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OVERVIEW:

Co. reported 1Q12 revenues of TWD105b and EPS of TWD1.29. Expects 2Q12 revenue to be TWD126-128b.

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CORPORATE PARTICIPANTS

Elizabeth Sun *TSMC - Head of IR*

Lora Ho *TSMC - CFO and VP*

Morris Chang *TSMC - Chairman and CEO*

CONFERENCE CALL PARTICIPANTS

Daniel Heyler *Bank of America Merrill Lynch - Analyst*

Mehdi Hosseini *Susquehanna International - Analyst*

Randy Abrams *Credit Suisse - Analyst*

Steven Pelayo *HSBC - Analyst*

Michael Chou *Deutsche Bank - Analyst*

Satya Kumar *Credit Suisse - Analyst*

Dan Malcolm *Viking Global - Analyst*

Alahon Ng *BNP - Analyst*

PRESENTATION

Elizabeth Sun - *TSMC - Head of IR*

(Audio in progress) -- for those participants who 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 quarterly review presentation.

I would like to remind all listeners that the following discussions may contain forward-looking statements that are subject to significant risks and uncertainties which could cause actual results to differ materially from those contained in the forward-looking statements.

Information as to those factors that could cause actual results to differ materially from TSMC's forward-looking statements may be found in TSMC's annual report on Form 20-F, filed with the United States Securities and Exchange Commission on April 13, 2012, and such other documents as TSMC may file with or submit to the SEC from time to time. Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise. And now I would like to turn the call over to Lora.

Lora Ho - *TSMC - CFO and VP*

Thank you, Elizabeth. Good morning and good evening to everyone. Thank you for joining us in the first quarter earnings conference call. Tonight I will start with the financial results for the first quarter and give you the outlook for the second quarter, followed by some comments on the supply chain inventory.

The first quarter 2012 was a stronger and seasonal quarter for TSMC. Compared to a normal seasonal decline, our revenue increased 0.8% to TWD105 billion. In the US dollar terms the increase was 2.7% over last quarter, which was slightly better than our guidance. During our last earning conference call we had expected the beginning of inventory replenishment in certain applications to drive first quarter demand. On top of that, the better technology also contribute to the first quarter's strength.

On the margin side, first quarter gross margin was 47.7%, or 3 percentage point higher than that in the fourth quarter 2011. This is also about 3 points higher than our guidance, as the first quarter utilization rate was a lot higher than we had expected, reflecting the strong -- stronger demand in the first quarter and second quarter.

The first quarter's gross margin also includes the negative impact from NT dollar's appreciation and the temporary margin dilution effect from 28-nanometer, which takes place during the initial ramping stage of every technology node.

Operating margin was 33.6%, up 2.2 percentage point. Operating expense increased about TWD1 billion, mainly due to higher operating expense for Fab-15 in preparation for 28-nanometer ramp up, as well as the increased R&D investment for 20-nanometer technology. Overall, our first quarter EPS was TWD1.29. ROE for the first quarter was 20.8%.

Let's move on to revenue analysis. For applications; computer, consumer and industrial related revenue benefit from the customers' inventory replenishment and increased by 11%, 17% and 11% respectively, whereas communication decreased by 9% due to the product transitions in emerging market.

By technology; as we had expected last quarter, 28-nanometer contribution more than doubled to 5% of total wafer sales in the first quarter. This was the fastest ramp in foundry history as we tried to chase customers' massive demand. Meanwhile, 40-nanometer, 45-nanometer continued to be solid and contributed to 32% of our total wafer revenue, exceeding 65-nanometer for the first time. Overall, contribution from 65-nanomter and below technologies increased 4 percentage points to 63%.

Our days of inventory increased by 4 days to 39 days in the first quarter. The -- sorry, days of inventory increased by 4 days to 47 days in the first quarter. The increase was mainly from the higher working process inventory in response to the strong second quarter demand.

On the cash flow side, we generated TWD57 billion from operations, invested TWD49 billion in capital expenditure, raised TWD17 billion through corporate bonds and increased TWD9 billion in short-term loans for currency hedge purpose. As a result, our cash balance increased TWD27 billion to TWD171 billion at the end of the first quarter.

Let me move on to our full year capacity plan. We expect our total capacity to increase about 12% to reach 14.8 million wafers in 2012. Majority of the increase comes from a 17% increase in 12-inch wafers. Our third GigaFab, Fab-15, begins 28-nanometer volume production this month, and then ramped at fastest speed in our history to reach about 50,000 wafer per month by the end of this year.

On the supply chain inventory, after the inventory adjustment to the second half of last year, supply chain DOI already dropped below seasonal level by the end of fourth quarter. We estimate that the DOI exiting the first quarter will be even lower and then approach the seasonal level by the end of second quarter.

Before I turn to our next quarter guidance, I would like to talk about some dynamics in our second quarter gross margin, including utility cost, exchange rate, production cost and utilization. First of all, the utility rate in Taiwan will start to increase from the middle of next month. For TSMC this mean about 38% increase in average utility rate, which will take out 0.4 percentage point from the second quarter's gross margin or 0.5 percentage point from operating margin.

For second half of this year the impact will go up to about 1% of operating margin. Moreover, the higher summer utility price will start to be applied in July and take about 0.3 percentage points from gross margin in the second quarter. As for the exchange rate, we anticipate a slight NT dollar appreciation to impact the second quarter gross margin by 0.2 percentage point.

On production cost, Fab-15 will start to contribute revenue from the second quarter given the higher initial production cost of a ramp in 28-nanometer, particularly in the new Fab. Its margin impact is estimated to be negative 2.5 percentage point. Apart from 28-nanometer, other technology node will see efficiency improvements which will contribute about 1 percentage point to our gross margin.

Lastly, on utilization, thanks to the strong wafer demand driven by mobile computing devices our utilization will continue to pickup and contribute about 2.8 percentage points to gross margin. Overall, our second quarter gross margin will increase slightly from first quarter.

Now let me turn to outlook for the second quarter this year. Based on our current business expectation and a forecast exchange rate of TWD29.58 we expect our revenue to be between TWD126 billion and TWD128 billion, which translate into a sequential growth of 19% to 21%.

In terms of margins, we expect the second quarter gross margin to be between 47% and 49% and operating margin to be between 34.5% and 36.5%. Now, I would like to turn the call over to Dr. Morris Chang, our Chairman and CEO, for his remarks.

Morris Chang - *TSMC - Chairman and CEO*

Hi, ladies and gentlemen. Good evening or good morning as the case may be.

The news in the last quarter has ranged from encouraging to exciting. Encouraging was the macroeconomic news from the United States and China, which are our largest end markets. Both economies seem to have averted a worst possible scenario and are playing out in a medium good scenario. And encouraging was also the world's semiconductor market trend. It now looks to exceed our earlier forecast of plus 2% growth this year.

Exciting was that after two quarters of sequential decline TSMC's business points to a solid growth year this year. In the first quarter, three months ago, we had estimated that first quarter would be flat or a little down. It turned out to be a little up. Not only that, the incoming orders was strong enough that allowed us to guide a very solid growth second quarter, as Lora has just done.

Not only that, the orders forecast, which is our forecast of incoming orders in the next few months, is also very strong, and that means that third quarter in all likelihood -- third quarter in all likelihood will be a continued growth quarter.

Most exciting is that our 28-nanometer, which is being ramped up just now. In fact, first quarter was the first ramp up quarter. 28-nanometer is now turning out to be a roaring success. The success has exceeded the expectations of our partners who have designed with our 28-nanometer technology and the success of course has exceeded our expectations too.

Let me talk more about 28-nanometer. Its performance and the costs are both attractive. We are the only effective foundry supplier. We are quite confident that we'll remain the only effective foundry supplier for quite some time to come, and we are also confident that in the long run, which means many years, we will be the primary supplier.

Demand of 28-nanometers has surpassed our customers and our expectations, resulting in supply shortage. I think the worst of the supply shortage is behind is us. We expect that we will be very close to catching up in the fourth quarter this year and we expect to have completely caught up with demand by the first quarter next year, and we will not fall behind again.

This supply shortage problem is not caused by yield problems, but by underestimate by both our customers and us of the capacity and ramp up speed required this year. The D0 and yields are on plan and exceeds those parameters in the early stage of 40-nanometer. Significantly, this is the first time the mobile product customers have played a big role in our leading edge node. Now we are anticipating that in 20-nanometer, the next node, the mobile product customers will perhaps play an even more important role. It is now clear that 28-nanometer will be one of our biggest and most successful nodes, if not the biggest.

Turning to 20-nanometer, the development is on track with very good yield on SRAM. Compared with 28-nanometer, 20-nanometer is 1.9 times the density and has significant performance improvement in both speed and power. We have engaged with more first wave customers than even the 28-nanometer.

If you recall a year or two ago, I told you that we were very pleased with the number of engagements on the 28-nanometer. Now this time on the 20-nanometer we're engaged with even more customers than in the 28-nanometer. Also, this early engagement with a large number of customers on 20-nanometer means earlier collaborations, so that when the ramp up starts it will be faster and smoother. We plan to roll out 20-nanometer at the end of this year.

Now FinFET, for significant performance gains. We are going to introduce FinFET after the 28-nanometer planar. We've been working on FinFET for more than 10 years. We are quite confident that we'll have a robust FinFET technology.

Now turning to subsystem integration. I mentioned a year or so ago in more than one of these conferences that we're working on things like CoWoS, which stands for chip on wafer on substrate; BOT, which stands for bond on trace; and wafer level fan-out. All those are reported on more than once. All those are under our subsystem integration program.

We do plan to provide system or subsystem solutions and they are innovative solutions consisting of CoWoS, BOT and wafer level fan-out. We will also provide manufacturing capacity to better capture value. We also are building a ecosystem with key partners in memory, EDA tools, IPs and substrates.

Now I'd like to say a few words about our capital expenditures. Our Company mission is to be the trusted provider of technology and capacity to the global logic IC industry in the years to come. We will provide our customers with capacity and technology. We are going to back them 100%.

With 28-nanometers and the subsystem -- sorry, with the 28-nanometers and the subsystem and the system technology developing, 28-nanometer is being rapidly ramped up; 28-nanometer and especially technologies as well are being developed actively. We see very strong growth for the Company in the next few years.

The strategy we outlined to you two or three years ago is going to bear fruit. It has already borne some fruit and it is going to bear even more fruit. The fruit will be a period of very strong growth for the next few years. Keeping our mission in mind and looking forward to the very strong growth for the Company for the next few years, we have increased the estimate of capital expenditure of this year from $6 billion to $8 billion to $8.5 billion.

Of the increase of $2 billion to $2.5 billion, $1.3 billion to $1.5 billion is for 28-nanometer, $700 million is for 20-nanometer pull-in. We originally had planned to spend the first large increment of 20-nanometer capacity next year. Now we are planning to pull-in that investment to this year.

About $200 million is for BSI and the embedded flash. About $100 million is for backend, which is the system and the subsystem integration that I just talked about. Therefore after the sequential decline of the second half of last year I'm very happy that we now have bright news. And it's not just a cyclical movement, because the outlook is based on primarily technology progress; on the 8-nanometers; 20-nanometers; some special technologies; embedded flash; CMOS image sensor; and then in the slightly longer ranger future, subsystems integration. Thank you very much.

Elizabeth Sun - *TSMC - Head of IR*

All right. This concludes our prepared statements. Operator, please open the floor to questions.

QUESTIONS AND ANSWERS

Operator

(Operator Instructions).

Daniel Heyler, Bank of America Merrill Lynch.

Daniel Heyler - *Bank of America Merrill Lynch - Analyst*

I had follow-up on the FinFET question, Dr. Chang. Today you had in just your opening comments you had mentioned that FinFET would be introduced after the 20-nanometer planar version. I don't know if I'm reading into this too much or not, it sounded like maybe a little bit of a different tone then previously. I believe last time you guys said that FinFET would be on -- most likely on 14-nanometer. So just to clarify that, would FinFET possibly be on a later version of 20-nanometer or is it still embedded in the 40-nanometer ramp -- 14-nanometer ramp?

Morris Chang - *TSMC - Chairman and CEO*

Well, I'm not saying that, I'm not saying either. And I think it could still be the 14-nanometer, but it can also be a later version of 20-nanometer. And we -- at this point I'm not going to predict or commit either way.

Daniel Heyler - *Bank of America Merrill Lynch - Analyst*

Okay, great. Thank you for that.

And then with regard to the huge growth that you're seeing in 2Q and it seems like pretty good visibility, as you said, likely growth into the third quarter for this year. Maybe walk us through the sustainability of that, because clearly a lot of smartphones getting introduced by handset companies across the world and tablets. So beyond the product introductions in 2Q and 3Q, what are your thoughts on sustainability of growth from fourth quarter into next year?

Morris Chang - *TSMC - Chairman and CEO*

I think that there may be some cyclicality in the one year, two year term. But as far as the long-term is concerned -- I'm talking about three, four years -- I am quite confident that our three or four year growth is sustainable, because we're not just talking about the hand-held products, the mobile products sector, although we do depend quite a bit on it.

But in addition to the strong growth of the mobile product sector, which benefits us, we're also talking about leadership; technology leadership, capacity leadership in the entire global logic IC industry. Of course, I'm talking about leadership of -- leadership as a foundry. But that's getting to be more important in the whole scheme of things also now.

So I'm banking on leadership, technology and the capacity leadership plus trust from our customers, which we have had for a long time and we plan to maintain in the future. I'm banking on our leadership in those areas plus the strong growth of the mobile products.

Daniel Heyler - *Bank of America Merrill Lynch - Analyst*

Thank you for that. And if I --

Morris Chang - *TSMC - Chairman and CEO*

I hope I've -- yes.

Daniel Heyler - *Bank of America Merrill Lynch - Analyst*

You sure have. Thanks very much. And if I may ask just one more and then I'll get back in the queue.

So today you'd mentioned that it's quite difficult to predict the mix of 20-nanometer, which is exceeding your expectation for the fourth quarter I think over 20% of revenue by fourth quarter, which is a very steep ramp. But predicting the mix between the bulk version or the so-called Poly/SiON version and then the higher performance lower power version, the high high-K metal gate version. Predicting the mix between those is difficult and I understand somewhat customer driven. Once the High-K Metal Gate kicks in, are there ASP implications for that? Is that a higher -- commanding a higher SP variety of the 28?

Morris Chang - *TSMC - Chairman and CEO*

Yes. Yes, actually it does command higher price than the LP version.

Daniel Heyler - *Bank of America Merrill Lynch - Analyst*

Is it meaningful?

Morris Chang - *TSMC - Chairman and CEO*

I beg your pardon?

Daniel Heyler - *Bank of America Merrill Lynch - Analyst*

Is it a meaningful price difference? I mean, given the performance and the power envelope is I believe materially better. I'm just wondering whether you would be capturing a meaningful ASP lift from the high (multiple speakers)?

Morris Chang - *TSMC - Chairman and CEO*

Yes, I think -- I would call it a meaningful one, yes.

Daniel Heyler - *Bank of America Merrill Lynch - Analyst*

Okay. Thank you very much.

Operator

Mehdi Hosseini, Susquehanna International.

Mehdi Hosseini - *Susquehanna International - Analyst*

Going to Dan's question, Dr. Chang, can you please help us better understand or evaluate the 28-nanometer High-K Metal Gate coming out of Taiwan versus competitors, gate-last versus gate-first? We do know that gate-last is sustainable, but is there anything from your end that you can offer to better help us understand the differences and how it is going to help you keep the leadership? And I have a follow-up.

Morris Chang - *TSMC - Chairman and CEO*

Now as far as gate-last versus gate-first is concerned that battle is over, and gate-last has won. Now I think two to three years ago when I first resumed the CEO responsibilities that was a very controversial issue, and at that time I think I took some time to explain to the investors what the technical differences were. And basically, both have their advantages; gate-last and gate-first have their advantages. And both also have their disadvantages.

And just to put it very simply, gate-first appeared to be easier to implement. However, in the actual implementation you could run into serious difficulties, and we anticipated that perhaps better than the people who decided to use the gate-first approach. So we felt that ultimately gate-last would be the correct route. And all right -- so I say the battle is over because even though some companies have continued to pursue gate-first on

the 28-nanometer, 32-nanometer, but they have also decided to switch to the gate-last route in their 20-nanometer. So I don't think that it's an issue anymore.

Mehdi Hosseini - *Susquehanna International - Analyst*

Got it. And then one follow-up on the operating margin. The last time it peaked at 42% in Q4 of '05. Given the improving blended ASPs and the challenges with increasing utility cost and everything, do you think that you can meet or exceed that 42% operating margin from Q4 of '05?

Morris Chang - *TSMC - Chairman and CEO*

I -- let me ask our CFO, Lora, to answer that one.

Lora Ho - *TSMC - CFO and VP*

Q4 of '05 actually was a long time ago. Yes. It's not trying --

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Mehdi Hosseini - *Susquehanna International - Analyst*

Well, I'm just trying to -- I'm trying to understand how a better blended ASP is going to help offset some of the higher cost associated with like electricity, and would you be able to capitalize on it and actually be able to continue expand operating margin going forward?

Lora Ho - *TSMC - CFO and VP*

Let me comment your Q4 of [P5] first, and I'll go to the utility cost impact to your margin. Before 2008, actually the profit sharing expense in Taiwan was not expensed.

Morris Chang - *TSMC - Chairman and CEO*

Bonuses, yes.

Lora Ho - *TSMC - CFO and VP*

Employee bonus. After 2008, it was expensed. Now actually it has quite a significant impact to our profitability. Now we have allocated about 13.5% from our net income to employee as an employee bonus. If I remember correctly, the impact to operating margins is about 5% digit point. So that's the major difference, okay.

Nowadays, utility costs will go up. In the second quarter we anticipate the utility cost for TSMC will go up by 38% in average. That will cost the 0.5% operating margin decline in the second quarter. And going forward to second half, the impact will be bigger, will be about 1 percentage point.

So other than that -- and we also have foreign exchange impact. NT dollar has appreciated pretty much in the recent few years. If I -- you remember we have a -- give a rough estimation for every percent of exchange rate change. The impact to our gross margin was about 0.4 percentage point. So that's another factor that's beyond our control.

Mehdi Hosseini - *Susquehanna International - Analyst*

But given the trend in 28-nanometer ramp and better ASP contribution, is that -- would that be enough to offset some of these headwinds on the margin front?

Morris Chang - *TSMC - Chairman and CEO*

Well, let me take up the question now. I think you understand that -- did you hear Lora's explanation of the employee profit sharing, which was not expensed --

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Mehdi Hosseini - *Susquehanna International - Analyst*

Yes.

Morris Chang - *TSMC - Chairman and CEO*

-- until '08? So the period that you mentioned -- the last quarter of '05, did you say? Yes.

Mehdi Hosseini - *Susquehanna International - Analyst*

Yes.

Morris Chang - *TSMC - Chairman and CEO*

Last quarter of '05 the employee bonus, the employee profit sharing was not expensed. And so if you normalize the profit margin, the operating profit margin at that time to the present day situation, you will lose 5 points right away there. So you said 42%, did you not?

Mehdi Hosseini - *Susquehanna International - Analyst*

Yes.

Morris Chang - *TSMC - Chairman and CEO*

So you lose 5 points right there, so it's 37%. And Lora then went on to explain the power cost and the exchange rate and so on. So now if you're asking whether one day we'll get back to 37% again operating profit, 37% operating profit, my answer, yes, yes. And I would like to see that day come, yes. Yes, I don't -- and I see no intrinsic reason why we can't.

Mehdi Hosseini - *Susquehanna International - Analyst*

Got it. Thanks so much. I will go back in the queue.

Elizabeth Sun - *TSMC - Head of IR*

Okay.

Operator

Randy Abrams, Credit Suisse.

Randy Abrams - *Credit Suisse - Analyst*

Wanted to see if I could ask on what are the factors that prompted the decision to pull-in $700 million to accelerate 20-nanometer, and if you could talk about what's the pull in? Would this pull the volume inflection and so comes back to the two-year cadence so that second half '13 it would ramp up rather than early 2014?

Morris Chang - *TSMC - Chairman and CEO*

I got the first part of the question. Let me -- the two-year cadence, second half '13 -- yes. Well, look, let me answer the first part of the question first.

What were the factors that caused us to pull-in the 20-nanometer, let's say, pilot line. Actually, the motivation was quite tied to the experience we have -- we are having on 28-nanometers. Now in the 28-nanometer node, 28-nanometer is the first time when the mobile product, IC customers played a big role in the ramp up. And they are very big users. So that's -- so right now we are having to ramp up very fast, faster than we ever have previously, because previously we did not have big users that needed a lot of chips, wafers at the initial stage of the ramp up.

Now we anticipate that in the 20-nanometer we will have big users just as we have them now in 28-nanometer. In 20-nanometer we will have to ramp up very fast, perhaps even faster than we are doing -- I think will be faster than we are doing in the 28-nanometer.

So it will be much to our advantage to shorten the learning cycle. And the $700 million capital expenditure was just pulled in. We were originally going to do it sort of a bit later in next year. And now, we feel that it will be to our advantage to learn faster, sooner, and that's why we want to pull in this $700 million capital expenditure into this year.

Randy Abrams - *Credit Suisse - Analyst*

Okay.

Morris Chang - *TSMC - Chairman and CEO*

Now the second, the two-year cadence, what does that mean?

Randy Abrams - *Credit Suisse - Analyst*

Yes. What I was implying by that, 65-nanometer ramped second half 2007, 40-nanometers second half 2009. So 28, instead of the second half 2011. You're going much faster route the first half of '12. So I wanted to see if that gets you back to the second half of 2013, we should start the real volume inflection on 20-nanometer now.

Morris Chang - *TSMC - Chairman and CEO*

No, I don't see the real volume of 20-nanometer in the second half of '13 yet. I see the real volume in the first half of '14, perhaps starting from the first quarter of '14. So as far as the cadence is concerned, the two-year cadence or the more slow 18 months, I really think that it may slow down a little bit.

Randy Abrams - *Credit Suisse - Analyst*

Okay. And maybe the following question. Wanted to see because capacity will take a few quarters to ramp up, and I think you mentioned first quarter 2013 you'll be fully cut up. Is the shortage opening the door a bit to some multi-sourcing or a bit more than you might have wanted? But I guess I just wanted to see what you're seeing from customers that they're trying to do that or you can keep up with most of the business?

Morris Chang - *TSMC - Chairman and CEO*

Yes, it has. But at the end we believe that those or he who has the best and the most will get to be the primary supplier.

Randy Abrams - *Credit Suisse - Analyst*

Okay, thanks a lot.

Morris Chang - *TSMC - Chairman and CEO*

Yes.

Operator

Steven Pelayo, HSBC.

Steven Pelayo - *HSBC - Analyst*

A question for Lora, first, just a little explanation on the March quarter results, especially the gross margin upside. Revenue grew about TWD800 million, the gross profit grew about TWD3.5 billion, so a huge incremental margin there. I'm struggling to understand what were the drivers behind that and it was quite the step function improvement in gross margin than what I was looking

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Lora Ho - *TSMC - CFO and VP*

Steven, you are talking about the first quarter?

Steven Pelayo - *HSBC - Analyst*

Correct.

Lora Ho - *TSMC - CFO and VP*

So can you repeat your question again?

Steven Pelayo - *HSBC - Analyst*

I'm struggling to understand why the incremental gross margin in the first quarter was so strong, yet a little bit of revenue growth but a very big gross profit growth. What were really the drivers behind that?

Lora Ho - *TSMC - CFO and VP*

Okay. The driver is the utilization for the first quarter associated with the strong second quarter, because we have seen the demand were coming very strong for second quarter. So we start to build a working process in the first quarter, start a help to the Fab overall utilization. So we gain utilization from that point.

Steven Pelayo - *HSBC - Analyst*

Yes, I guess I'm a little clear with the -- wouldn't the cost raise up with building up that WIP?

Lora Ho - *TSMC - CFO and VP*

Yes, the WIP cost go up, and I explained the DOI went up by four days mainly because of the WIP.

Steven Pelayo - *HSBC - Analyst*

Okay, I will follow that up later. That's fine. Then a question for Dr. Chang, I asked earlier today about the capital intensity ratio that's kind of 40% to 50% revenues. It looks like you're going to spend for three years here. And I asked is that the new norm, and you said -- well, you didn't think necessarily that was the norm; it was part of the cycle.

But I guess I'm thinking out just over the next two-three years since that's going to be pretty expensive and I assume there's going to be a 450-millimeter Fab investment sometime in the next few years as well, isn't there risk that we actually do have to sustain this kind of high level of capital intensity?

Morris Chang - *TSMC - Chairman and CEO*

Well, look, it's -- I really can't answer your question in one or two sentences. I mean, it all comes back to having to integrate all the financial factors into the business equation. All I will do -- all I can do is to say that before we commit the kind of capital we must have the potential returns, meaning potential profit and the potential return on investment in pretty good grasp before we commit the capital.

So -- in a strong growth period I do not think that the 40%, 50% capital intensity per se bothers me. But in the long run I don't really think that it's permanently sustainable. I mean it's -- I think that's -- you have to run huge gross margins in order to justify a 40%, 50% capital intensity. But in a short burst -- and I mean -- by short burst I mean a 3-4 year burst -- I really think that as long as we have the potential returns in grasp, I really think that just 40%, 50% capital intensity per se does not bother me.

We had history to prove that. We had experience to prove that. We had experience to prove that in several year -- in periods of several years we could sustain 40%, 50%. And then for again a pretty long period of time we had only 25%, 20% capital intensity, and those happen to be low-growth years too. The 20%, 25% capital intensity years happen to be low-growth years too. So it's a question -- I think it's a question of seizing an opportunity, a growth opportunity when it presents itself.

Steven Pelayo - *HSBC - Analyst*

Okay, understand. If I could just sneak into housekeeping questions here, your tax rate is a little bit lower than I expected, Lora. I'm curious what the outlook is for tax rate? And then, secondarily, I didn't see that you gave any guidance on where you thought the segments growth rates were going to be. What was going to be the relative out performers or underperformers in the second quarter? If I get help with those two last questions that's it for me.

Lora Ho - *TSMC - CFO and VP*

You see the tax rate -- the tax rate is like last year, it's about 7% to our net income before tax. And this year we expect it's going to be around 8%. The reason being it's lower than the corporate income tax rate of Taiwan is because we have some tax credit. And we also gain further by the (inaudible) of encouragement of tax incentive. We still enjoy that and we will continue to enjoy that for several years. So before that happened, our tax rate will now be as high as 17%. So it will be like 8% and it will gradually go up to 10%, 11% in the coming two years.

Okay. Your second question is about the segment growth for the second quarter. In second quarter, we see across-the-board growth for all segment. The three segment will grow above seasonal, they are industrial and others, communication and computer. But for consumer we expect the growth will be lower than seasonal.

Steven Pelayo - *HSBC - Analyst*

Thank you.

Operator

Michael Chou, Deutsche Bank.

Michael Chou - *Deutsche Bank - Analyst*

Dr. Chang, my question is that do you expect continued shortage for 28-nanometer High-K Metal Gate in 2013, given technology challenges for (inaudible) foundries? Thank you.

Morris Chang - *TSMC - Chairman and CEO*

20-nanometer?

Lora Ho - *TSMC - CFO and VP*

28.

Michael Chou - *Deutsche Bank - Analyst*

No, 28.

Morris Chang - *TSMC - Chairman and CEO*

Do I anticipate a 28-nanometer High-K Metal Gate shortage in 2013, is that the question?

Michael Chou - *Deutsche Bank - Analyst*

Yes.

Morris Chang - *TSMC - Chairman and CEO*

No, I don't.

Michael Chou - *Deutsche Bank - Analyst*

Okay, thank you. I have no further question. Thank you.

Operator

Satya Kumar, Credit Suisse.

Satya Kumar - *Credit Suisse - Analyst*

Dr. Chang, I was wondering if you could comment on your current process development plans for 14-nanometers. Specifically, I was wondering if you could comment on whether you're starting this development with multiple patenting lithography or with UV, and by when you will sort of make up your mind on what lithography process to use?

Morris Chang - *TSMC - Chairman and CEO*

Yes. On the 14-nanometer -- but there's still a choice, two possible routes; UV or immersion. And our equipment supplier is working very actively on both immersion and UV. And it's not certain yet which one will be better. It's only a question of throughput. And emersion throughput is -- there are plans to increase it pretty dramatically. Now UV throughput has improved quite a bit just in the last six months, but it's still pretty far from being acceptable in production.

Now -- so we're going to wait and see. We -- actually I think that the next, let's say, 12 months or 14 months -- I'm thinking of the middle of June '13 -- the next 14 months will be quite critical in our making a choice, making a decision of which way to go; faster immersion or faster UV.

Satya Kumar - *Credit Suisse - Analyst*

As a quick follow-up, you mentioned that you're adding some extra capacity at 28-nanometer. I was wondering if you could let us know what your original plan was in wafer start capacity at 28-nanometer and what the new plan will be at the end of this year?

And you also mentioned that you expect 28-nanometer -- maybe the biggest node that you have had. So I was wondering from a high level perspective, do you expect that the rate of capacity additions at 28-nanometer to be comparable next year compared to this year or this year is the peak year for capacity additions at 28-nanometer? Thank you.

Morris Chang - *TSMC - Chairman and CEO*

Sorry, I missed the last sentence. I missed the last sentence of your question. Do I expect the latest addition of 28-nanometer to be what?

Satya Kumar - *Credit Suisse - Analyst*

The question was, what were you previously expecting to ramp 28-nanometer capacity to and what do you now plan to wrap -- to ramp 28-nanometer capacity to by the end of this year?

And the second part was, you said 28-nanometer would be the biggest node for TSMC. So I was wondering if the amount of capacity additions on 28-nanometer is going to be higher, lower or comparable next year compared to this year?

Morris Chang - *TSMC - Chairman and CEO*

Lora, you --

Lora Ho - *TSMC - CFO and VP*

I will take the first question. The capacity was originally build and with the current incremental capital expenditure that will give us 10K more -- 10K per month I mean in terms of overall capacity for 28-nanometer for this year.

Your second question is to talk about will we have enough capacity for 2013?

Satya Kumar - *Credit Suisse - Analyst*

Yes. 2013 do you expect that the capacity addition will be higher in 28 or will it be similar compared to 2012?

Lora Ho - *TSMC - CFO and VP*

Okay.

Morris Chang - *TSMC - Chairman and CEO*

We'll be adding a lot more 28.

Lora Ho - *TSMC - CFO and VP*

Yes, we will continue adding 2013 as the -- 2013 will be continued growth in the demand of 28-nanometer overall.

Morris Chang - *TSMC - Chairman and CEO*

Well, look, when I said that it will be the biggest node, I am measuring it in terms of the peak or the level of or the saturation output per month. And if you look at the past -- we had the records and the best nodes, the highest nodes so far was 65-nanometer. And I believe, if my memory serves me correctly, the mountain top output was in the order of 120,000 or 130,000 per month.

Lora Ho - *TSMC - CFO and VP*

Per month, correct.

Morris Chang - *TSMC - Chairman and CEO*

And when I say that 28 will be the biggest node, I mean that I expect 28 will top that.

Satya Kumar - *Credit Suisse - Analyst*

Thank you.

Elizabeth Sun - *TSMC - Head of IR*

All right. In the interest of time I think we'll only accommodate two more callers' questions. The next one please.

Operator

Dan Malcolm, Viking Global.

Dan Malcolm - *Viking Global - Analyst*

Just a quick question on one of the -- on this capacity slide that you guys have. It looks like for Fab-14 you've got wafer capacity declining in the second quarter and then ramping back up again in 3Q and 4Q. Can you just explain what's going on there? I assume that's just a transition to a different process node.

Lora Ho - *TSMC - CFO and VP*

Okay. The reason of Fab-14 capacity goes down for next quarter is because we're migrating 65-nanometer to 28-nanometer. So currently, we have more 65 which can be used. Most of the equipment can be used for 28, so we're doing a migration.

Dan Malcolm - *Viking Global - Analyst*

Perfect. Thanks.

And then just on the last comment for Morris about 28-nanometer being a bigger peak than the 65-nanometer peak. What's the time frame when you expect to hit that? Is that this year or you expect that would happen some time next year?

Morris Chang - *TSMC - Chairman and CEO*

I think it will be -- it will possibly be 2014, I think.

Dan Malcolm - *Viking Global - Analyst*

Okay, when you surpass it. And you -- have you said what you guys think about --

Morris Chang - *TSMC - Chairman and CEO*

Wait a minute. When we reach the peak of -- yes. When we surpass it?

Dan Malcolm - *Viking Global - Analyst*

When you see the 120, 130 that you were --

Morris Chang - *TSMC - Chairman and CEO*

Yes, when we surpass the 120,000, 130,000. You're right, yes.

Dan Malcolm - *Viking Global - Analyst*

Okay. Have you said what you expect your wafer capacity on 28-nanometer to be in total this year by the end of this year?

Morris Chang - *TSMC - Chairman and CEO*

The what? 20? Right, 28.

Dan Malcolm - *Viking Global - Analyst*

28.

Lora Ho - *TSMC - CFO and VP*

It will be ranging from 350K to 400K for the whole year.

Dan Malcolm - *Viking Global - Analyst*

For 28?

Lora Ho - *TSMC - CFO and VP*

Yes.

Dan Malcolm - *Viking Global - Analyst*

Okay. 350K to 400K for total for the year.

Lora Ho - *TSMC - CFO and VP*

Yes.

Dan Malcolm - *Viking Global - Analyst*

Thank you very much. Appreciate it.

Elizabeth Sun - *TSMC - Head of IR*

Last question now.

Operator

[Alahon Ng], BNP.

Alahon Ng - *BNP - Analyst*

For 28-nano would TSMC still offer both (inaudible) and High-K Metal [dissolution] or a just High-K Gate?

Morris Chang - *TSMC - Chairman and CEO*

For 28, just High-K Metal Gate.

Alahon Ng - *BNP - Analyst*

I see. Got you.

And second one, what percentage of the 28-nano equipment would be upgradeable to 20-nano? Just I want to get a feeling from you.

Lora Ho - *TSMC - CFO and VP*

About 70% of 28 equipments upgradeable to 20-nanometer.

Alahon Ng - *BNP - Analyst*

Is that dollar value, right?

Lora Ho - *TSMC - CFO and VP*

70%, yes, dollar value.

Alahon Ng - *BNP - Analyst*

Okay, all right. Okay, great.

Elizabeth Sun - *TSMC - Head of IR*

Okay. This -- thank you. This concludes our Q&A session. Thank you for joining us today. We hope you will join us again next quarter and good-bye.

Operator

Right. Before we conclude TSMC's first quarter 2012 results webcast conference call today, please be advised that the replay of this conference call conference will only be accessible through TSMC's website at www.tsmc.com.

Thank you all. You may now disconnect.