something like that. Those are in shortage, definitely. And also, the sensor portion, because you need a lot of sensors to detect the environmental information and put it into the AI data center to analyze it.

Other than that, other area, just like you pointed out, the consumer product is not in a high demand, and so other segment is not in so strong demand. And as I pointed out in my statement, other area, no, it's not so much of, say, in a lot of shortage, not at all.

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

Thank you. Thank you, C.C. Thank you, Wendell. Thank you, everyone.

This does conclude 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 our website, again, at www.tsmc.com.

If some of you are not able to ask your question, please feel free to reach out to TSMC IR, and we will follow-up with you. So thank you, everyone for joining us today. We hope everyone continues to stay well. Have a good summer, and we hope you'll join us again next quarter.

Thank you, and have a good day.
