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OVERVIEW:

Co. reported 2013 revenues of TWD597b or about \$20b and EPS of TWD7.26. 4Q13 revenue was TWD146b and EPS was TWD1.73. Expects 1Q14 revenues (based on current business expectation and forecast exchange rate of TWD30) to be TWD136-138b.



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PRESENTATION

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

(Spoken in foreign language) Welcome to TSMC's Fourth Quarter 2013 Earnings Conference and Conference Call. This is Elizabeth Sun, TSMC's Director of Corporate Communications and your host for today.

Before we begin, please let me extend our warmest wishes to all of you for a very happy year of the horse. Today's event is webcast live via TSMC's website at www.tsmc.com. If you're joining us through the conference call, your dialing 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, Ms. Lora Ho, will summarize our operations in the fourth quarter and full-year of 2013, followed by our guidance for the current quarter. Afterwards, TSMC's Chairman, Dr. Morris Chang and TSMC's two Co-CEOs, Dr. Mark Liu and Dr. C.C. Wei, will jointly provide a couple of 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 remind everybody that today's discussions may contain forward-looking statements that are subject to significant risks and uncertainties, which could cause actual results to differ materially from those contained in the forward-looking statements. Please refer to the Safe Harbor notice that appears on our press release.



And now, I would like to turn the podium to TSMC's CFO, Ms. Lora Ho.

Lora Ho - *Taiwan Semiconductor Manufacturing Co., Ltd. - SVP & CFO*

Thank you, Elizabeth. Good afternoon and happy New Year to everyone. Thank you for joining us today. I will start my presentation with financial highlights for the fourth quarter and the recap of 2013 financial performance, followed by the guidance for the first quarter of 2014.

In the fourth quarter, TSMC's business was negatively impacted by semiconductor supply chain's inventory management. On a sequential basis, fourth quarter revenue declined 10.3% to TWD146 billion. Gross margin was 44.5%, down four percentage point from the third quarter, mainly due to lower capacity utilization. Total operating expenses decreased 11% as we took several expense-cutting measurements during the quarter. This leads to an operating margin of 32.8%, down 3.9 percentage point from the third quarter.

Non-operating items was again of TWD2.6 billion. We have reversed the TWD1.2 billion impairment loss due to strong business recovery from one of our invested company. In addition, we received the last payment of litigation settlement from SMIC. Overall, EPS was TWD1.73 in the fourth quarter. ROE was 21.7%.

Let's take a look at revenue by applications. During the fourth quarter, inventory correction continued across all major segments of the semiconductor supply chain. Our communication, computer and consumer-related revenue declined 13%, 7% and 20% respectively, while industrial and standard product remained flat during the quarter.

On a full year basis, communication increased 29% and represented 54% of our revenue of 2013. This reflected the strong demand for application processors, baseband, display drivers and other peripheral ICs used in mobile computing devices. Computer decreased 10% with PC graphics declining the most. Consumer increased 43% year-over-year, reflecting the strong demand in the next generation game consoles. Industrial and standard increased 14% as mobile devices use various ICs enabled by our specialty technologies, such as touch controller and power management IC, et cetera.

By technology, 28-nanometer contributed 34% of our total wafer revenue in the fourth quarter, up from 32% in the third quarter. On a full year basis, 28-nanometer tripled and they contributed about 30% of our total wafer revenue, a big increase from the 12% in 2012.

Now let's move on to the balance sheet. Cash and marketable securities was TWD245 billion at the end of the fourth quarter. Current liability increased by TWD42 billion, due to higher accounts payable to equipment suppliers. Accounts receivable turnover days increased to 48 days. Days of inventory remained at 45 days.

Let me make few comments on the cash flows. During the fourth quarter, we generated TWD103 billion from operations, invested TWD74 billion in capital expenditure and repaid TWD2 billion short-term loans. At the end of the fourth quarter, our cash balance increased TWD26 billion to TWD243 billion. In the fourth quarter, free cash flow was an inflow of TWD29 billion.

Now I would like to give you a recap of our performance in year 2013. 2013 was another record year for TSMC. Thanks to the technology leadership and excellent manufacturing execution in 28-nanometer, we were able to capture the strong growth in mobile computing market. From the financial point of view, revenue increased 18% year-over-year to reach TWD597 billion or in the US dollar term about \$20 billion.

On the profitability side, gross margin declined 1.1 percentage point to 47.1%, due to lower capacity utilization in 2013, while our structural profitability continued to improve. On cash flow, we spent TWD288 billion or \$9.7 billion in CapEx, up 17% from 2012. However, we were able to grow operating cash flow at a faster rate of 22% to reach TWD347 billion. Therefore, free cash flow increased by 54% year-over-year to reach TWD60 billion.

On earnings, income before tax increased by 19% versus 2012. Meanwhile we took a hit by the higher effective tax rate. The effective tax rate went up from 9% in 2012 to 13% in 2013. As a result, EPS increased at a slower pace of 13% to reach TWD7.26, set a new record. Overall, our ROE was 24% for the whole year, met our long-term financial objective of bigger than 20% ROE.

I have finished my report on financial part. Now, let me provide you the first quarter outlook. Based on the current business expectation and a forecast exchange rate of TWD30, we expect our revenue to be between TWD136 billion and TWD138 billion. This would translate into 6% Q over Q decline. On the margin side, we expect the first quarter gross margin to be between 44.5% and 46.5% and operating margin to be between 32% and 34%.

As you can see, first quarter gross margin is expected to be better than the fourth quarter, despite a lower revenue. Let me explain why. You all know our business has certain seasonality. First quarter is normally a slow quarter. If we can start wafers earlier in the slower quarter, then we will be able to complete more wafers in the following quarters when the business pace picks up. This way we're able to complete and ship more wafers to support a surge demand in a peak quarter without having to build to a peak capacity for that quarter. Meanwhile, we can also benefit from better utilization rate in the slower quarter and improve our profitability. We began to implement this practice few months ago and expect it to benefit our gross margin by 2 percentage points to 3 percentage points in the first quarter.

Another thing I want to highlight is the tax rate for 2014. We expect our full-year effective tax rate to be about 13.3%, which is about the same as 2013's 13%. However, from a quarterly perspective, second quarter would carry about 40% the total tax burden for the whole year, due to the need to accrue the 10% on undistributed retained earnings.

This concludes my remarks. Let me turn the podium to our Chairman, Dr. Morris Chang.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Good afternoon, ladies and gentlemen. Today, our comments are scheduled as on the slide on your left. First, I'm very glad to have the opportunity to introduce our new top management team. I'd first start with Lora, although I think everyone knows Lora well. Lora has a bachelor's degree from Chengchi University, a master's degree from National Taiwan University, both degrees in finance. She worked for Cyanamid, Wyse, Thomas & Betts and TI-Acer before she joined TSMC in 1999. And she has been TSMC's CFO since 2003.

Next, Dr. C. C. Wei. C. C. has a bachelor's degree from Chiao Tung University and a Ph. D. from Yale University, both in electrical engineering. C. C. worked for TI, SGS, Chartered before joining TSMC in 1998. C. C. has been Senior VP of Operations, Senior VP of Business Development, Co-COO, and in the Co-COO job CC was successively responsible for R&D and Operations. Now C.C. is President and Co-CEO. C.C. is 60 years old and I should add that Lora is 57 years old.

Mark Liu; Mark has a B.S. from National Taiwan University and a Ph. D. from Berkeley, both in electrical engineering and computer science. Mark worked for Intel, Bell Telephone Labs before joining TSMC in 1993. And at TSMC he has been VP, Senior VP of Operations and he was also a Co-COO, and all the time he was Co-COO he was responsible for our sales, marketing and planning. And now Mark and C.C. are Presidents and Co-CEOs of the Company. Mark is 59 years old.

I am not going to introduce myself. I think you all know me. So let me talk about 4Q and I would just give a few comments, a few words on the year 2013 and I would say more words on this year.

4Q, I think, Lora already discussed it. It's pretty much as we guided it three months ago. Our revenue was affected by the supply chain's inventory management across almost all major sectors, particularly in communication-related applications. The supply chain DOI declined from one day above seasonal in the third quarter to one day below seasonal in the fourth quarter. However, our structural profitability remained intact. The lower utilization caused by lower revenue resulted in a lower gross margin and operating profit percent than 3Q. On 2013, overall, we are pleased by the results. It was another consecutive year of record performance and as Lora pointed out, revenue grew by 18% and profit before tax grew by 19%.

Now looking at 2014, we expect still another consecutive year of double-digit growth in revenue and I will talk a little more about profit later. 1Q is a seasonally weak quarter for IC companies, including us, and supply chain continued to manage inventory conservatively, even when the DOI has already reached below seasonal level. We expect the supply chain DOI to be two days below seasonal in 1Q -- at the end of 1Q. Our structural profitability in 1Q still remains intact. In fact, it will probably improve slightly, as you can tell from the guided profit margins.

For full year 2014, we forecast the following industry numbers. For worldwide semiconductor industry, we forecast 5% growth. For fabless industry, we forecast 8% growth, and for foundry industry, we forecast 10% growth. For TSMC, as I already did, we are forecasting revenue growth surpassing the growth of the foundry industry. 2014 capital budget is estimated to be between \$9.5 billion and \$10 billion, similar to that of last year. About 95% of the capital expenditure is for advanced technologies and we mean 20 nanometers, 16 nanometers, more 28 nanometers, R&D and our mask operation.

Depreciation expense is expected to increase by about 35% year-to-year. The ratio of depreciation expense to revenue is expected to rise by a few percentage points in 2014. However, we will have a higher blended ASP by several percentage points, resulting from new technologies, principally the high-K metal gate 28 nanometer and the 20 SoC.

We also plan to have better operating efficiencies. The higher operating efficiency would include lower variable costs per wafer, higher manufacturing productivity, et cetera. Now between those two principally the higher blended average price, which results from the richer product mix, principally from that and also partly from the better operating efficiencies, we intend to offset the increase of depreciation as a percent of revenue.

We believe we can maintain and perhaps even improve our structural profitability in 2014 versus last year. From second quarter on we'll see strong growth via our growth engines. In terms of market segments, mobile products, smartphones and tablets, will be the growth engine. In terms of technology, high-K metal gate 28 nanometer and 20 SoC are our growth engines.

I will say a few words about mobile products now and C.C. will, a little later, talk about the technologies, the new technologies. Smartphones are expected to grow by 25% to 1.246 billion units and tablets are expected to grow by 21% to 307 million units. Now to be a little finer grained, the high-end smartphones are expected to grow 8% year-over-year to 325 million units, the middle end 22% year-over-year to 449 million units, the lower end 45% year-over-year to 472 million. And due to the continued performance improvements, which means multi-mode and 64 bit, et cetera and also due to feature enhancements, such as finger print, MEMS, NFC and new standards in WiFi and Bluetooth, we expect silicon content for the mobile devices to continue to rise, silicon content in the mobile devices to continue to rise.

And TSMC's share in the non-memory silicon content of these devices is expected to increase from 45% last year to 47% this year. As a result, TSMC revenue from mobile products are expected to grow more than 35%. And just looking a little further ahead, further than this year, we expect to continue benefitting from the growth of mobile products in 2015 and expect to see emerging devices, such as wearables and others to join the line for the mobile products.

Now let me ask C.C. to speak to the technology aspects of our growth engine. C.C.?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Yes, thank you Chairman. Good afternoon everybody. I am C.C. Wei and I will give you the update of our 28-nanometer high-K metal gate version. Let me recap the history. We started 28-nanometers volume production in year 2011 mainly on the 28LP, the oxynitride version. And since then the business continued to grow. So last year, we had tripled 28-nanometers of business versus year 2012. That in this year, year 2014, the business for 28-nanometer will continue to grow at least by another 20%, and all the increase are coming from the 28-nanometers high-K metal gate version, which is we name it 28HPM.

Let me add more color to it. We expect we're going to have about more than 100 tape-outs from about 60 customers in this year in 28HPM. Now you may ask it why? Why there are so many products that were designed on this technology? One of the main reason I can give it to you is the performance, the superior performance. For example, 28 HPM compare with the 28LP that will gain another 30% of the speed at the same kind of power consumption, or you can say that at the same power consumption -- at the same speed, you will consume 15% less power. And everybody knows that the power consumption in the mobile device is very important. That's why we think we have a very high, good business on the 28 HPM.

Now, furthermore, after the 28HPM, we also offer 28HPC, which is a low-cost version of the 28HPM. The 28HPC is developed to meet the customers' demand to compete in the mid-to-low-end smartphone market. We expect that this 28HPC will have a very strong demand in the next two years. That's what we have.

Okay, let me give you some information on the competition to explain why we are so confident on this 28 nanometers high-K metal gate business. If you still remember that long time ago, we mentioned about gate-first and gate-last. Still remember that terminology? All right. So, simply to say that gate-last version will give you better performance and a better process control. As a result, all our customers will enjoy using the gate-last versions that technology to have a higher or better performance than other products which are designed with a different approach.

In addition to that I'll say that because of the better process control and TSMC's manufacturing excellence, we have a much better yield than our competitor, so that our customer will enjoy the lower die cost. That's what we have. And that's why we explained that our confidence that the 28 nanometers business continue a very good business for us.

Now, let me switch the gear to 20-SoC. That's another exciting news that we have, I want to share with you. 20-SoC is a technology that we developed to enable TSMC's customer to lead in the mobile device market. And this technology we believe in this year, next year, well I have a very good business to capture. So, what is the status now of the 20-SoC? We have two fab, Fab 12 and Fab 14 that complete the qual of 20-SoC. And as a matter of fact, we started production. We are in volume production as we speak right now. So, it's in the high-volume production as we are speaking right now.

Let me add more information to that. First, there are more than \$10 billion had been committed to build capacity. Second, we have more than 2,500 engineers and 1,500 operators right now in manufacturing, doing the 20SoC volume production. The ramping rate will be the fastest one in TSMC's history. Using the ramping rate, you can get the hint of the business, how big the business is.

Another fact to share with you, we have probably -- at the end of this year, we have more than dozens of tape-out from about a dozen customers that they are producing the 20SoC product, okay? You may ask, good business, how about the competition? If you have a very strong competition, you might -- cannot have too much of confidence on the future. Let me talk about the competition.

I'm very confident that our 20SoC is the highest gate density in volume production at 20 nanometers node. And please remember that; highest gate density and a high volume production. I don't see any company today can claim on this kind of production and with this kind of gate density at this time, nobody. And most of our competitors, to be frank with you, they're not even into this game yet. So we are confident to have a good business that will contribute to TSMC's revenue -- wafer revenue by probably around 10% this year. And with that I conclude my presentation and thank you for your attendance.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Thank you C.C. Now looking into next year now, 2015, and perhaps even 2016, I think next year this time I will be telling you that our growth engine in technology next year, a year from now is going to be 16-FinFET. Now, recently Intel published some data, which showed our 16 FinFET technology to be behind. We think that the data is highly misleading. So I now would ask Mark Liu to speak to TSMC's competitiveness versus Intel and Samsung.

Mark Liu - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Good afternoon, ladies and gentlemen. I will start this topic by update you our recent development status of our 16-FinFET technology. 16-FinFET technology has been a very fast paced development work in TSMC and we have achieved the risk production milestone of 16-FinFET in November 2013, November last year. And this month, we should pass the 1,000 hours so-called the technology qualification. So the technology is ready for customer product tape-out.

Our 16-FinFET yield improvement has been ahead of our plan. This is because we have been leveraging the yield learning of 20SoC. Currently 16-FinFET SRAM yield is already close to 20SoC. And with this status we are developing an enhanced transistor version of 16-FinFET plus, with 15% performance improvement. It will be the highest performance technology among all available 16 and 14 nanometer technology in 2014. The above progress status is well ahead of Samsung.

Let me comment on the Intel's recent graph shown in their investor meetings, showing on the screen. We usually do not comment on other company's technology, but this is -- because this has been talking about TSMC technology and as Chairman said, has been misleading. To me it's erroneous, based on outdated data. So I like to make the following rebuttal.

On this view graph, the vertical axis is the chip area on a log scale. Basically this is compared at chip area reduction. On the horizontal axis, it shows four different technologies; 32/28, 22/20, 14/16-FinFET and 10-nanometer. 32 is Intel technology and 28 is TSMC technology. So is the following three nodes; the smaller number 20, but on 14-FinFET is Intel, 16-FinFET is the TSMC. On the view graph shown at Intel investor meeting, it is with the grey plots showing here. The grey plots shows the 32 and 20 nanometer, TSMC is ahead of the area scaling, but however, with 16, the data, grey data shows a little bit uptick. And following the same slope, go down to the 10 nanometer. What's the correct data we show on the red line, that's our current TSMC data. The 16, we have been volume production on 20 nanometer, as C.C. just mentioned, this is the highest density technology in production today.

We took the approach of significantly using the FinFET transistor to improve the transistor performance on top of the similar back-end technology of our 20 nanometer. Therefore, we leveraged the volume experience into volume production this year, to be able to immediately go down to 16 volume production next year, within one year. And this transistor performance and innovative layout methodology can improve the chip size by about 15%. This is because the driving of the transistor is much stronger, so that you don't need such a big area to deliver the same driving circuitries.

And for the 10 nanometer, we haven't announced it, but we did communicate with many of our customers that that will be the aggressive scaling of technology we're doing. And so, in the summary, our 10 FinFET technology will be qualified by the end of 2015. 10 FinFET transistor will be our third generation FinFET transistor. This technology will come with industry's leading performance and density. So, I want to leave this slide by 16 FinFET scaling is much better than Intel said, but still a little bit behind Intel.

However, the real competition is between our customer's product and Intel's product or Samsung's product. TSMC's Grand Alliance; that is the alliance of us, our customers, EDA, IP, communities and our supplier is the largest and the only open technology platform for the widest range of product innovations in the industry today. As for the tape-out of our 16 FinFET, more than 20 customer product tape-outs on 16 FinFET technology is scheduled this year already. They include wide range of applications; baseband, application processors, application processor SoCs, graphics, networking, hard disk drive, field programmable array, CPUs and servers. Our 16 FinFET technology captured the vast portion of products in the semiconductor industry.

We've been actively working with our customer's designer on this since last year. TSMC's speed and productization of the customer's product and our ability to execute for a short time-to-market for a customer are far superior than Intel and Samsung.

Lastly, I would comment on the mobile products. With this 16 FinFET technology and the innovations of processor architecture and various IP from our customers, we are confident that this planned, 16 FinFET mobile product, which is going to tape out to us, will be better than Samsung's 14 nanometer and better than Intel's 14 SoC. Thank you very much.

Morris Chang - Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman

Thank you, Mark. Summary; in summary, I want to say the following. First, in 2014, we expect double-digit revenue growth and we expect to maintain or slightly improve our structural profitability. As a result, we expect our profit growth to be close to our revenue growth.

In 2014, the market segment that most strongly fuels our growth is the smartphone and tablet-mobile segment. The technologies that fuel our growth are the 20 SoC and the 28 high-k metal gate, in both of which we have strong market share. In 2015, our strong technology growth will be 16 FinFET. We believe our Grand Alliance will out-compete both Intel and Samsung, out-compete. Thank you very much

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) Roland Shu, Citi Securities.

Roland Shu - Citigroup Global Markets - Analyst

Happy New Year, Chairman, Dr. Liu, Dr. Wei and Lora, and very happy to see Chairman to host the analyst meeting today. My first question is on the 16-nanometer FinFET and thanks for Dr. Liu explaining in detail for your technology strength on the 16-nanometer FinFET. However, [your] competitor last year talking about your 14-nanometer versus 16-nanometer and now we have 16-plus, so my question is on your -- well, is the 16-plus is improving from the design you were saying or this is just for the performance enhancement or are we going to consider to change our 16-plus to -- even to the -- same as the 14-nanometer? That is my question for Chairman. Thank you.

Morris Chang - Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman

Mark, would you answer that? You don't mind if Mark answers would you?

Mark Liu - Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO

16 FinFET-plus is a transistor enhancement. For the design -- back-end design rule are similar to 16 FinFET, therefore designer can design on 16 FinFET and re-characterize, upgrade their product performance. This transistor, as I mentioned, also can reduce the cell size, standard cell size, and with the enhanced performance transistor. That's the way to reduce the chip size. So we do not intend to change the naming. I mean this is engineering, this is the word -- this is the name that we chose earlier based on the physical consistent number and we do not intend to change name.

Roland Shu - Citigroup Global Markets - Analyst

Okay, thank you. So 16-plus or 16 actually is same design. What is the 20 and -- with the better or at least a similar performance as the 20 nanometer? So this is for you, [Wei].

Mark Liu - Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO

The question again.

Roland Shu - Citigroup Global Markets - Analyst

I mean -- actually very happy to hear you are so confident about your 16 and 16-plus [FinFET]. My second question actually is for Lora, actually for the cash dividend. So since with have every good bottom line last year and this year and also with the improving free cash flow, so the question is on your -- under what kind of criteria TSMC is considering to increase cash dividend? Thank you.

Lora Ho - Taiwan Semiconductor Manufacturing Co., Ltd. - SVP & CFO

If you look at free cash flow, when the free cash flow sufficiently cover our current TWD3 per share dividend level, that is the time we will seriously consider to increase cash dividend.



Roland Shu - Citigroup Global Markets - Analyst

So, in my model actually my estimate this year 2014, free cash flow probably will reach about [\$3.5, \$3.6] per share. So, whether this is the only one of consideration for the free cash flow to -- above [TWD3] then you would increase the cash dividend?

Lora Ho - Taiwan Semiconductor Manufacturing Co., Ltd. - SVP & CFO

That's the major element. I will not comment on your model. Other than the free cash flow consideration, another thing is that we look at capital intensity. Our capital intensity in the past four, five years has been very close to 50%. That number will come down this year, 2014. It will even come down further in 2015. So, that add another element for us to seriously consider cash dividend increase.

Roland Shu - Citigroup Global Markets - Analyst

Okay, thank you.

Morris Chang - Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman

I guess he is asking when we will raise the cash dividend. I don't think it matters to say that certainly 2014 is perhaps the first time, 2014, dividend payable in 2015. I think this is not out of the question, okay?

Operator

Dan Heyler, Bank of America Merrill Lynch.

Dan Heyler - Bank of America Merrill Lynch - Analyst

Thanks. I came with a lot of questions, but you answered a lot of them earlier on. I've got two, but I first want to congratulate Dr. Chang and your team as well for achieving your three to five-year target, turning around technology, turning around growth in the Company. It's been remarkable to see. Also, congratulations on handing off the transition here to the management team.

I've got two questions. First, I guess, as we look at, maybe perhaps for C.C. Wei on the technology side, as we look at EUV, do you agree that mostly likely implementation of EUV appears to be for foundry number one over kind of the one to two layers at 10 nanometer and that you can kind of achieve X number wafers per hour to hit a rollout of that technology. What exactly wafers power do you need and what time will you achieve those?

Morris Chang - Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman

Mark, will you answer that please? I think he is asking whether we are considering using EUV in tandem with maybe one or two layers, that's the question, right?

Mark Liu - Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO

The current process of records, our current execution plan is -- on 10 nanometer do not have EUV, it's all in immersion layers. However, we have been working with ASML very closely and we set a target for their EUVs' throughputs. And together we have the ambition to improve the 10-nanometer cost, if the EUV development in ASML can reach our target, the target we gave them. And this two party has been working very closely. So, EUV is a cost-reduction opportunity for us on 10 nanometer.

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

Okay, and a quick follow-up on that, if we were to draw that curve that you put up earlier, would that look fairly linear, based on our current models, on your cost curve previously that you had showed?

Mark Liu - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

That curve is without EUV.

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

Exactly, without -- with the EUV and we imagined a dotted line, do we go through it with a bit of penalty there and then we are back on trend or do you think --?

Mark Liu - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

It's the same. With EUV, our design will be the same. We're not going to be waiting for that -- wait for that. Design will be same.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

We're looking at EUV just as a cost reduction.

Mark Liu - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Yes, cost reduction opportunities.

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

Excellent. Thank you very much. And then I was going to ask you, you previously on managing these swings in utilization that we've seen over the last couple of years, you're addressing that through production during these cycles. Are there other things that you can do going forward to smooth out these big swings in utilization? And I guess part of the answer I'd like to know what you think industry dynamics will be on these swings. I mean how should we think, is it pretty much business as usual from an order standpoint the last three years or could we see the orders smooth? Thank you.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

I think that Lora just explained what we have started to do, which is really what the IDMs do all the time, that is they build some inventory when the utilization is slower, they build some inventory and that's what we are doing too. Of course, in our case we have to bet right. But I do believe that we have organized ourselves. We actually -- I wanted to start doing it as early as August of last year, because even at that time we saw that the fourth quarter and the first quarter will be rather slow and -- well, but we had to organize. Organization, I mean, people have to do better, if not their job, but their bonus is on the line. This inventory we are building will not be written off. And also we have decided how much reserve we should take, et cetera, et cetera.



So now we didn't get completely organized. We didn't get -- we really didn't get going until sometime in the -- around the middle of fourth quarter. So the effect of inventory building on the fourth quarter was minimal. Now, in the first quarter, as Lora has already pointed out, it does have an effect. I think you said 2 or 3 percentage points of gross margin.

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

And is at 2 percentage points to 3 percentage points something that you're modeling kind of through the course of the year or is that in a single quarter?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

I don't think it's possible.

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

Or through the course of the cycle or is that just one quarter?

Lora Ho - *Taiwan Semiconductor Manufacturing Co., Ltd. - SVP & CFO*

Yes. I don't think you can model it for the whole year, because we have to look at lower season and up season. They are meant to be done in the lower season. So only in the low quarters we will start to build some inventory.

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

I misspoke there. I kind of meant through the cycle. Is that kind of your expectations for -- as you go through the cycle? At the trough -- each of the troughs, could we kind of see this as something you can repeat on the next correction, a couple of percentage points?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

The answer is no, but it's -- when we see that we need to use it, we'll do it.

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

Thank you very much.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

We don't model it way in advance, okay?

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

And is there anything else you can do to affect this -- the volatility and improvement in margins? Are there other things in the tool box there?



Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Yes. We -- for instance, we very carefully control the capacity we build.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

All right, we will now take our next question from the call. Operator, please proceed with the first caller on the line.

Operator

Randy Abrams, Credit Suisse.

Randy Abrams - *Credit Suisse - Analyst*

Thank you. My first question on the management structure now with the Co-COOs promoted to Co-CEOs. If you could talk about how the responsibilities would change with their promotion to Co-CEO? And for yourself, Dr. Chairman, how will your activities change versus before this move? So if you could talk about the roles for each of the different Co-CEOs and yourself now.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Yes. We started with President and the Co-CEO in November, and it has been now two months. And if you ask me now, has my life changed in the last two months? My answer is no. It has not changed. But I think that my effort, my time has been spent more on the coaching aspects. I think that -- I do believe that I do more coaching. If I spend 100 hours and -- I now perhaps spend 20 hours of the 100 hours on coaching, whereas in the past, I'd probably spend only 5 or 10 hours of the 100 hours on coaching.

Now, actually, this is an overseas call, is this correct? Yes. So let me just explain very briefly what the Taiwan law and customs are in relation to a Chairman's authority and responsibility. Basically, by both law and custom, the Chairman of a company has the ultimate authority and responsibility, basically. However, he may delegate his authority and responsibility to the President. He may also take it back anytime. He can delegate any and all, any or all of the responsibilities to the President. And now these two gentlemen, their titles is President and co-CEO. President comes first. They are, in a very legal sense, Presidents. Now the co-CEO is basically a Western term. And then in the United States, a CEO usually bears the final ultimate responsibility and authority as a Chairman in Taiwan does. In the US, it's the CEO.

Now -- so my role in the future is really to convert these two gentlemen from the Taiwan sense President to the US sense CEO, and it will be a gradual process. I don't know whether -- do you think I've explained this clearly, yes? Everybody here --

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

Randy, do you think Chairman has explained your questions clearly?

Randy Abrams - *Credit Suisse - Analyst*

Yes, that was clear. And I could ask a second question. With respect to the last conference, you did talk about the battle raging on 16-nanometer in 2015, and I want, I guess, an update on how -- given the technology progress you've made, how you're looking at 2015 with those battles playing out and your thoughts on your market share position. And also, if you see any challenge, whether it's market share or pricing with two new -- with Samsung and Intel both more aggressively doing foundries?



Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Did you get the question? I think it's about 16 --

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

16-nanometer battle in 2015.

Mark Liu - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Right now, we may intend to maintain our position in the foundry business on 16-FinFET as we did on the 28. As I mentioned, our 16-FinFET, we have over 20 tape-out already working with our customer. And it -- of course, these products will be competing with Intel's products in 2015. And that is that we are so closely working with our customers. Together, the technology is ready to tape out. We need to work with our customer closely, so that their design and the time-to-market can be caught as early as possible for their 2015 ramp.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Well, we live on technology. Just as Intel thinks or says that they do, we do that too. So, it's extremely important for us that on 16-FinFET we need to provide good-enough technology, so that the Grand Alliance of customers, of key equipment vendors, the EVAs, ARM and third-party IP developers, all those are in the Grand Alliance. We need to -- our role is to provide good technology, so that the Grand Alliance together can outcompete Intel and Samsung. And we feel fairly confident that we'll do that. So if you talk about our market share, we feel that we'll win a pretty big share of the market. I don't know how much yet, but I think that they'll be pretty big.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

Michael Chou, Deutsche Bank.

Michael Chou - *Deutsche Bank - Analyst*

Actually, it's a follow-up question on 16-nanometer, because you mentioned you should take the lead in 16-nanometer FinFET. Regarding the competition, what's your [pockets of efficiency] versus the [other's] 14-nanometer FinFET? Would you be still the leader in [power function efficiency] versus competitors' 14-nanometer FinFET mobile devices in 2015?

Mark Liu - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

In the transistor design, the speed and power is convertible. So from our intelligence, our 16-FinFET plus technology with 15% improvement on top of 16-FinFET is about the same as Intel's transistors. So that is what we are targeting at and customer can convert that speed to power consumption.

Michael Chou - *Deutsche Bank - Analyst*

Second question is, could you update your sales proportion expectation for 20 nanometer this year? Will you try for high-single digit sales on 20-nanometer?



Mark Liu - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

I thought I already said around 10% wafer revenue --

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

For the year.

Mark Liu - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

For the year, yes.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

And so by the fourth quarter, it will be much higher, yes.

Michael Chou - *Deutsche Bank - Analyst*

How about the fourth quarter this year?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Negligible.

Michael Chou - *Deutsche Bank - Analyst*

Q4, this year?

Mark Liu - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Q4 this year is very high.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Q4, 2014 will be very high. That's what I said earlier. Q4 last year was negligible.

Lora Ho - *Taiwan Semiconductor Manufacturing Co., Ltd. - SVP & CFO*

With 10% for the total year of wafer revenue, we expect fourth quarter alone 20 nanometer will contribute more than 20% of our wafer revenue.

Michael Chou - *Deutsche Bank - Analyst*

Thank you.



Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

Andrew Lu, Barclays.

Andrew Lu - *Barclays Capital - Analyst*

(Foreign language). I have two questions here. First one is regarding the capacity design for 20- and 16-nanometer FinFET. Certainly, as you indicate, we are able prepare 60k per month for 20 and 16k per month for 16-nanometer FinFET. And are we expecting -- and the last time, I remember Dr. Chang mentioned the 16-nanometer FinFET, the capacities were quite similar, 90% switchable. So can we (multiple speakers) next year, [in the CapEx] number are they even low in the industry?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

No, I don't want to say that. We believe we may capture even more market share than we now think we will and if that happens, we'll spend money. Now -- but you're right about the 20 to 16 capacity being a -- or 20 capacity being quickly convertible to 16 at a loss that is a lot less than the 10% that you implied, a lot less. Well, you said the 20 -- you said 90%, I think. Yes. So I'm saying it's more than 90%.

Andrew Lu - *Barclays Capital - Analyst*

Switchable?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Switchable.

Andrew Lu - *Barclays Capital - Analyst*

So we might see a kind of different case. [The trends] are subject to change on customer demand. We might see that next year in 16-nanometer FinFETs quite that, we might now see [50%-50%, 40 or 60], we might see a quite different (multiple speakers).

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

No. We are not -- by the way, we are not building 60,000 per month capacity of 20 and then 60,000 per month capacity of 16. They are not additive, okay.

Andrew Lu - *Barclays Capital - Analyst*

It's kind of a floating change based on the customer demand.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

I think it flows one way, from 20 to 16. It will not flow the other way.



Andrew Lu - *Barclays Capital - Analyst*

My second question is, since the 14- and 16-nanometer FinFET argument among these top three players so much, why we choose 16-FinFET in the first place? I think it's (multiple speakers) back to two, three years back.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Well, the best laid plan by man is sometimes undone by God, okay? So let me tell you the story, or rather it's not God. It's customers, okay. We actually first got committed to the 20. We got committed and then suddenly we realized that there was a need for FinFET, for a faster FinFET. This when one of the gorillas in the business announced that they were going to do FinFET. Now if we hadn't committed it already to 20, we might have skipped 20. I think we would have skipped 20. But we were committed already. So that was a good thing, getting committed. The customer was committed too. That was a good thing. That's why we've gained a great deal I think on the 20. But we had to hasten up to do the 16 now. And I think the key, the team in TSMC, the R&D team, they did a tremendous job and now getting the 16 to where it is now. That's a brief history. Did I answer your question? Well, okay, not exactly. So what was your question exactly?

Andrew Lu - *Barclays Capital - Analyst*

Okay, let me ask it in another way. When you, in fact, three years ago, when you considered 20 and 16 investment, do you consider switchable as an important part?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Yes, always. We now, for instance, when we considered 10-nanometer, we considered the 16 to 10 switchability. And you keep saying switchability. Actually, it's just convertibility, one-way convertibility. I don't see it being converted back. Yes, that is an important factor when we consider those things.

Andrew Lu - *Barclays Capital - Analyst*

So if we want to know the answer, if we invest on 14 instead of 16, what's the equivalent term used for 14-nanometer versus the -- or 16 (multiple speakers)?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

If we invest in 14 -- we are not investing in 14. I'm sorry, did I misunderstand you? You said if we invest in 14?

Andrew Lu - *Barclays Capital - Analyst*

No, if 20 into 16, 20 and 14, what percentage (multiple speakers) 20 nanometer can be used in 14 nanometer?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

My goodness. Earlier decision was not 20 and 14. Earlier decision was 20 and 16. And the reason here was, well, actually, there's -- I mean, 16 and 14 is the same, what the heck.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

Steven Pelayo, HSBC.

Steven Pelayo - *HSBC - Analyst*

Great. We could talk about 20-nanometer. You talked about it being, I think, as much as 30% faster ramp than what you had at 28-nanometer, 20% of revenues by the fourth quarter, that's all the topline. I'm curious about the margin impact too. And obviously you get a good ASP premium, but I think it took about, I don't know, maybe five quarters to get 20-nanometer corporate average margin, could you just talk a little bit about the pace, given the accelerated ramp to get 20-nanometer to corporate average margins?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Well, actually, five is pretty normal. I mean, yes, 28, it took, I guess, five, right? What is it, five?

Steven Pelayo - *HSBC - Analyst*

It is my guess.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Yeah.

Lora Ho - *Taiwan Semiconductor Manufacturing Co., Ltd. - SVP & CFO*

Seven or eight quarter for 28-nanometer, But I can tell you, 20-SoC will be the same as 28-nanometer, will reach corporate average at seven or eight quarters like 28-nanometer.

Steven Pelayo - *HSBC - Analyst*

And then if I could just get a clarification on that. The smoothing effect to the first quarter to try to take in some of the potential ramp in the second quarter, can you measure how much is that? And then does that then impact the potential growth in the second quarter? So are we taking two or three percentage points of growth away from the second quarter by pulling that into the first quarter or do you think it doesn't really impact, that there is going to be enough demand you could see in 2Q?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

No. This -- the so-called smoothing, just helps the margin, it does not affect the billing, the revenue.

Lora Ho - *Taiwan Semiconductor Manufacturing Co., Ltd. - SVP & CFO*

If I can add one more point, the real purpose is not to lose capacity. When you have a surge demand and your capacity is not enough and you lost it, you lose the business. By switching and smooth among quarters, we don't lose the product -- we don't lose the market share. That's the main purpose. So we don't have to build so much capacity, especially such peak capacity probably only exist for a few quarters, which is bad for the Company. Now, you understand that? Okay.



Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

Gokul Hariharan, JPMorgan.

Gokul Hariharan - *JPMorgan - Analyst*

Hi, thanks for taking my question, Dr. Chang, Dr. Wei and Liu and Lora. I had a quick question, just switching now gears a little bit on the back-end side. We hear a lot about TSMC working on the back-end side, especially on 2.5D, 3D, as well as refillable processors. And you also had given kind of a target of about [\$1 billion] revenue sometime in 2015 or 2016. Could you update us on what your plans are on the back-end side? And secondly, also how does that work? When you work with the back-end partners, are you going to be full-fledged going into the just wafer level stuff or is it going to die level stuff as well? Thank you.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

C.C.?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Do I need to repeat the question? Okay. Anyway, to answer your question that's on the revenue of reaching the \$1 billion for the CoWoS and 3D IC, since we announced that the CoWoS technology and we work on the 3D IC, we're using a lot of key technologies and develop a lot of derivative applications. So today we estimate, probably will not go up to \$1 billion, but it's around \$800 million in year 2016, that's what our estimate today, all right. What's your second question, by the way?

Gokul Hariharan - *JPMorgan - Analyst*

Yes. Second is, is it going to be -- the back end activities, is it going to be limited only to the very high-end 2.5D/3D related products or is it also going to be whatever is going to be wafer-level package, like wafer-level CSP, those kind of areas?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Okay. The correct answer is, we are now shooting for some kind of technology balance here. We're always working with that customer to meet their demand, all right? So to answer your question, it's whatever -- or whatever our customer ask us to integrate, to give them better service, we do it, all right? So it's not limited to the 2.5D, 3D or whatever it is, all right?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

Donald Lu, Goldman Sachs.

Donald Lu - *Goldman Sachs - Analyst*

So Chairman, (spoken in foreign language). First question is, I want to ask the Chairman, how would you -- are you satisfied with the transition so far and also, how the two Presidents would share their work? Are they still rotating or not? And (multiple speakers) but probably not now. And maybe give us some details about how the Company is run. And I have a follow-up question on competition.



Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

All right. I am quite satisfied with the transition. And these two gentlemen; Mark is now responsible for sales, marketing, strategic planning, business development, and yes, information technology and materials management, all those. And C.C. is responsible for operations, all the operations, and he is also responsible for specialty technology R&D. Specialty technology incidentally accounts for 25% of our total business.

So now, Donald, your other question is whether they're going to rotate. My plan currently is, I don't plan it that way, I don't plan it that way right now. However, I deem it's a pretty flexible thing. Tomorrow, I may take one part of Mark's and give it to C.C. or vice versa. But I'm not considering rotation, per se. Yes, does that answer your first question?

Donald Lu - *Goldman Sachs - Analyst*

Yes, please. Thank you. My second question is, this is as far as I can remember the first time TSMC comments on competitors, mainly, Intel and Samsung.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

That's because they picked on us.

Donald Lu - *Goldman Sachs - Analyst*

I understand. That is a very good reason. Okay, since we are already doing it, why don't you give us more color? 16-nanometer, for example, are we saying that in terms of die size, performance, our product will be very similar to Intel's 40-nanometer FinFET? And also, Mark commented that for the FinFET tape-outs, specifically there's a CPU and server chips, and can we say that TSMC's CPU and server chips will have the similar physical performance as Intel's products today?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Well, I think, Donald, we have already given everybody enough information on our 16-FinFET. I think that if we keep giving more, we would be helping our competitors who have picked on us. And so, now, we do stand on what we said. We are going to -- our Grand Alliance will out-compete Intel and Samsung. Our Grand Alliance on the 16-FinFET will out-compete. By that I don't mean that we'll completely exclude them, no, no, no. We can't do it. We won't be able to do that. But our Grand Alliance, with us as foundry supplier, will capture a large share of the 16-nanometer. You agree with that don't you?

Donald Lu - *Goldman Sachs - Analyst*

Yes. I think if you have a product in mind today, want to get to 16-FinFET, I think that your job will be more secure coming to TSMC. And make sure your product be able to deliver in the market.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

Bill Lu, Morgan Stanley..

Bill Lu - *Morgan Stanley - Analyst*

(inaudible - microphone inaccessible).

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Smartphone what?

Bill Lu - *Morgan Stanley - Analyst*

(inaudible - microphone inaccessible).

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Yes, right. Yes, I said that just now.

Bill Lu - *Morgan Stanley - Analyst*

(inaudible - microphone inaccessible).

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

No, I'm afraid I'm no expert on that. I mean -- but there are a lot of other non-semiconductor stuff in the handset. And maybe those people are getting squeezed or maybe the handset maker is getting squeezed, maybe the operator that subsidizes is getting squeezed. You asked me a general question, which I am not expert enough to answer.

Bill Lu - *Morgan Stanley - Analyst*

Or just to make sure I understand, so you kind of categorized into high-end, mid-end and low-end, do you see that the semi content is going up for each one of these segments, or what's the--?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Do we data on that, Lora?

Lora Ho - *Taiwan Semiconductor Manufacturing Co., Ltd. - SVP & CFO*

The high-end content definitely will go up. But the growth rate for high-end will be slower than the mid and low end. The mid and low end stay constant, but because the mid and low end has higher volume, which is to TSMC's advantage.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

I actually look at more. I look more at our value in the smartphone. [Our wafer revenue generated from smartphones and tablets has gone up from \$6 billion in 2012, to \$8 billion last year, to \$11 billion] (corrected by company after the call) next year, no, this year, sorry. 6, 8, 11.

Bill Lu - *Morgan Stanley - Analyst*

That's very helpful. Thank you. Second question is for Dr. Wei. You talked about 28-nanometers and I think the expectation is that you are going to try to switch customers in poly to high-K metal gate. If you look at the market this year for 28, what do you think is the split between high-K

metal gate and poly, is it 70/30, is it 80/20? And can you also talk about your expected market share for TSMC for high-K metal gate and also for poly? Thanks.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

In terms of TSMC, I would say greater than 80% of the 28-nanometers loading will be high-K metal gate.

Bill Lu - *Morgan Stanley - Analyst*

How about for the industry?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

I cannot comment on that.

Operator

Mehdi Hosseini, SIG.

Mehdi Hosseini - *SIG - Analyst*

Thank you for taking my question. I have two of them. The first one is for Dr. Liu and Dr. Wei. You offered some metrics comparing HPM with HP, talking about the speed improving by 30% and power by 15%. Would you be able to offer similar targets or similar metrics comparing 28 to 20, and 20 to 16? And I have a follow-up.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

I think it's -- it sounds like C.C., but doesn't -- did you hear the question?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Well, the question is that he asked from the 28-nanometer HPM compared with 28.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Go ahead and answer that, if you know what the question is.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

All right. If I repeat the question correctly, that is he asked about from 28HPM compete with -- not compete, compare with the 28LP, there was 30% speed improvement. Now how about the 16-FinFET? 16-FinFET actually improved much more compared with the 28HPM. Did that answer the question?



Mehdi Hosseini - *SIG - Analyst*

And what about 28?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

I cannot hear you clearly.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

Mehdi, are you still on the line?

Mehdi Hosseini - *SIG - Analyst*

Yes. Can you hear me?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

Okay. Mehdi, I think your question was asking Dr. Wei to explain what's the power and speed improvement from 28 to 20 and from 20 to 16?

Mehdi Hosseini - *SIG - Analyst*

Yes.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Okay, 28 to 20 got about 20% improvement in terms of performance. From the 20 to 16, I'm specifically talking about the 20-SoC to 16-FinFET, the 16-FinFET will have higher than 30% improvement in the speed. Does that answer the question again?

Mehdi Hosseini - *SIG - Analyst*

Yes, it does.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Okay. Thank you.

Mehdi Hosseini - *SIG - Analyst*

And let me move on to the second question that I have for Dr. Chang. Over the past two years, we have seen a significant improvement in revenues from Q1 to Q2 and this was followed by seasonal or below seasonal trend in the second half. How do you see this year evolving? Do you see this year be any different than the trend over the past two years?



Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

So Mehdi, your question is about seasonality of this year, whether we will have a strong rebound in second quarter from first quarter, and then whether we will have a stronger second half than the first half?

Mehdi Hosseini - *SIG - Analyst*

Yes. That's correct.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Our current outlook is very, very anti-normal seasonal. Our current outlook is that we have -- that the first quarter is the lowest, and the second quarter is stronger, the third quarter is stronger yet, and even fourth quarter is a bit stronger than the third quarter. Now that's -- I certainly would not call that anything seasonal at all. I think that's pretty unique for just this year and mainly because of the ramp-up of 20-SoC.

Mehdi Hosseini - *SIG - Analyst*

Thank you, that's pretty helpful.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

Eric Chen, Daiwa.

Eric Chen - *Daiwa Capital Markets - Analyst*

(spoken in foreign language) Happy New Year. Let me know if I got it wrong. You just mentioned your smartphone high-speed ASP getting higher (inaudible) US dollars. And I believe that's probably because of the (inaudible) smartphone from a single core to dual core to quad core. And my point is, probably we will now have the 16 core. And the 16 core bit probably will be the next launch. I try to say is, we probably will see the, what we really call, the low-end smartphone, the [weight] will really pitch up and then that probably will give you some, the ASP impact. So actually my question is the -- your strategy and that in term of the low-end smartphone IC. Once I look at the China's model IC maker, your market share, probably, that's my understanding, again let me know if I'm wrong, that your market share at a China smartphone IC maker, probably lower than your market share and the global smartphone IC maker. So what is your strategy to deal with the wafer plus competition?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

We intend to be a significant factor in the China market. We intend to be a significant factor in the medium to low-end, middle to low-end kind of smartphones.

Eric Chen - *Daiwa Capital Markets - Analyst*

Okay. Let me say more exactly. The other way you talked about the 28, the HPC, that's mainly for the low-end smartphone IC business. And for the [car], why I choose the 28 HPC, why do I choose the 28 poly style and what kind of advantage are we talking about, and anything in the foundry's technology?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Our 28 HPC is still the high-K metal gate version, so the performance will be much better than 28LP, but yet it is a low cost version. So you can trade off that performance and the die size sometimes. And so you can get your optimum position that depend on your product. From our point of view, and we work with the customer, that we offer this solution for them to meet the challenges of the market of mid, low-end smartphones. These are low-end, so you expect the prices to be low. But then for us, we offer the technology to compensate that.

Eric Chen - *Daiwa Capital Markets - Analyst*

How many percent of performance improvement, how many percent the price is lower than (inaudible)?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

From LP to HPC, I think.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Yeah. From LP to HPC, I'm not going to tell you that how many percentage of the price or something like that. I'll tell you the --

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

You realize it depends on the guy that designs it too. But as far as the intrinsic stuff is concerned [rather].

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

You are mentioning about the performance?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Speed.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Oh the speed. The speed, actually, 28HPC is exactly the same as a 28HPM.

Eric Chen - *Daiwa Capital Markets - Analyst*

So how much percent better?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

30% better. So TSMC's customer can trade off the 30% speed gain, performance and then trade in with the die size, so that you can gain the die size. And you don't -- if you don't enjoy the 30% performance, you can enjoy the die size shrinking. That's the idea.



Eric Chen - *Daiwa Capital Markets - Analyst*

Okay, that's it. I assume that wafer price falling back at 10% higher than Poly-SiON.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

We're not talking about wafer price.

Eric Chen - *Daiwa Capital Markets - Analyst*

Okay, that's it. Thank you.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

We'll tell our customers wafer price. You're not our customer, we're not going to tell you.

Eric Chen - *Daiwa Capital Markets - Analyst*

Thank you. And by the way the same question -- the question for Lora and I remember that Dr. Chang just mentioned all the ASP this year will jump by several points and my question when that will get (multiple speakers)?

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

No, no, no. That's not what I said. I said our branded ASP will rise. It will not jump, it will rise. Our branded ASP will rise by several points.

Eric Chen - *Daiwa Capital Markets - Analyst*

They'll rise also by several points. When that will get the TSMC's revenue growth at 18% year-on-year when (inaudible), correct me if I am wrong. So my point is (inaudible) last year, because one of the main reason because of branded ASP and I believe that branded ASP last year probably ramped by probably 5% more. So are there either (inaudible) or lower, how you are seeing about it this year? And you mentioned a 20-nanometer process in Q4, probably will reach the 10% of the total revenue -- 20, I'm sorry, 20. And you will reach about 10% on the total revenue. In that case can we give the sense (inaudible) that TSMC's branded ASP will rest, like over 5% year-on-year this year?

Lora Ho - *Taiwan Semiconductor Manufacturing Co., Ltd. - SVP & CFO*

Actually, Chairman just gave you the answer. He said the blended ASP with the product mix richer, it will go up several points. So he has already answered your question. So what's your true question?

Eric Chen - *Daiwa Capital Markets - Analyst*

I would like to know, compared to the last year, (multiple speaker) stronger the confidence on the ASP?

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

Well, Eric assume that 2013, our ASP went up by 5%, which we will not comment. And he wants to know whether 2014 we can go up above 5% or below 5%, which we will not comment. Okay. Next question will come from the floor and it will be UBS, Jonah Cheng.

Jonah Cheng - UBS - Analyst

(spoken in foreign language) Just one small question for me. So recently we know the China government, they tried to announce some stimulus for rent to the local semiconductor industry, and we know it is very difficult for them to do the semiconductor foundry, but maybe (inaudible) fabless or semiconductor equipment side, how is TSMC positioned to get this kind of opportunity for business? So that's my question. Thank you.

Morris Chang - Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman

Now we have not considered that. We understand in fact that only Chinese fabless companies will benefit from, not companies located in China, but truly Chinese registered companies can -- only they can benefit from this subsidy, foundry or fabless.

Elizabeth Sun - Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications

I think, Jonah, your question is, can TSMC benefit from the benefit of the Chinese companies?

Morris Chang - Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman

Well, I don't know about that. We do have a lot of business in China from companies, from fabless, Chinese fabless companies. Our business has been rapidly growing. I don't know. I somehow doubt that in giving us their business, they are benefiting from the subsidy. I somehow doubt that, but I don't know for sure.

Mark Liu - Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO

Can I add a point?

Morris Chang - Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman

Yeah.

Mark Liu - Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO

I think we will benefit.

Morris Chang - Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman

Oh, we will?

Mark Liu - Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO

The fabless companies in China are very aggressive approaching leading-edge technologies. To tell you, our 16-FinFET this year, already some of the fabless companies will be using it in tape-outs. So, I think all those fabless companies' subsidy will propel them into the leading-edge technology more.



Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

I don't see how the two are related. The subsidy is not for them to use leading-edge, is it?

Mark Liu - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Because our technology -- leading-edge technology is not yet available in China.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Yes, that I know. So how does that -- how is that related to subsidy again?

Mark Liu - *Taiwan Semiconductor Manufacturing Co., Ltd. - President & Co-CEO*

Their business will be aggressive moving into leading-edge, which will benefit our competitive advantage.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

They will be generally better off after receiving the subsidy, as that allows them to move faster into leading-edge technology. That's the point. That's just like saying that somebody that sells first-class cuisine will be better off if I am making more money. But what happens -- anyway, never mind.

Elizabeth Sun - *Taiwan Semiconductor Manufacturing Co., Ltd. - Director, Corporate Communications*

All right. Well, I think -- yes, I think with these strong prospects in China, we will be very happy to end our quarterly conference call here. And before we conclude the conference, please be advised that the replay of the conference will be accessible within three hours from now. Transcript will become available in 24 hours from now. And thank you for joining us today. We hope you will join us again next quarter. Goodbye and have a good day.

Morris Chang - *Taiwan Semiconductor Manufacturing Co., Ltd. - Chairman*

Thank you very much. Good meeting, yeah.

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