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OVERVIEW:

Co. reported 2Q16 revenues of TWD222b and EPS of TWD2.80. Expects 3Q16 revenues (based on current business outlook and exchange rate assumptions of $1 to TWD32.30) to be TWD254-257b.

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PRESENTATION

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

(Spoken in foreign language). Welcome to TSMC's second-quarter 2016 earnings conference and conference call. This is Elizabeth Sun, TSMC's Director of Corporate Communications and your host for today. Today's event is webcast live through TSMC's website at www.tsmc.com. If you are joining us via conference call your dial-in lines are in listen-only mode. As this conference is being viewed by investors around the world, we will conduct this event in English only.

The format for today's event will be as follows. First, TSMC's Senior Vice President and CFO, Miss Lora Ho, will summarize our operations in the second quarter of 2016, followed by our guidance for the third quarter of 2016. Afterwards, Miss Ho and TSMC's two Presidents and Co-CEOs, Dr. Mark Liu and Dr. C.C. Wei, will jointly provide our management's key messages. Then we will open both the floor and the line for the Q&A.

For those participants on the call, if you do not yet have a copy of the press release, you may download it from TSMC's website at www.tsmc.com. Please also download the summary slides in relation to today's earnings conference presentation.

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 statement. Please refer to the Safe Harbor notice that appears on our press release.

And now I would like to turn the podium to TSMC's CFO, Miss Lora Ho, for the summary of operations and current quarter guidance.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Thank you, Elizabeth. Good afternoon, everyone. Welcome to joining us today. My presentation will start with financial highlights for the second quarter and followed by the guidance for the third quarter.

We had a good second quarter. Our second-quarter revenue increased 9% sequentially to TWD222b, exceeding the high end of our guidance given in April, due to business upside resulting from the demand increases in mid- and low-end smartphones and customer inventory restocking.

Gross margin was also ahead of expectation and increased by 6.6 percentage point Q over Q to a record high of 51.5%, mainly driven by improvement in utilization rate and cost reduction efforts, partially offset by an unfavorable foreign exchange rate. Operating margin also increased by a similar magnitude to reach 41.2%.

As we highlighted last quarter, we incurred a higher income tax in the second quarter. The corporate tax rate rose to 23% as we accrued the 10% on undistributed retained earnings. And we estimate the 2016 full-year tax rate to be about 14%.

Overall, our second-quarter EPS reached TWD2.80, an 8.7% decline year over year, mainly due to a non-recurring share disposal gain from ASML and Vanguard in the second quarter last year. Excluding the one-off items, second-quarter EPS actually grew 17% year over year.

Now let's take a look at revenue contribution by application. During the second quarter communication was flat from the prior quarter, while computer, consumer, industrial and standard increased by 19%, 80% and a 12% respectively.

Now how about revenue by technology? Combined revenue from 16-nanometer and 20-nanometer continued to grow and they represented 23% of revenue in the second quarter, same as the first quarter. 28-nanometer contribution fell slightly to 28% versus 30% in the first quarter, due to a higher revenue base in the second quarter. But absolute dollar revenue from 28-nanometer continued to increase Q over Q.

Moving on to the balance sheet, we ended the second quarter with cash and marketable securities of TWD668b, an increase of TWD19b. On the liability side, current liability increased TWD163b as we accrued about TWD156b for cash dividend, which will be paid out this month.

On financial ratios, accounts receivable turnover days increased 2 days to 43 days, while days of inventory remain at 54 days, same as last quarter.

Now let me make a few comments on cash flow and CapEx. During the second quarter we generated about TWD107b cash from operations and spent TWD100b -- and spent TWD74b in capital expenditure. As a result, we generated free cash flow of TWD33b this quarter and repaid TWD11b of corporate bonds. Our overall cash balance increased TWD4b to TWD622b at the end of the quarter.

In US dollar terms, the capital expenditure spent in the first half of 2016 totaled $3.4b. The second-half spending will be much more than the first half.

I have finished my financial summary. Now let's turn to the third-quarter outlook. We expect our business in the third quarter will benefit from our customers' new product launch and continued inventory restocking.

Based on our current business outlook and exchange rate assumptions of $1 to TWD32.30, we expect third-quarter revenue to be between TWD254b and TWD257b, which represents 14.5% to 15.9% sequential growth; gross profit margin to be between 50% and 52%; and operating margin to be between 39.5% and 41.5%.

This concludes my remarks.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Now we will begin the management comments and we will start with TSMC's CFO, Miss Lora Ho.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

I would like to make a few comments on near-term outlook, CapEx, profitability and the dividend. Let me start with near-term outlook.

Our second-quarter result was helped by an increase in demand from China 4G Plus smartphone ramping and continued 3G to 4G upgrade from emerging markets. Given a stronger-than-seasonal business for our fabless customers in the second quarter, we estimate our fabless customers' DOI exiting second quarter is about seasonal level.

Looking ahead to third quarter 2016, we forecast continuing inventory build by the smartphone-centric OEMs and fabless companies, stimulated by subsidies provided to the telecommunication companies by the Chinese government. We estimate fabless DOI will remain flat with the second quarter, but will be above seasonal level by a few days exiting third quarter.

Fourth quarter is normally an inventory adjustment quarter, but the degree of adjustment will depend on market dynamics and sentiment. For now, we expect the supply chain inventory to go back to the seasonal level exiting fourth quarter. For the whole year of 2016, TSMC maintains our target of between 5% and 10% growth in both revenue and operating profit, both in US dollar and in NT dollar terms.

Now let me make a few comments on CapEx. Our 2016 CapEx forecast has risen from $9b to $10b to $9.5b to $10.5b because expectation for 2017 mobile market mobile products revenue has risen as well.

TSMC's CapEx-to-sales ratio, known as capital intensity, has come down significantly in the last two years. Compared with the high 40s level seen in 2011 to 2013, our capital intensity has dropped to about 31% last year. Going forward, we estimate our capital intensity will remain at mid-30s level for the next few years.

One major factor contributing to this moderate level of capital intensity is our effort made to minimize the conversion loss between two adjacent technology nodes. For example, between 20-nanometer and 16-nanometer, we closely manage one peak capacity so we can minimize conversion loss. Now we also closely manage 10-nanometer and 7-nanometer as one peak capacity to minimize the conversion loss.

In terms of profitability, in the past few years, despite the higher CapEx which led to a substantial increase in depreciation expenses, we have been able to maintain and even improve our structural profitability. We expect to be able to maintain our gross margin at close to 50% level and operating margin at close to 39% level.

My last comment is about dividend. We anticipate a steadily improving free cash flow in the next few years. Therefore we expect our dividend to steadily increase in the next few years as well.

Thank you. Let me turn the microphone to Mark for his comments.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Good afternoon, everyone. Thank you for joining us. I'd like to deliver you the message firstly on leading-edge technology status that includes 10-nanometer, 7-nanometer and 5-nanometer.

First on 10-nanometer. Our 10-nanometer has been transferred from R&D to production. Our first 10-nanometer customer product has been produced with satisfactory functional yield. So far, three customer products have been taped out to us. More customer product tape-outs are expected later this year. Those product tape-outs will start a revenue stream starting first quarter 2017, which will ramp steeply throughout 2017.

On 7-nanometer. Our 7-nanometer technology development is well on track. Its 256-megabit SRAM yield improvement is ahead of our schedule. In addition, we believe our 7-nanometer PPA, that is power, performance and area density, with its schedule, is ahead of our competitors. This

technology has been aggressively adopted, not only by mobile customers, but also by high-performance computing customers. They all have aggressive product tape-out plan in first half 2017, with volume production planned in early 2018.

On 5-nanometer. We have been executing our 5-nanometer development since the beginning of this year. TSMC's 5-nanometer will achieve 1.9 times of logic density over our 7-nanometer. We plan to extensively use EUV lithography in 5-nanometer through improved density, simplify process complexity and reduce cost. The 5-nanometer risk production qualification in first half 2019 remains unchanged.

Secondly, on EUV status. We plan to adopt EUV extensively in our 5-nanometer technology. Today EUV technology uses 7-nanometer as a development vehicle. We have good integration progress in EUV scanner, EUV mask and EUV photoresist. Same yield level has been repeatedly demonstrated using two EUV layers in 7-nanometer.

Currently we are running four state-of-the-art EUV scanners for EUV infrastructure development and for N7 and N5 technology development. We will move in another two EUV high-volume production tools, that is NXE3400, in first quarter 2017, next year.

Recently we successfully implemented 125-watt EUV source in our EUV3350 to improve productivity. In our in-house mask shop we have developing unique EUV mask technologies on mask blank, material, inspection and repair, to seamlessly integrate our EUV lithography total solution.

With all the encouraging development and progresses made at EUV, we estimate that EUV will be cost-effective tool for high-volume manufacturing by 2020, in time for our 5-nanometer ramp. Should EUV become cost-effective earlier, say around 2019, we believe we can still benefit from the earlier available of EUV for our 7-nanometer high-volume manufacturing.

Thirdly, on growth drivers. First, smartphone as a growth driver. We expect smartphone-related demand will support half of our growth in the next five years. It will come from unit growth as well as increasing silicon content. Despite a weak semiconductor industry growth this year, we estimate the smartphone unit growth rate will be about 5% -- about 6%. And the silicon content growth rate per smartphone will increase by a double digit for high and mid end and about flattish for the low end.

We estimate total semiconductor revenue, excluding memory, in smartphone will increase about 7% this year. Longer term, we believe the smartphone unit will continue to grow at a mid single-digit rate. And the silicon content will continue to increase.

This silicon content increase is driven by the increasing adoption of innovative smartphone features, such as dual camera, security sensing, augment reality, virtual reality and migration of 4G, 4G Plus and to 5G. Most of the high-end smartphone features are also proliferating into lower-end smartphones because those innovative features usually require more advanced technologies. With our customers, we will gradually increase our market share in the smartphone market.

As to high-performance computing as a growth driver, as the digital trend develops in all industries worldwide today, silicon IC will needed to take up vast amount of computation load in the future. We estimate computing opportunities will support about one quarter of our growth in the next five years.

In TSMC, we work with IC innovators around the world. We see momentum building up in the computing space for our customers. In May this year, seven companies announced that they are forming an interconnect consortium called CCIX to enable heterogeneous computing in datacenters.

In China, cloud leaders and technology companies formed Green Computing Consortium, aiming to develop energy-efficient datacenters. We also see increasing activities around machine learning, where system companies differentiate down to the silicon level. TSMC, as a foundry player, focuses on enabling our customers' innovation through providing leading-edge technology.

Other innovations in computing area are augment reality, virtual reality, gaming and ADAS, or advanced driver assistance systems. TSMC has been developing suitable process technologies and design enablement for all those innovations.

Above is my message. Thank you. Now I turn the microphone to C.C.

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Thank you, Mark. Good afternoon, ladies and gentlemen. Let me start with our 16-nanometer status. We continue to ramp 16-nanometer with defect density and a cycle time better than our plan. Major applications this year include mobile processor, cellular baseband, graphic and video game.

We are happy to report that we have been recognized by a major customer for our contribution to the success of a deep learning chip using TSMC's 16 FinFET Plus.

We expect our 16-nanometer business will continue to increase in the second half of this year, with most of the products adopting our 16FFC, which is a low-power and low-cost version of the 16-nanometer process. We expect to generate more than 20% wafer revenue from 16-nanometer in this year.

Now 28-nanometer. Our 28-nanometer has entered its sixth year of volume production. TSMC's 28HPC and HPC Plus have been widely adopted by most of the mobile application processor suppliers for the faster-growing mid- to low-end smartphones and other applications, such as Wi-Fi, digital TV set-top box, flash controller, etc. With our differentiated technology, stable yield, short cycle time and large-capacity support, we expect stronger demand for our 28-nanometer will last through this year.

Now let me touch a little bit on our competiveness for those technologies which have been in volume production, namely 16-nanometer, 28-nanometer and so on. TSMC continues to improve our technologies and develop new variants, even after these technologies have entered mass-production stage.

For example, to meet the changing market requirements, we introduced a low-cost, low-power version 16FFC this year after 16-nanometer started volume production last year. We also lowered the operating voltage of our 16-nanometer process to 0.5 volt to meet the requirement for IoT applications.

Similarly, at 28-nanometer node, we introduced 28HPC and 28HPC Plus for the low-power solutions while keeping the speed at almost the same level. For 40-nanometer, TSMC also introduced 40 low power for low-power applications. For 55-nanometer and older node, we apply similar approaches as well.

Since we are able to start volume production ahead of our competition, TSMC has enjoyed a substantial advantage in learning curve. We are able to accumulate enough experience faster than our foundry peers. And therefore we can better improve our cost and device performance for each technology node. Because of the learning curve advantage, we believe we are highly competitive in both performance and cost.

Now let me talk about our -- another growth driver, which is IoT, in addition to mobile and high-speed computation market, which Mark just explained. Driven by innovative business model, we expect the diversified and fragmented IoT applications will become one of the most important growth drivers for future semiconductor business.

IoT applications require not only the collection of huge amount of data, but also the ability to analyze the data and utilize the data to improve our daily lives, such as security and health. In the near term we can see smart band and smart watch for healthcare and smart meter for efficient energy and cost saving. Longer term, we expect ADAS and autonomous driving be widely adopted; smart home, smart city. Robot, drones are also progressing along.

We believe TSMC's specialty technology development in CMOS image sensor, MEMS, RF, power management IC and emerging memory are well positioned to capture the IoT opportunities.

Now let me talk about our advanced back-end technology, first on InFO. We are in volume production now. Our focus today is continuing yield improvement and cost reduction. We expect InFO will contribute more than $100m revenue in 4Q this year, with a moderate gross margin. At the same time we are also developing the next generation InFO technology for products planned for next year and beyond.

Now, on CoWoS, we have seen strong momentum from high-memory bandwidth and high performance-driven applications, such as the networking, deep learning and artificial intelligence. While our CoWoS is still in small volume production for those very high-speed applications, we see the potential of demand increase as well. We expect to support our customer to grow their business in the high-speed computing space with our CoWoS as part of our advanced technology offer.

Thank you for your attention.

QUESTIONS AND ANSWERS

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

All right. This concludes our prepared statements. Before we begin the Q&A session, I would like to remind everybody to limit your questions to two at a time to allow all participants an opportunity to ask questions. Questions will be taken both from the floor and from the call.

Should you wish to raise your questions in Chinese, I will translate it to English before our management answers your question. For those of you on the call, if you would like to ask a question, please press the star then one on your telephone keypad now. Questions will be taken in the order in which they were received. If at any time you would like to remove yourself from the queue, please press the pound or the hash key. So star and one if you want to ask questions and hash key if you want to remove yourself.

All right. Now let's begin the Q&A session. I think we will have the pessimistic analyst from JPMorgan to ask the first question, Gokul?

Gokul Hariharan - *JPMorgan - Analyst*

Thank you very much. First of all on smartphones, and growth coming from smartphones being half of the growth and computer also contributing to a quarter of the growth, could you talk about what is the growth picture for the whole Company? Are we going to maintain the 5% to 10% growth that we are predicting for this year into the next five years? Or how should we think about the growth pattern?

And I have a follow up on the computer side as well.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Okay. Thank you. You talk about the growth model, right? Okay. We do have a growth forecast within the Company, but let me share you with the big picture. In our model, we -- semiconductor has been staying on 0% growth for the past two years, but next five years we estimate about between -- still about between 2% or 2% plus to 3%.

And the fabless company, because of the business model advantages and the leading-edge technology advantages, they will grow about 5% per year in the next five years. And semiconductor -- and TSMC with this, not only the fabless company but also the system company and the -- and IDM outsourcing -- we estimate will grow -- our current estimate will be about between 5% to 10% depending on the macroeconomics and the semiconductor events.

This model is assuming that there is no killer application happen in the next five years. Okay? And as to the background of this growth model, we have -- we are focusing on four areas, as I presented to you earlier. First is the smartphone, mobile devices, mostly smartphones. And that will drive about the growth -- 50% of that growth in the next five years.

And the high-performance computing, that will include the learning, artificial intelligence, the machine learning, AI, gaming, that will grow -- that will drive about 20% -- about a quarter of our driving growth in the next five years. And autonomous car and IoT and the rest will take up another quarter of the drive growth for the next five years. So this is the -- largely our growth model, yes.

Gokul Hariharan - *JPMorgan - Analyst*

Just on the smartphone bit, are we -- I think we have seen smartphone estimates getting -- coming down for the last six quarters. Are we expecting that smartphone units stay at this 5% to 6% growth rate? Or could -- in think in most tech markets, once the saturation hits we get down to probably GDP growth rate, which is like 2% or something like that. Are we anticipating that? And is the future growth in smartphones primarily coming from content growth, which is still pretty decent?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

The -- indeed, the smartphone has been slowing down in the past six quarters, particularly for the high end. And actually -- but at the same time, the mid end, silicon content, is increasing very fast. And the unit number at the low end also increasing very fast. As far as the high end, we don't believe the trend for the last year drop will continue. Okay? Innovation will surface to drive the momentum of the unit growth.

So in total, we still estimate the growth rate will be about 5% in unit growth. Silicon content I mentioned is also about equally important. So that's the general model we have.

Gokul Hariharan - *JPMorgan - Analyst*

Just a question on the compute side. Could you talk a little bit about the take off of the revenues, given that you're expecting tape-outs in first half next year? Typically the end market that you serve in compute, especially the datacenter compute, takes a bit longer for qualification, if you look at server market, for example. Are we anticipating revenues coming in with 7-nanometer in 2018 itself for compute, or could you talk about your revenue model for the compute part? Thanks.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

The question is regarding the high-performance computing, how would that -- appears to be? At this point we think, first of all, many of the low-end servers has -- some of our smaller customer has penetrated already. But for the ballpark, the main portion of the server, I think it will wait for the 7-nanometer to get some share by our customers. But in the next -- at least in the next -- so 7-nanometer will happen in 2018 and afterwards, so it will start from 2019 and beyond. So it will -- for the datacenter I think it will be more a hockey stick beyond -- probably really bigger portion beyond 2020.

So in the next five years, mostly are the computing of the cloud edge devices, of course including the networking, storage and other cloud edge devices I just mentioned. Okay. Thank you.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Next we will have Credit Suisse, Randy Abrams, to raise the question.

Randy Abrams - *Credit Suisse - Analyst*

Yes. Thank you. I wanted to ask the first one actually, another one on the growth drivers, just to get a feel for the base. The computing -- should we think of computing now just that computer end market that's 8% of revenue? Is that when you're thinking about computing, driving a quarter of the growth it's only 8% of revenue now? Like are we thinking the same definition?

And within computing, how much are you banking on ARM and IBM-based servers, versus some of the other things, like the deep learning, or if it's like the AR/VR graphics that you're banking on for most of that growth?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Can you repeat the question?

Randy Abrams - *Credit Suisse - Analyst*

Yes. So the question, the starting point -- is computing -- when you're referring to computing driving a quarter of the growth, is it 8% of revenue now we should think of your computing end market category? And for the growth, are you factoring most of that growth from the ARM IBM-based servers, or is most of it more from the VR/AR, AI type stuff?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Okay. When I talk about computing, it doesn't include a lot of PC or tablets or current computing. I am more category the high-performance computing part. Of course, datacenter, networking storage, but mostly it's in the next three years I think it will be mostly the machine learning, AI, augmented reality, gaming, those are -- those computing devices. Datacenter will not -- I don't think it will come out the big volume until 2018.

Randy Abrams - *Credit Suisse - Analyst*

Okay. The second question, I had a two-part question on the gross margin. For third quarter, if you could go into the factors. Sales are up 15% but the gross margin's flattish. If you could talk about the factors, say from InFO or ramp of 16-nanometer, what's driving the factors? You're not single leverage from Q2 to Q3 in gross margin with the higher sales?

And then the second part is as you ramp 10-nanometer next year -- this year you had the benefit of 16 being a more mature process, borrowing from 20, so would there be any margin impact on the first year of the 10-nanometer ramp in 2017?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

So, Randy, you referred to the margin for the third quarter. As we are continual ramping 16-nanometer, so 16-nanometer will account for a bigger part of our revenue in third quarter versus the second quarter. As this year is only the second year of the 16 ramp, so it still has some dilution to corporate average gross margin. So this is a negative for third quarter.

Randy Abrams - *Credit Suisse - Analyst*

So most of it's just 16 and InFO?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

InFO is very small quantity, and the quantity comes on the line in fourth quarter.

Randy Abrams - *Credit Suisse - Analyst*

Okay.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

C.C. was mentioning the fourth quarter will be bigger than $100m, with modest margin. So it will have some dilution as well, but it's very small.

Randy Abrams - *Credit Suisse - Analyst*

Okay. The second part was if any start-up impact on 10-nanometer next year, since this year 16 was second year and also helped by the 20 learning? So if 10 might have an impact?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Yes. The answer is yes. And we will start to mass produce 10-nanometer from the first quarter next year, so the whole year, the 10-nanometer margin will be below corporate average, so it will be a dilution factor for the next year, whole year.

Randy Abrams - *Credit Suisse - Analyst*

Okay. Thank you.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Next question will be coming from Citigroup's Roland Shu.

Roland Shu - *Citigroup - Analyst*

Hi. Good afternoon, Mark, C.C. and Lora. The first question is on the high-performance computing. The onset for the ARM-based CPU for server won't be -- have a significant market share until 2020. At that time it's about 25% of the share. So that means on your -- for this ARM-based CPU in this high-performance computing probably won't be a very limited from now on to maybe 2018. And so that means on your -- for application processor point of view I think that you -- they actually will be using our 16-nanometer and even 10-nanometer, because our 7-nanometer I think will be in mass production from 2018.

So my question is there any performance gap on the 16-nanometer or 10-nanometer in terms of this ARM-based CPU performance? So that's why -- for people cannot use -- adopt ARM-based CPU on the server or even on this high-performance computing quickly. Thank you.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

On the ARM-based server, or anyway, the CPU chip for server indeed. To the main bulk of the CPU it will take, we will have to work with our customer on 7-nanometer and it is ongoing actively. Before that, I think there are customers working on 16 and even 28 to enter low-end server already also.

But for the other high-performance computing application, really the entry technology is spread quite wide. Just take the ADAS, for example. 28-nanometer is prevailing entry for the ADAS technology in many of the high-end cars already. For machine learning, 16-nanometer, what you see already, high volume is on 16-nanometer in entry to developed market already. The gaming is already also entry in the 16-nanometer soon. It has just started in the 16-nanometer already.

So for other high-performance computing, the application will happen much earlier, already on 28 and 16, and 10 also. So that is different than the datacenter.

Roland Shu - *Citigroup - Analyst*

Okay. So for this high-performance computing will account for one-quarter of the -- on this five years' growth. So how big it will be from this high-performance CPU for server or for this data center?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Well that depends on how much growth we have, right? Right now I think it's currently -- because the forecast has a big range, between 5% to 10%, so it is very difficult to pin down a specific number. But it's about one-quarter of the growth portion.

Roland Shu - *Citigroup - Analyst*

On the ARM-based CPU in notebook or PC, I think the last quarter, Mark, you said you expect it will happen for maybe tablet first. So are you still seeing the same trend and how big it will contribute to our revenue for the next five years? I look at the transcript.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Okay.

Roland Shu - *Citigroup - Analyst*

Yes, you (multiple speakers).

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Tablet, of course, the tablet has been -- application processor has been widely used in tablet already. It's only the tablet, the growth rate is not growing. The unit number is not growing. So you can calculate how much the revenue is already. So it's not a big number.

Roland Shu - *Citigroup - Analyst*

Okay. Thank you. My second question is I look at your second-quarter result. Your 65-nanometer revenue actually has been increased a lot. So I think there actually has been -- 65-nanometer revenue has been declined for continuous four quarters. And I think that will be a first quarter in maybe one or two years we see the growth. So can you elaborate me on why? What's the growth driver for this 65-nanometer increase in second quarter? Thank you.

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

You are asking about 65-nanometer, why it's increased?

Roland Shu - *Citigroup - Analyst*

Yes.

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

It's because of some major customer, they have increased their demand in automotive area. I cannot say more than that.

Roland Shu - *Citigroup - Analyst*

Will this be continue into second half or into next year?

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

I will believe so because the automotive business is a very steady business and it's increasing in the number of units and we enter into mass production since the beginning of this year. And that's why you see a sudden increase.

Roland Shu - *Citigroup - Analyst*

Thank you.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Okay. Next question will be coming from Morgan Stanley, Charles. Charlie Chan.

Charlie Chan - *Morgan Stanley - Analyst*

Thanks for taking my question and congratulations for a great result. Very good execution. So first question is regarding your smartphone content per box. Last year you gave us some data points. I think this super helpful. So if you can quantify the absolute data of the contents in high end, mid and low end, I think that that would be very helpful. So last year a manager mentioned that the high-end content is around USD18 to USD19, mid end USD6 to USD6.4, low end is around USD3.4. So what do we see it today?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

I probably cannot provide specific dollar, but what I can say is the high-end content will continue to increase even to the next year. And the mid end and low end is flattish.

Charlie Chan - *Morgan Stanley - Analyst*

Okay. And my next question is on CapEx spending. So you mentioned that increased CapEx for this year is actually for next-year demand. So is that more for 28-nanometer, 16-nanometer or 10-nanometer spending?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

It's mainly for a 10-nanometer and 7-nanometer combined. We see a stronger demand than we earlier expect and we required to build more capacity next year.

Charlie Chan - *Morgan Stanley - Analyst*

Okay. Thanks. Just a very quick clarification about the management's comments. So firstly is on the cash dividend increase. You mentioned that your increase steady in coming years. How about next year? Is it a done deal?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

I will not tell you how much. It's steadily increasing. You will know by then. Okay?

Charlie Chan - *Morgan Stanley - Analyst*

But will you start from next year? Will you start from next year?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Yes. We mean -- we have the increase in dividend quite a bit and we mean it. When we say steady increase we mean every year we'll consider to increase dividend.

Charlie Chan - *Morgan Stanley - Analyst*

Okay. Thanks. And Mark mentioned that you will --

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Well, Charlie, this is already going beyond two questions, please.

Charlie Chan - *Morgan Stanley - Analyst*

Okay. Sorry about that.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Sorry. Okay. The next question will be coming from Goldman Sachs, Donald Lu.

Donald Lu - *Goldman Sachs - Analyst*

(Spoken in foreign language). My first question is on EUV. I think TSMC and Mark has commented that TSMC plans to insert EUV at 7-nanometer if it is mature enough, before 2020, before 5-nanometer. My question is if another foundry, let's say, starts 7-nanometer with EUV versus TSMC insert EUV at 7-nanometer, what's the implications on performance and product? For example, will TSMC's customers have to redesign the 7-nanometer when you insert EUV in the second year of the technology ramp? So that's my first question.

The second question is on demand. I think -- what is the smartphone as a percent of revenues in the third quarter? Will this be, let's say, 60% revenue or less? And also when you're saying in the next few years smartphone would be half of the growth, would you imply smartphone and non-smartphone will grow at about the same pace?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Okay. On the first question, on EUV, our 7-nanometer will be qualified first quarter next year, so it's only three quarters from now. Definitely EUV will not be ready. And our customer product tape-out will happen in the first half next year. Definitely we cannot put our customer at risk using EUV. So this is because we are very aggressive in delivering 7-nanometer, and indeed, adoption is very wide range.

Our plan to aggressively using EUV will be in 5-nanometer, where the 5-nanometer will start -- we'll finish qual (qualification) in the first half of 2019, and so we're already starting 5-nanometer development. And EUV at this time, we cannot use that as a volume for R&D, because doing R&D, a lot of activity, a lot of activity going on. So we choose that we aggressively get into 7-nanometer without EUV. And we extensively target EUV on 5-nanometer.

Yes, indeed, some of our customer -- one of our customer planned the EUV on their 7-nanometer. But that is only very -- schedule-wise it's very similar to our -- maybe a little bit ahead of our 5-nanometer, a few quarters. But our 5-nanometer is two steps down. The density is very aggressive, using EUV, and learning after 7-nanometer will be very safe on the 5-nanometer.

Had the EUV available before 2020, we consider using our 7-nanometer technology as a base to adopt an EUV for probably the second-wave products. But as far as -- but we want to minimize the design changes so that all the customers coming to our 7-nanometer will be easily adopt what we can reap from the EUV on 7-nanometer.

So that is our plan. I think we develop our technology at the best timing for our customers' products. So that is our current plan.

Donald Lu - *Goldman Sachs - Analyst*

Second question is on smartphone as a percent of revenue in third quarter after Apple ramp. And also would you imply smartphone/non-smartphone will grow at the same rate?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

I don't know about the third quarter, but generally we -- currently the smartphone is about 55% of the corporate revenue -- wafer revenue, okay? And yes, if -- the growth in the next five years, smartphone-related, will be half of that. Yes.

Donald Lu - *Goldman Sachs - Analyst*

Related to this, what about earnings volatility, because, for 2016 or especially 10-nanometer, your largest customer will be essentially dominating this particular node? So if this customer has a seasonal or inventory issues, how can TSMC fill the leading-edge capacity with very limited number of customers?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

I think, first of all, we are everyone's foundry. Our customer covers all areas of the application. We do have big customers. That is not new. I think your question is the volatility of the big customers (multiple speakers)?

Donald Lu - *Goldman Sachs - Analyst*

Yes. For 10-nanometer, let's say, your largest customer takes 80% of the capacity. And if he has two seasonal or inventory issues then you will then fillit.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

I see. Well that's why we design our 7-nanometer, equipment-wise, is 95% convertible. So ballpark is -- can consider, investment-wise, 10-nanometer and 7-nanometer can be converted easily. So that's how we minimize the volatility of the 10-nanometer.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Next question will come from Deutsche Bank's Michael Chou.

Michael Chou - *Deutsche Bank - Analyst*

Hey, Lora. One question. Do you expect the ASP increase for this year? ASP increase for this year?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

You're asking ASP?

Michael Chou - *Deutsche Bank - Analyst*

Yes, ASP increase for this year, for whole year.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

You're talking about a blended ASP?

Michael Chou - *Deutsche Bank - Analyst*

Blended ASP.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Yes. We expect blended ASP will go up this year.

Michael Chou - *Deutsche Bank - Analyst*

Would it be low single digit or --?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

I prefer not to quantify that.

Michael Chou - *Deutsche Bank - Analyst*

Thanks. Second question. C.C., you mentioned the second generation of InFO for next-year product. Would that be for 7-nanometer product or 10-nanometer?

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Starting with 10.

Michael Chou - *Deutsche Bank - Analyst*

Starting with 10. Right. So it will start to have revenue contribution next year, second stage?

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

It should have.

Michael Chou - *Deutsche Bank - Analyst*

The first half or second half?

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Second half probably more probably.

Michael Chou - *Deutsche Bank - Analyst*

Thank you.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

All right, I think we will start questions that has been queuing in the line for quite some time. Operator, could you please have the first caller on the line?

Operator

Brett Simpson, Arete Research.

Brett Simpson - *Arete Research - Analyst*

Thanks very much. With regards to InFO and the CoWoS, as I see it, you're moving from selling wafers to selling turnkey chips on a good die, which is a big change in your business model. If you look out over the next few years when you ramp 7-nanometer, what portion of your leading-edge sales might be adopting this new turnkey model? And when it comes to DRAM memory in package, does TSMC take responsibility for sourcing and holding inventory for memory, or do you expect your customers to fix this? Thank you.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Okay. Let me repeat Brett's question. He's asking how much of our 7-nanometer business will also be using either InFO or CoWoS that TSMC's providing a turnkey solution? What's the proportion of our 7-nanometer business that will be of this type of business model?

And then the second part is about memory in the packaging solution. If memory has any problem, whether it will be TSMC or the customer who is responsible for that problem.

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Well let me answer the 7-nanometer, that how much of the percentage who use CoWoS and the InFO together, or it's just the CoWoS?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Just turnkey solution.

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Just turnkey solution. Probably quite a big portion because of -- we offer InFO for very cost-effective packaging service and that we are here to improve the total packaging, the efficiency in terms of chip area or in terms of a thickness.

For CoWoS, you are here up to 7-nanometer high computation space to compete in a very high-performance area. That would be a smaller percentage, but we see the potential. That's what I just mentioned in my presentation. So put altogether, I would expect quite a significant amount of 7-nanometer product will be using either CoWoS or InFO. That's one thing.

Talking about the memory, stacking together with 7-nanometer chips, we -- certainly we offer the turnkey solution. But we are very flexible in working with the customer that all the possible combinations are all possible.

Brett Simpson - *Arete Research - Analyst*

Does that mean that you would purchase the memory and book the memory sale within the overall package, or would you leave your customers to purchase the memory and take inventory risk?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Well let me see if I hear you correctly. You are asking whether or not we are paying for the memory and then charge the customer as part of the revenue that we obtain from InFO or it is separated?

Brett Simpson - *Arete Research - Analyst*

Exactly. Yes.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Okay.

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Okay. We don't buy the memory per se. We work with the memory supplier so that their spec, in terms of mechanical stress, in terms of a lot of things the flatness or those kind of things. We work with them but we don't buy memory and resell to the customer. However, we are responsible to stacking them together and as a whole packaging to our customer.

Brett Simpson - *Arete Research - Analyst*

Thank you. And maybe just one final question. When you look at TSMC 7-nanometer for high-performance compute, can you give us your perspective? How would you technically compare them to Intel's 10-nanometer, which will be in production relatively similar timescales? Yes. Thank you.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Can you repeat the question?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Yes. How do we compare our 7-nanometer performance and whatever the characteristics versus Intel's 10-nanometer, which Brett believes that timeframe-wise we are about to offer in these two technologies about the same time.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Well you have to ask our customers. I cannot speak for them. They have -- they definitely have their plan and we deliver our technology. And of course, as you know, they deliver their architecture differentiations. So really the end product performance depends on multiple factors. So I cannot speak for my customers at this point on this.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Okay. Let's move to the next caller on the line. Operator, please.

Operator

Steven Pelayo, HSBC.

Steven Pelayo - *HSBC - Analyst*

Yes, first question on 28-nanometer. It's still your largest segment, but it did decline last year, yet the total Company still managed to grow about 10% or more in 2015. What do you think for 28-nanometer this year? What type of growth -- I assume you think it's going to grow this year -- are you expecting?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Steven, we really cannot hear you that well. Can you move a little bit away from the microphone? You're asking about revenue contribution from different geometries.

Steven Pelayo - *HSBC - Analyst*

Maybe you can hear me a little better now.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Yes. Please.

Steven Pelayo - *HSBC - Analyst*

No, I was asking specific to 28-nanometer node. It's still your largest node and yet it declined last year. And I was asking for this year, do you expect it to grow and by how much?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Okay. Whether or not we will grow 20-nanometer and by how much in this year?

Steven Pelayo - *HSBC - Analyst*

Correct.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Well, Steven, in fact, we deliberately combine 16-nanometer with 20-nanometer and we report that as one node, so we do not separate that. Sorry.

Steven Pelayo - *HSBC - Analyst*

I was saying specifically 28-nanometer. That's your largest node. Do you expect that to grow?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

28-nanometer? I see. Sorry. 28.

Steven Pelayo - *HSBC - Analyst*

Yes.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

28-nanometer. Do we grow 28-nanometer and by how much this year?

Steven Pelayo - *HSBC - Analyst*

Correct.

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

While Lora is checking with the number, all I can say is our revenue this year slightly lower than last year. Slightly. But percentage-wise, because our revenue increased, so the percentage of the 28-nanometer revenue --

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

C.C., actually, according to our forecast, 28-nanometer, dollar-wise, will be higher this year than last year.

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Will be higher?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Yes.

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Okay. Good. Okay. As I said, stronger demand in the second half.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

So I confirm that. Okay.

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

I apologize.

Steven Pelayo - *HSBC - Analyst*

Okay. Slight growth. That's fine. The reason why I'm asking the question is really to talk a little bit about above 28-nanometer. Competitors like SMIC are growing very fast this year and their capacity constraint, they don't really have any 28-nanometer really to speak of. So what's going on with the above 28-nanometer nodes? So above 28-nanometer, it seems like maybe TSMC's a big share. Is that right? Is that just China's influence? How would you respond to that question?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

All right. His question is for bigger nodes, bigger than 28-nanometer, how does TSMC -- what's our strategy compared to other foundries who are growing shares in those bigger nodes?

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Okay. For the older generations, our strategy is simple. We don't particularly to increase the capacity. We -- instead, we develop some derivative technology, such as in the CMOS image sensor, embedded Flash, power management IC. So to keep that whole capacity fully loaded, that's our strategy right now. We don't substantially increase the capacity as other foundry peers do it.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

And maintain good profitability.

Steven Pelayo - *HSBC - Analyst*

Okay. That's great.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Thank you. Okay.

Steven Pelayo - *HSBC - Analyst*

My last question, if I can just sneak in here, is about the cap -- the dividend. You're raising your dividend yet you're generating more free cash flow every year so you're growing your cash balance. And seriously, when does this become too much? When does it start to impact your goal of sustaining greater than 20% ROE? Is there an optimal cash level and an optimal capital structure we could talk about instead of focusing on a dividend payout ratio?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

So Steven's question is we have been growing free cash flow every year and our cash balance continues to go up. What would be a capital structure of TSMC or a payout ratio?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Steven, we don't use payout ratio. You know our dividend policy has alluded as sustainability and we have started to pay dividend since 2008 -- since 2004 actually. And there's a very long period of time we pay TWD3 every year for consecutive eight years, and then we significantly increased the dividend to TWD4.50 a year ago and then to TWD6 today. So if I look at from today's forecast, and we have confidence we can continue to grow our free cash flow every year, that is why I say the dividend policy will change from sustainable to sustainable and increasing. So that's the thinking that we have in mind.

Steven Pelayo - *HSBC - Analyst*

The current TWD660b in cash, is that an excess amount that you need or what is an optimal cash level to run your business? That's my last question.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

The optimal cash position depends on what you do with your cash. I think for now our cash is mainly to support our organic growth. We may have some M&A but we don't know at this moment. So we will try to be a little bit conservative in keeping enough cash to do the both. One way to support a sustainable increase in dividend, on the other hand to have some buffer if there's M&A case.

Steven Pelayo - *HSBC - Analyst*

Thank you.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

All right. Operator, let's move on to the next caller on the line, please.

Operator

Mehdi Hosseini, SIG.

Mehdi Hosseini - *SIG - Analyst*

Yes. Thanks for taking my question. Can you hear me okay?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Yes, we can.

Mehdi Hosseini - *SIG - Analyst*

Thank you. I have two questions, one on CapEx. A couple of years ago when you first started investing in 20-nanometer, there was a surge in CapEx as you were preparing 20-nanometer. Now it seems like 10-nanometer and 7-nanometer are pretty much comparable to 20-nanometer and 16-nanometer. And back then, a couple of years ago, after significant spending in 20-nanometer, then there was a period where your CapEx came in flat, or even last year it declined. Should we assume the same kind of CapEx spending looking forward, especially since 10-nanometer and 7-nanometer are comparable to 20-nanometer and 16-nanometer?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Can you repeat the question, please?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Mehdi's question is when last time he saw TSMC having a surge in CapEx, that was the time when we built 20-nanometer, when we ramped 20-nanometer. He's asking whether same type of CapEx pattern will be repeated in the future when we ramp, say, for example, 10-nanometer.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

We don't believe so because, as Mark was mentioning, there's a very high percentage of conversion rate. So when we roll to the next generation of technology, a big part of it will be converted from the previous generation. So you will not see a step up type of things that we have experienced in the past; it will be gradually increase.

Mehdi Hosseini - *SIG - Analyst*

Right. The step up is happening in 2016. So in 2017 your CapEx may not increase, actually may be flat or down as the conversion starts to take place. Is that correct?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Whether 2017 CapEx will be flat or down compared to this year because of conversion.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

It will not. It will not. As I just said earlier, I think you will not see a step up kind of things. But we will look at the business every year. And depending on how much leading-edge capacity we want to build in that year, also depending on the profile of the ramping, that's also another factor that will affect our CapEx. It's probably better to follow my earlier guidance that we believe in the next five years our CapEx intensity will be in the range of mid 30s.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Okay, now --

Mehdi Hosseini - *SIG - Analyst*

Okay. Great. I have a follow-up question regarding the near-term trend. You said that the customer days of inventory is going to increase in Q3 and you're not sure about the sell-through. Is it going to take a couple more months to better determine if customers are over-building, or do we have to wait till January/February timeframe? How do you assess this because your commentary is a little bit confusing, especially regarding days of inventory?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

All right. Mehdi's question is how do we know whether or not the inventory that we are seeing today will be too much? Do we have to wait until next January or February to know, or do we have a method to assess?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Well, indeed, we cannot see crystal about sell-through. What we have told you about the unit growth is really the sell-in, sell-in to the phone service providers. So sell-through, indeed, there are uncertainties. But we see the growth of -- we assume the growth of 6% increase. And the model we -- the inventory level we cited is assuming the sell-through is also a 6% increase. If this differs then the inventory level will also differ accordingly.

Mehdi Hosseini - *SIG - Analyst*

Thank you.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

All right. Thank you, Mehdi. Now let's come back to the floor. The next question will be from Credit Lyonnais, Sebastian Hou.

Sebastian Hou - *Credit Lyonnais - Analyst*

Thanks for taking my questions. My first question is to follow on the advanced backend technology. So C.C. guided this year fourth-quarter revenue of InFO will be above at least $100m. Can you give us some guidance for fourth quarter next year, and also the fourth quarter 2018 when InFO and CoWoS combined?

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

The fourth quarter this year is high-volume ramping. Following next year it's supposed to continue this kind of production, I believe. So next year, the whole year will be much better than just this quarter times four. You are talking about in 2018 CoWoS and InFO together, or 2017?

Sebastian Hou - *Credit Lyonnais - Analyst*

2018.

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

2018. I believe CoWoS has a high potential but is still a small volume as compared with InFO. InFO is much more high-volume production, so most of the revenue will come from InFO.

Sebastian Hou - *Credit Lyonnais - Analyst*

Okay. So based on your fourth-quarter 2016 guidance, it will probably account for 1% to 2% of your 4Q revenue for InFO. So is there any -- in terms of revenue contribution percentage for 2018 in terms of InFO and CoWoS combined, would it be higher than this 1% to 2% run rate?

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

I would hope so, but I don't know the 2018 revenue yet.

Sebastian Hou - *Credit Lyonnais - Analyst*

Okay. Thank you. And my second question is on the 7-nanometer and 10-nanometer. Six months ago, I remember I asked the questions and Mark and C.C. answered me that the 10-nanometer revenue contribution in 4Q next year will be higher than the revenue contribution of 20-nanometer back in fourth quarter 2014. So I wonder, does that still hold?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Elizabeth, can you repeat the question? I don't quite get it.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Yes. Okay. Sebastian's question is compared to 2014 fourth-quarter revenue from 20-nanometer with 2017 fourth-quarter revenue from 10-nanometer, which one will be bigger?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Right now we -- the dollar-wise, we think it's bigger, but the percentage-wise is next year's business. So those numbers are too early to predict at this point. But 10-nanometer is very strong and we cannot give you a specific number for that. It would be around similar level, I think.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

I think 4Q 2014, our 20-nanometer was 21%.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Yes.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

But 2014 compared to 2017 will be a smaller year overall-wise.

Sebastian Hou - *Credit Lyonnais - Analyst*

Okay. I understand. And given that you have more tape-outs on the end design -- tape-outs on the 7-nanometer compared to 10-nanometer, so we could assume that by fourth quarter 2018, the 7-nanometer revenue contribution, or in dollar amounts, should be a lot higher than 10-nanometer contribution fourth quarter 2017.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

This is 2018 and we are middle of 2016, Sebastian.

Sebastian Hou - *Credit Lyonnais - Analyst*

Yes, but --

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Whatever the guidance we can give you may not be reliable.

Sebastian Hou - *Credit Lyonnais - Analyst*

But you guys have a very long visibility, I thought so.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Not that long. Not two and a half years.

Sebastian Hou - *Credit Lyonnais - Analyst*

Okay.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

But I think we will going through ramp, 10-nanometer going through ramp next year. And 7-nanometer will -- 7-nanometer and 10-nanometer will continue the ramp in 2018. Okay? Thank you.

Sebastian Hou - *Credit Lyonnais - Analyst*

Okay. Thanks.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Okay. Next question will be a follow-up from Morgan Stanley's Charlie Chan.

Charlie Chan - *Morgan Stanley - Analyst*

Thanks for taking my question again. I just want to clarify Mark's comments on smartphone market share. So you mentioned that you believe you can continue to gain market share in smartphone semiconductors. But now you essentially have very high market share now, except for those in-house production from Samsung. So where is the upside for this market share in smartphone?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Where? Well, we and our customers work together to increase their shares. Yes, currently our smartphone with our customer market share is already very high. But we will gradually increase. We think we will gradually increase further. Many of our customers today in mid end were also attempting to get into the high end, particularly the silicon content of high end and mid end also increasing, which favors leading-edge technology that we provide. So those are the reasons -- those are the advantages that we have with our customer to be able together increase the market share we have.

Charlie Chan - *Morgan Stanley - Analyst*

Okay. That's very clear. So gain market share along with your customers. Okay. So I just want to follow Donald's question on this short-term volatility because you risk CapEx for next year 10-nanometer demand. But I think the fact is that you disclosed in your 20-F, Apple and Qualcomm each accounts for 15% of your 2015 revenue. And we all know that Qualcomm may walk away to Samsung temporarily. And for Apple you also mentioned that you cannot predict that sales of, let's say, iPhone 7. So how can you be that confident to spend that CapEx for 2017 10-nanometer demand? Thanks.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

We cannot give you a specific number. It doesn't mean we are not confident. I think, of course, we want to support our customer for any growth opportunities they can possibly achieve. At the same time, we manage carefully about our capacity buildup. So this is a very complicated discussion with our customers. So at this point I think we will -- those capacities we built will be needed by our customers.

Charlie Chan - *Morgan Stanley - Analyst*

Is there any early indicator you will win -- keep very high market share as a 10-nanometer project for big customer?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Yes. We have been working with customer for a long time for 10-nanometer and we believe our market share will be more than 70% next year.

Charlie Chan - *Morgan Stanley - Analyst*

Okay. Thanks.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Okay. Follow-up questions from Citigroup's Roland Shu.

Roland Shu - *Citigroup - Analyst*

Thanks. I just want to take your assumption for 16-nanometer gross margin to be about 1 percentage point dilution of the corporate average in second quarter and 3Q. So I just did the calculation. It seems like in 3Q actually we don't have any benefit for the higher utilization on the gross margin point of view. So does that mean that in 3Q the average of 16% revenue growth in mainly from the product mix change?

I think my question, just to repeat my question. I just take your assumption, 16-nanometer gross margin to be 1 percentage point dilution of the corporate average in second quarter and 3Q. My calculation showed in 3Q, even though we have about 16% revenue growth, however we don't -- it seems that we don't have any gross margin benefit on the higher utilization. Does that mean this 16% revenue increase is mainly from the product mix change, or in 3Q we have a higher depreciation to have a drag of the gross margin? Thank you.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

So basically, Roland, your question is whether or not we will have a higher utilization rate or a lower utilization rate in the third quarter compared to the second quarter, and that's the reason for not giving you a 55% gross margin, right?

Roland Shu - *Citigroup - Analyst*

Yes. And if the depreciation is much higher than second quarter.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Higher depreciation, yes.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

It's a combination of many factors. We do have higher depreciation. Just imagine, we have back-end-loaded CapEx, so it's natural depreciation would go up from second half, that's one thing. And also we are ramping 16-nanometer, which we still have some dilutions. And we have a better utilization in third quarter as well. So if you took all those three factors together, that's the guidance that was provided, broadly based on those.

Roland Shu - *Citigroup - Analyst*

Yes. So can we have a rough number for how high the depreciation in 3Q it will be?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

I think it's TWD2.5b more.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Yes. It's about TWD2.5b quarterly depreciation.

Roland Shu - *Citigroup - Analyst*

So it's about 1 percentage point lower in gross margin.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Roughly.

Roland Shu - *Citigroup - Analyst*

Yes. Okay. And the whole year depreciation is still increased about mid to high single digit, is that the same?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

It's in the range of mid teens year over year. Mid teens.

Roland Shu - *Citigroup - Analyst*

Mid teens?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Mid teens, yes.

Roland Shu - *Citigroup - Analyst*

That is very different from the number you talked.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

No, I was talking about the same thing. Depreciation year over year will increase by mid teens. I didn't change that.

Roland Shu - *Citigroup - Analyst*

Okay. No? I think it's not. Mid to high single digit.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

I'm sorry. I was looking at the wrong line. Yes, mid single digit. You're right.

Roland Shu - *Citigroup - Analyst*

Okay. Yes. Thank you for the clarification. And last question, for the DoI inventory, you said in 3Q we are still -- customers are still restocking in 3Q and in 4Q will be destocking and inventory days will be back to seasonal level. So does that mean that from first quarter next year, are we going to see a normal seasonality, normal quarter in first quarter or customers are going to restocking again from first quarter next year? Thank you.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

I think there are still uncertainties depending on how the inventory situation in the fourth quarter and over-sentiment in the fourth quarter, so it's a little bit too early to say that.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

A follow-up question from Credit Suisse, Randy Abrams.

Randy Abrams - *Credit Suisse - Analyst*

Thank you. Just to follow up on Roland's question, to pull it back to fourth quarter, where you talked about the inventory and the high base, is there a way to think about it relative to seasonal? What's the seasonal fourth quarter and then if you're thinking it's normal or below seasonal?

The question is fourth quarter, what you would expect normal seasonal, because you mentioned it's normally a correction quarter. So what's the normal magnitude and then how you see, at this stage, it could change, but at this stage how you see it relative to seasonal?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Fourth quarter is seasonally will correct. It will correct. What we say from third quarter, a little bit higher than seasonal going to fourth quarter seasonal, including both factors, correcting the deviation of seasonal. And also between third quarter and fourth quarter, seasonal will be corrected. The days will decrease.

Randy Abrams - *Credit Suisse - Analyst*

Okay. But do you think the decline -- because it was above seasonal in third quarter and inventory above, we could see below seasonal fourth quarter? Do you expect you could see a below-seasonal fourth quarter?

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

No, no. We see it's close to seasonal.

Randy Abrams - *Credit Suisse - Analyst*

Okay. My follow-up question, IoT is one of your growth drivers. Your competitors, like Samsung and GlobalFoundries, have been pitching FD-SOI. Do you see any merits to that track or how do you see customer interest in that relative to the strategy that you're adopting, and any need to consider that in the future?

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Well let me answer that question. For the FD-SOI, the main merit is low power consumption, which I think TSMC has offered a complete set of technology roadmap for the low-power applications. We started from 40-nanometer low power and enter into 28-nanometer, now even 16 FinFET, we offer down to 0.5-volt operation voltage. Our experience, we're talking and working with our customers, the roadmap has been very satisfactory to their product needs. So we expect we are very well positioned to capture all the opportunities.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Let me add to that. I think FD-SOI may be useful for specific products, but our bulk CMOS ultra low power has a much bigger design ecosystem. And IoT is a very fragmented design. And many, many customers are trying to enter that. So we think the ecosystem of bulk CMOS is much, much useful for our customers than niche FD-SOI application.

Randy Abrams - *Credit Suisse - Analyst*

Thank you.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Okay. There's a question in the back. I think you are Merrill Lynch sales, right? No, you are not. UBS, sorry. The lady in the back is sales from UBS.

Julie Tsai - *UBS - Analyst*

Thank you, Dr. Sun. This is

Julie from UBS. My question will be actually more simple than the analysts'. I'm actually quite interested regarding to the market share comment that Mark has made. I'm just wondering, regarding to the market share gain, would that be coming in from, let's say, your existing clients making into higher end of smartphone, tapping into areas they never have been before? That's one thing that's called market share gain, right?

Secondly, is it existing clients coming back to you that's also a market share gain? So which one would that be?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Both.

Julie Tsai - *UBS - Analyst*

Okay.

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Yes.

Unidentified Audience Member

So which one is happening faster?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

They happen at the same time.

Julie Tsai - *UBS - Analyst*

Okay. And would you be able to quantify the market share of TSMC in smartphone?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

Currently we're about 55% and we expect to increase from that number further up gradually.

Julie Tsai - *UBS - Analyst*

Okay. My second question is actually what's TSMC's view on ASML buying Hermes? Does that help you going forward in terms of tools for procurement, or could you comment on that?

Mark Liu - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

HMI Hermes has this defect inspection tool. It can detect very fine feature on wafers. And ASML and HMI merger intends to be able to develop the lithography more precisely controlled according to the wafer images. So I can only speak from industry or technical perspective. That definitely will help the capability of lithography tools and therefore help the technology capability and help the technology development for their customers. That's my comment.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

All right. Last question, coming from Credit Lyonnais, Sebastian Hou.

Sebastian Hou - *Credit Lyonnais - Analyst*

Thank you, Dr. Sun. Just two quick follow-ups. The first one is that we noticed the consumer application in second quarter increased significantly, both from quarter-and-quarter and year-on-year perspective. Can you, C.C. or Mark, comment on that?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Video games.

Sebastian Hou - *Credit Lyonnais - Analyst*

Okay. Thank you. And a very quick one. The last one is on the CapEx increase, about $500m, so I wonder whether that suggests some pull-in of the 10-nanometer expansion.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

Yes, it is. It's for 10-nanometer because we need a bigger capacity next year.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

But he's asking whether it's a pull-in, which is a schedule issue.

Lora Ho - *Taiwan Semiconductor Manufacturing Company Ltd - CFO*

For next year it's not; it's just higher demand so we need more capacity.

Sebastian Hou - *Credit Lyonnais - Analyst*

So that doesn't have any correlation with the mass production schedule?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

The schedule stays the same.

Sebastian Hou - *Credit Lyonnais - Analyst*

Okay. So a follow-up on that one is that the -- does the CapEx mix still about 10% go to back end within the -- in terms of the new CapEx? Or they were skewed more towards the advanced packaging -- sorry, advanced technology, mostly on 10 nanometers and 7 nanometers for this year?

C.C Wei - *Taiwan Semiconductor Manufacturing Company Ltd - President and Co-CEO*

The back-end CapEx for next year probably will be much smaller than this year, because we build up InFO capacity already. Next year we are going to be the second generation, probably just improve some features, that's all.

Sebastian Hou - *Credit Lyonnais - Analyst*

Thank you.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Company Ltd - Director of Corporate Communications*

Okay. I think it's about time. And thank you very much for coming to our quarterly conference. I hope you will join us next quarter. Our transcript will be available very shortly, as well as the video replay. Thank you.