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OVERVIEW:

TSMC announced 2Q11 revenue of TWD427b and 4Q11 revenue of TWD104.7b. 4Q11 EPS came in at TWD1.22, bringing 2011 EPS to TWD5.18.



CORPORATE PARTICIPANTS

Elizabeth Sun *TSMC - Head, IR*

Morris Chang *TSMC - Chairman and CEO*

Lora Ho *TSMC - SVP and CFO*

C. C. Wei *TSMC - SVP, Business Development*

CONFERENCE CALL PARTICIPANTS

Dan Heyler *Bank of America Merrill Lynch - Analyst*

Mahesh Sanganeria *RBC Capital Markets - Analyst*

Mehdi Hosseini *Susquehanna Financial Group - Analyst*

Szeho Ng *BNP Paribas - Analyst*

Michael Chou *Deutsche Bank - Analyst*

Steven Pelayo *HSBC - Analyst*

Brett Simpson *Arete Research - Analyst*

PRESENTATION

Operator

Ladies and gentlemen, thank you for standing by and welcome to TSMC's 4Q '11 results webcast conference call. This conference call is being webcast live via the TSMC website at www.tsmc.com and only in audio mode. Your dial-in lines are also in listen-only mode. I would now like to turn the conference over to Dr. Elizabeth Sun, TSMC's Head of Investor Relations. Thank you, please go ahead Dr. Sun.

Elizabeth Sun - TSMC - Head, IR

Thank you. Good morning and good evening, everyone. Welcome to TSMC's fourth-quarter 2011 conference call. Joining us on the call are Dr. Morris Chang, our Chairman and Chief Executive Officer and Miss. Lora Ho, our Senior Vice President and Chief Financial Officer and Dr. C. C. Wei, TSMC's Senior Vice President of Business Development.

The format for today's conference call will be as follows. First, Lora will summarize our operations in the fourth quarter and give you our guidance for the next quarter. Afterwards, TSMC's Chairman, Dr. Chang, will provide his general remarks on the business outlook and a couple of key questions -- key messages. Then we will open the floor to questions. 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 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 15, 2011, 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 - SVP and CFO

Thanks, Elizabeth. Good morning and good evening to everyone. Welcome to our 2011 fourth-quarter earnings conference call. Before I start I want to send my best wishes for Year of the Dragon, as it is only a few days before the Chinese Lunar New Year.

During today's call I will start with the financial highlights from the fourth quarter, followed by a recap of 2011. Then we will move on to the outlook for the first-quarter 2012. All dollars' figure are in NT dollars, unless otherwise stated.

Our fourth-quarter revenue decreased 1.7% sequentially to TWD104.7b. In US dollar terms the revenue decreased 5.4% compared with the third quarter. Our Wafer shipment decreased 8% to 2.9m 8-inch equivalent Wafers in this quarter, since customers' inventory adjustment continued to affect TSMC's Wafer demand.

By applications, computer-, consumer- and industrial-related revenue were more affected, and decreased by 13%, 10% and 14% respectively. [Our area] communication increased by 6%, thanks to the demand for smartphones. Overall, communication accounted for 53% of our total Wafer sales in this quarter, while computer, consumer and industrial accounted for 20%, 9% and 18% of our Wafer sales respectively.

By technology, contribution from 28-nanometer process technology already represented 2% of the total Wafer sales. We believe 28-nanometer contribution will be more than 10% in the second half of 2012, also for the whole year. 40-nanometer contribution remained at 27% in the fourth quarter, while 65 nanometer increased [three] percentage points to 30% of total Wafer sales. Combined contribution from 65 nanometer and below represented 59% of total Wafer sales in this quarter, which is five percentage points higher than the previous quarter.

Gross margin was 44.7%, up 2.7 percentage points from third quarter, mainly attributed to a favorable exchange rate and a higher utilization rate. Operating margin was 31.4%, up 1.7 percentage points. Operating expenses increased 5% from the previous quarter, mainly due to higher opening expense for Fab-15 in Taichung.

Overall our fourth-quarter net margin arrived at 30.2%, EPS was TWD1.22. During this quarter we further reduced our inventory level by two days, to 43 days, and we believe this inventory level is healthy. Cash flow from operations totaled TWD73b, up TWD18b from third quarter, primarily due to higher other operating sources. Also, our capital expenditure decreased by TWD8b in the quarter.

These two factors helped us -- helped our free cash flow increase from TWD17b to TWD43b during the fourth quarter. Overall, our cash and short-term investments increased TWD30b to TWD151b. Our capital expenditure was \$1b in the fourth quarter. Total capital expenditure for the whole year was \$7.3b.

Our total capacity slightly declined in the fourth quarter as a result of capacity conversion in 12-inch Fabs and annual maintenance in certain 8-inch Fabs. Full-year total capacity increased by 17% year over year, to 13.2m 8-inch equivalent Wafers, while 12-inch Wafer capacity increased by 29%. We expect our total capacity to increase by 5% sequentially, to 3.6m 8-inch equivalent Wafers in first-quarter '0 -- 2012, mainly due to an increase in 28-nanometer capacity.

Next, let me give you a recap of our performance in 2011. 2011 revenue was TWD427b. Gross margin was 45.4%, operating margin 33.1% and the EPS was TWD5.18. 2011 was a challenging year for the Semiconductor industry. Despite a difficult macro environment TSMC still achieved top-line growth. In US dollar terms our revenue increased 9% year over year, to \$14.5b in 2011.

Continually outperforming the Foundry industry regarding profitability despite rising depreciation, R&D expense and unfavorable exchange rate, we still maintained gross margin at above 45% and achieved our long-term financial target of an above-20% ROE. Supported by solid financial performance we are committed to invest in R&D for future growth and strive for long-term shareholder value.

Now let's turn to the outlook for the first-quarter 2012. Based on the current business expectation and a forecast exchange rate of TWD30.25, we expect our consolidated revenue in the first quarter to come in between TWD103b and TWD105b. In terms of margin we expect our first-quarter gross margin to be between 42.5% and 44.5%, operating margin to be between 28.5% and 30.5%.



Our first-quarter revenue outlook is similar to revenue in the previous quarter, but the profit margin is slightly lower. The main reason is that our 28-nanometer Wafer sales contribution will increase rapidly to around 5% in the first quarter, from 2% in fourth-quarter 2011. As margins of any process technology are typically lower than corporate average at the initial stage of volume production, this increase in 28-nanometer contribution will have some temporary negative impact on our margin.

This concludes my remarks today. Now I would like to turn the call to -- over to Dr. Morris Chang, our Chairman and CEO, for his remarks.

Morris Chang - TSMC - Chairman and CEO

Hi, everyone. First, I'd like to look at 2011 in retrospect. In 2011 the world's Semiconductor growth was close to zero. The world's Foundry industry growth was 4%. TSMC growth was 9%. All these figures were in US dollars. The TSMC growth was mainly driven by the strength of 40- and 45-nanometer node and the emergence of the 28-nanometer node. The revenues from our advanced technology, that is, 65 nanometer and below, grew from 46% of total Wafer revenue in 2010 to 55% in 2011.

Now a few words on supply chain inventory. The supply chain inventory has been working down throughout the second half of 2011. We expect that the supply chain's DOI in aggregate is about seven days below seasonal at the end of 4Q '11 and will continue to be below seasonal throughout 1Q '12.

Next, I'd like to say a few words about this year, 2012's, Semiconductor and Foundry outlook. The outlook for 2012's economic condition is for world GDP to grow at 2.4%; that's our estimate. It's higher than some and lower than others. We expect the world's Semiconductor market to grow at about 2%. In the Semiconductor market, mobile products will enjoy particularly strong growth.

TSMC is well positioned in the mobile product market with the right technology and we have the manufacturing capacity. We should perform better than the overall Semiconductor and Foundry industry this year. I have asked C. C. Wei, Senior VP of Business Development, to give a special presentation on TSMC's positioning in the mobile products today. He will speak after me.

TSMC's Q1 revenue is about flat from last year's Q4, but stronger than seasonal. According to our current booking forecast our second-quarter revenue will be stronger than first quarter.

On our capital expenditures, in order to leverage our leadership position in 28 nanometer and to expand our development work in 20 nanometer and beyond, we expect to spend about \$6b in capital expenditure. About 80% of the spending is for tools, buildings and facilities for 28-nanometer and 20-nanometer nodes and 12% of the total spending is for R&D.

I will say a few words on the status of our 28-nanometer ramp. Our 28 nanometer entered volume production last year and contributed at 2% of 4Q '11's Wafer revenues. Defect density and new progress is ahead of schedule and is better than 40 nanometer, 45 nanometer at the corresponding stage of the ramp up. We expect 28-nanometer ramp this year to be fast and we expect 28 nanometer will contribute more than 10% of total Wafer revenue this year.

Our tape-outs on the 28 nanometer; we have so far completed 36 individual tape-outs and have scheduled another 132 individual product tape-outs in 2012. While the three versions of the 28-nanometer technology, the LP, the HP and the HPL, have entered volume production, the fourth version, the HPM, has entered risk production this quarter and is expected to begin volume production in the second half of this year.

Now I will give you a report on some technology development, first, on 20 nanometers and beyond. Our 20-nanometer development is on track to start risk production at the end of this year. We combine our high-performance planar transistors with system integration, such as CoWoS and our ecosystems partners.

We think that with the combination of those three, the high-performance planar transistor, the high-density system integration, such as CoWoS -- that stands for Chip on Wafer on Substrates, by the way -- and our ecosystems partners, such as ARM and other EVAs, TSMC's 20-nanometer

technology will be most competitive in the marketplace. For FinFET, TSMC will offer second-generation FinFET transistors at 14-nanometer node with risk productions in 2014. The feasibility has been proven. We are in the process of integrating it into the technology platform.

To solidify and enhance our R&D efforts we have invested a few hundred million dollars of additional equipment and put in hundreds of engineers to start up an R&D process center in order to deliver the 20-nanometer and 40-nanometer prototypes with a quick cycle time.

I want to say a few words on high voltage. The fast growth of mobile computing devices has fueled a growth of demand for high-voltage HV technology. The HV technology is needed for power management IC and for display drivers. The mobile computing devices require a smaller footprint, higher efficiency, with predictable yield and large capacity to support. TSMC's strength of integrating logic and HV fits well in this trend. For power management IC, TSMC's 0.25-micron BCD is in volume production and customers are designing into our 0.18-micron BCD while 0.13-micron BCD is under development.

For display driver the requirements include high resolution, thinner frame to narrow the edge and faster data rate to refresh the screen. TSMC's 110-nanometer HV and 80-nanometer HV fit well in this trend with the smallest design [rules] and the largest capacity for the market. We plan to offer 55-nanometer HV next year to further extend our leadership.

Next, Chip and Wafer on Substrates, CoWoS. TSMC offers a robust CoWoS solution to enable future advanced products featuring lower power and consumption. The solution integrates advanced silicon technology and interposer technology. We expect CoWoS to start at 28 nanometer and become significant at 20 nanometer and below.

We've been collaborating with customers to develop CoWoS products for qualification in 2012 and initial production in 2013. That would be the 28-nanometer version. The CoWoS ecosystem includes memory manufacturers and [OSET] partners. Initial applications will be in the areas of high-end GPU, FPGA and networking.

And now a few words on the status of our Solar and Solid-State Lighting systems. This year we have seen very quick price drops in both Solar and Solid-State Lighting. In this environment we are proceeding cautiously and, hopefully, prudently. We are spending a somewhat longer time in getting the technology to an even higher performance than we originally planned before we switch to production. We are still focusing most of our efforts on development and that will last well into 2012 -- our development will last well into 2012, although we do expect modest revenue in 2012 for both Solar and Solid-State Lighting.

Our goal in Solar is to produce high-quality Solar Modules at competitive cost and we have started to move in tools into our new Solar Fab in Taichung. And recently we are able to demonstrate a circuit efficiency of 17.12% on a 30-by-30 centimeter cell. To the best of our knowledge the highest efficiency that has been achieved anywhere is 17.2% for a cell of a similar size. And, as I said, we achieved 17.12%, very close to the highest efficiency that has been achieved anywhere.

And in Solid-State Lighting our goal is to produce emittance at a stable, high-quality level. We are making good progress in developing our technology and converting it from R&D to pilot production. We are now approaching the 120-lumens per-watt level, also bringing this new activity in the top bracket of technical performance.

Now I would like to turn the talk over to C. C. Wei -- Dr. C. C. Wei, TSMC's Senior VP for Business Development and he will talk about mobile computer products. C. C.?

C. C. Wei - TSMC - SVP, Business Development

Thank you, sir. Good day, everybody. Let me start with the two most important products in the mobile computing business, that is, the smartphone and tablet. In year 2003 to year 2011 smartphones grow from 10m units to 456m units. Year 2011 is also the first year that smartphone outnumbers PCs. Looking forward for the next five years the growth will likely continue with 21% CAGR and reaches about 1b units probably in the year 2015, but no later than 2016.

In addition to smartphone, the tablets grew from 18m units in year 2010 to 50m units in last year. We also expect that a greater-than 30% CAGR for the next five years for tablets. So both smartphone and tablets are expected to have very strong growth in the future.

Equally important is the mobile data traffic. According to Cisco's estimate the number of mobile data traffic by smartphones and tablets almost double every year, from about 91 terabyte per month in year 2009 to 546 terabyte per month last year, and will increase to more than 1,163 terabyte per month this year and more than 2,000 terabytes per month next year.

The dramatic increase of data traffic almost assure two things. First, the number of smartphones and tablets will have a very strong growth in the future. And, second, high transmission speed and larger bandwidths will become necessary, so, as a result, better Semiconductor technology is required. And that one leads to my next topic; why TSMC has very strong positioning in the mobile computing market.

As I mentioned, in the mobile computing world device feed is very important, but there is another factor to be considered. That is the power consumption. Low power is essential, because you are determining the smartphone and tablet use time. So, in summary, all in all the speed, the lower power that turns out to be the technology -- Semiconductor technology is very, very important.

In the last three years we have increasingly invest on R&D to enhance our progress in the technology. And through working with our customer TSMC can provide to our customer the leading-edge technology optimized for speed and low power consumption.

In addition to processing technology we are also benefit from the ARM architecture, which is famous for the low-power operation and have been used by almost all TSMC customers in their product. And, in fact, it is no surprise that TSMC customers are gaining their market share in the mobile computing and we are growing with them. Further, needless to say that TSMC and ARM are both -- are cooperating together to catch the great opportunity in this mobile computing era.

Next, I want to talk about why TSMC good positioning and win the [Foundry] market segment share. We have seen a faster technology migration in the past two years. For example, at 65-nanometer node we saw about 35 products at the initial volume ramp and the number growing to 43 product at 40-, 45-nanometer node and about 80 product at 28-nanometer node. Not only the number of products increased. We also saw the same trend in the volume ramp compared with the same period of time.

And the faster technology migration, actually, is mainly driven by the performance needed in these three years; higher speeds; lower power; everything. In order to keep up this faster technology migration, that is, shorten the time to the market, TSMC customers has found it is beneficial to have earlier and deeper cooperation in technology definition. As a result, we believe this faster technology migration will help TSMC to gain Foundry market segment share. And, indeed, we have observed Foundry market shares gained about two points from year 2008 to 2011, in spite of new entrants in the same period of time. And thank you that.

Elizabeth Sun - TSMC - Head, IR

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

QUESTIONS AND ANSWERS

Operator

Thank you. At this time we will open the floor for questions. (Operator Instructions). Your first question comes from the line of Dan Heyler from Bank of America Merrill Lynch. Please ask your question.



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

Good morning and thanks for the -- thanks for taking my call. I wanted to ask you about the 20-nanometer ramp, which appears to be probably ahead of your previous comment that it would be above 10% in the second half of this year. You're now indicating 10% -- higher than 10% for the full year. What's the status of the High-K Metal Gate portion of that? Will that start to kick in soon, or would you expect that to be more meaningful in the second half of the year?

Morris Chang - *TSMC - Chairman and CEO*

It's going to be more than 10% for the year, Dan. The revenue contribution of the 28 nanometer is going to be more than 10% for the whole year this year. And roughly in the first quarter it will be 4% or 5% -- 5%. As you know, in -- we said that in the fourth quarter it was 2%. This quarter it will be 5% and then it will gradually build up so that the whole year it will be 10%, or a little more than 10%.

And High-K Metal Gate, when does it kick in, it has already started to kick in, but it's a little bit -- it's a little behind the oxy-nitride. But it will build up quite fast. So at the end of the year we expect about half oxy-nitride and half High-K Metal Gate.

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

Okay, great. Yes, I was just trying to get a sense of the dynamics there because how important that High-K Metal Gate is to achieve a high second-half growth. Is that -- are you assuming that that will occur and that that's one of the major drivers to the second-half portion of 28, if my thinking is correct there?

Morris Chang - *TSMC - Chairman and CEO*

Yes, that's right, but we don't really have any doubts that High-K Metal Gate is going to work. In fact, it's already started.

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

Okay, great. Okay, thank you. And then on the second question, maybe for C. C. and for Dr. Chang, the collaboration with ARM and TSMC is well known and it's been going on for some time. I wanted to get a sense of your thought process in this ecosystem moving into the PC space. Is that something that we would -- that ecosystem would be positioned to in the 20-nanometer node, with your three initiatives taking place, would combine that? Does that position --?

Morris Chang - *TSMC - Chairman and CEO*

The collaboration with ARM, will it continue to the [0.21] nanometers and beyond in the PC space also? Yes, I very much expect that.

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

I'm just wondering whether you think the performance level would position TSMC and ARM for a PC presence at the 20-nanometer node, or could it come earlier, say, in the 28-nanometer node?

Morris Chang - *TSMC - Chairman and CEO*

C. C., do you want to answer that?

C. C. Wei - TSMC - SVP, Business Development

Okay, Dan, I cannot say that the high-speed CPU will enter in that area, but you know there is some CPU combined with the graphic and we are gaining market share from there.

Morris Chang - TSMC - Chairman and CEO

In other words, the --

Dan Heyler - Bank of America Merrill Lynch - Analyst

In the low-end market, is it?

Morris Chang - TSMC - Chairman and CEO

Combined CPU and graphics, you understand.

C. C. Wei - TSMC - SVP, Business Development

Yes. Actually, I would not say in the low end, but let's say that in the mobile product.

Dan Heyler - Bank of America Merrill Lynch - Analyst

Okay, thank you. Looking to share more color on that going forward. That sounds like an interesting initiative.

And the final, very quick question for Lora. If I could get some color on the different Fab capacity movements in the first quarter. I don't know if you can pull up that slide. It seems as though some of the 8-inch Fab capacity -- you've got some Fabs declining, Fab-2 and Fab-3 declining, Fabs-5 and Fab-6 are actually increasing. The only reason why I'm bringing it up is they've been pretty stable over the last couple of quarters and the first quarter seems to have some capacity movements on the 8-inch.

And then, as you look on the 12-inch front, the two big increases that you've already talked about on the first quarter at Fab-12 and Fab-14, I presume, are 20 nanometer.

And, finally, the third part of the question is how much growth this year will you have in 40 nanometer, because I do understand that you're upgrading some of your Xx65 nanometer to 40 nanometer. So how much growth in 40 will there be as a result of those upgrades? Thank you.

Lora Ho - TSMC - SVP and CFO

Okay, Dan, you were asking about the Fab capacity increase in the first quarter. You just mentioned there are some changes in 8-inch. As I mentioned in my earlier remarks, there were some 8-inch coming down for the annual maintenance. So the capacity for those Fabs will be slightly smaller than the fourth quarter.

The two big 12-inch Fabs, just 14 and 12, they are all undertaking the expansion for 28 nanometer, the majority, and Fab-14 has some small increase on 40 nanometer, so that's the increased part.

What's your second part of the question?



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

Will 65-nanometer capacity decline this year and how much will 40 increase?

Lora Ho - *TSMC - SVP and CFO*

I see. 40 nanometer will increase slightly. Well, if you talk about year over year, 40 nanometer increase about 20%. 65 will -- we were migrating 65 to 28, so, overall, 65-nanometer capacity will go down.

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

Excellent, thank you.

Operator

Thank you for your question. The next question comes from the line of Mahesh Sanganeria from RBC Capital Markets. Please ask your question.

Mahesh Sanganeria - *RBC Capital Markets - Analyst*

Thank you. Thank you very much. If I can just follow up on the previous question. Did you say that you're migrating 65 into 28 nanometer, or 65 into 40 nanometer?

Lora Ho - *TSMC - SVP and CFO*

65 into 28 nanometer.

Mahesh Sanganeria - *RBC Capital Markets - Analyst*

Okay, and another question on 20 nanometer. You said you would start risk production by end of this year. When do you expect the Wafer shipment for revenues?

Morris Chang - *TSMC - Chairman and CEO*

Now, the 20 nanometer we will start --

Lora Ho - *TSMC - SVP and CFO*

2014.

Morris Chang - *TSMC - Chairman and CEO*

Two thousand -- no.



C. C. Wei - TSMC - SVP, Business Development

Second half.

Morris Chang - TSMC - Chairman and CEO

Second half of 2013, yes. Not this year. 2013 second half.

Mahesh Sanganeria - RBC Capital Markets - Analyst

Okay.

Morris Chang - TSMC - Chairman and CEO

And what was the --

Mahesh Sanganeria - RBC Capital Markets - Analyst

So, one last question.

Morris Chang - TSMC - Chairman and CEO

Yes?

Mahesh Sanganeria - RBC Capital Markets - Analyst

One last question. How much capital are you allocating for 20 nanometer this year?

Morris Chang - TSMC - Chairman and CEO

20 nanometer, we are not spending very much tools money -- very much equipment money -- capital equipment money. However, we are building facilities, building plants in -- well, in both Taichung and in Hsinchu. So we're not very -- we're not spending very much equipment money -- production equipment money. We are spending some R&D equipment money on the 20 nanometer.

Mahesh Sanganeria - RBC Capital Markets - Analyst

Can you give us an initial estimate if you have in terms of how much the cost will increase for 20-nanometer from 28-nanometer equipment cost?

Morris Chang - TSMC - Chairman and CEO

It's about a ratio of 1.45, I think, yes. 1.45 per thousand Wafers per-month capacity. If it costs \$1 capital in -- on the 28 it will another 45 on 20. Have I explained myself?



Mahesh Sanganeria - RBC Capital Markets - Analyst

Okay. Thank you very much. Yes, thank you. Thank you.

Operator

Thank you for your question. Your next question comes from the line of Mehdi Hosseini from Susquehanna. Please ask your question.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Yes, thanks for taking my question. Going back to the margin commentary on 28 nanometer, when, this year, would you expect the 28-nanometer gross margin to come up in line with the corporate average? And would there be -- and, beyond that, would margin actually for 20 nanometer increase above corporate average? And I have a follow up.

Morris Chang - TSMC - Chairman and CEO

Yes. It will come very close to corporate average in the fourth quarter this year. And I really hope and expect that it will be above corporate average next year.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Okay. And then, regarding the CapEx, it is my understanding based on what I am noticing at equipment vendors that maybe the majority of the CapEx has already been communicated, POs placed. So would I be fair to say that the CapEx in 2012 is going to be front-loaded spending in the first half much higher than the second half?

Morris Chang - TSMC - Chairman and CEO

No, no. Lora, you want to answer that question?

Lora Ho - TSMC - SVP and CFO

Yes. It's only slightly more than 50% first half, not too much.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

I'm sorry, more than 60%?

Morris Chang - TSMC - Chairman and CEO

More -- a little more than 50%. The number I remember is 52% or 53% in the first half and --

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Okay.



Morris Chang - TSMC - Chairman and CEO

-- and 47% to 48% in the second half.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Okay. And then, if the overall macro picture were to improve, would -- what are the prospects or the probability of increasing CapEx, let's say, by summertime? Is that event under consideration?

Morris Chang - TSMC - Chairman and CEO

Yes, there is some possibility. And the -- if you recall, well, last year in the -- in January, a year ago, we guided our corporate spending -- I'm sorry, capital spending last year at TWD7.8b. It ended up TWD7.3b. And the year before, that's two years ago January, we guided our capital spending in 2010 at --

Lora Ho - TSMC - SVP and CFO

TWD4.8b.

Morris Chang - TSMC - Chairman and CEO

TWD4.8b. It ended up --

Lora Ho - TSMC - SVP and CFO

TWD5.9b.

Morris Chang - TSMC - Chairman and CEO

-- TWD5.9b. So 2010 our capital expenditure exceeded our guidance early in the year and 2011 our capital -- our actual capital expenditure was less than what we guided. So, yes -- and both years -- you know what happened in both years. In 2010 the climate was better than we expected and then in 2011 it was worse than we expected. So this year, depending on the macro situation, yes, it could be up or down. Yes, that's right.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Got it, thank you.

Operator

Thank you for your question. Your next question comes from the line of Szeho Ng from BNP. Please ask your question.

Szeho Ng - BNP Paribas - Analyst

Hi, good evening. Just out of curiosity, with regard to your R&D budget this year, what percentage will be allocated for [advanced] R&D?



Morris Chang - TSMC - Chairman and CEO

What's that, sorry?

Lora Ho - TSMC - SVP and CFO

Percentage of R&D? You mean CapEx?

Szeho Ng - BNP Paribas - Analyst

[That's it], yes, for this year.

Unidentified Company Representative

R&D expense.

Morris Chang - TSMC - Chairman and CEO

R&D operating expense, or R&D capital expense?

Szeho Ng - BNP Paribas - Analyst

Operating expense.

Morris Chang - TSMC - Chairman and CEO

As a percent of what?

Szeho Ng - BNP Paribas - Analyst

The R&D expense allocated for back end.

Elizabeth Sun - TSMC - Head, IR

Back end?

Lora Ho - TSMC - SVP and CFO

Back-end R&D.

Morris Chang - TSMC - Chairman and CEO

Back-end R&D. Well, I will -- I don't have that number at hand. It's not a major part of our total R&D.



Szeho Ng - *BNP Paribas - Analyst*

Okay, all right. And then the other question I have is on the tax-band rate for modeling purpose, because the last couple of years the percentage was pretty low. So I just want to know a number you have for modeling purpose.

Lora Ho - *TSMC - SVP and CFO*

You're asking about tax rate?

Elizabeth Sun - *TSMC - Head, IR*

Yes.

Szeho Ng - *BNP Paribas - Analyst*

Yes.

Lora Ho - *TSMC - SVP and CFO*

Last year we were close to 7%. This year will be 8%.

Szeho Ng - *BNP Paribas - Analyst*

You mean for this year?

Lora Ho - *TSMC - SVP and CFO*

This year will be around 8%, including --

Szeho Ng - *BNP Paribas - Analyst*

Okay, all right.

Lora Ho - *TSMC - SVP and CFO*

-- the tax -- (inaudible) for the tax credits.

Szeho Ng - *BNP Paribas - Analyst*

Okay, all right, got you. Okay, thank you very much.

Operator

Thank you for your question. The next question comes from the line of Michael Chou from Deutsche Bank. Please ask your question.



Michael Chou - *Deutsche Bank - Analyst*

Good evening, just a follow-up question for 20-nanometer High-K Metal Gate. Chairman, do you expect an accelerated adoption of 20-nanometer High-K Metal Gate in mobile devices in 2013, or second half this year, given that it seems that there's a limited adoption?

Morris Chang - *TSMC - Chairman and CEO*

(Multiple speakers).

Lora Ho - *TSMC - SVP and CFO*

Michael, Michael, could you please repeat? Do we expect accelerated what? Adoption of --

Michael Chou - *Deutsche Bank - Analyst*

Accelerated adoption of 20-nanometer High-K Metal Gate in mobile devices in 2013, given there seems a limited adoption in 2012.

Morris Chang - *TSMC - Chairman and CEO*

Well, actually, I don't think the adoption in 2012 is limited. It is -- frankly, it is limited by our capacity and -- it's limited by our capacity and our ability to ramp up the production. So to answer your question, yes, I do expect it will accelerate in 2013, but it will accelerate in 2012 also.

Michael Chou - *Deutsche Bank - Analyst*

Thank you, I have no further question.

Operator

Thank you for your question. Next, we have a follow-up question from the line of Dan Heyler from Bank of America Merrill Lynch. Please ask your question.

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

Thanks for the follow up. Dr. Chang, today you had commented on the Solar portion of your business perhaps contributing somewhat to revenue towards the latter part of the year. I was looking through my notes to see if there are any comments on the LED bit. Do you anticipate some contribution to revenue this year as well as the Solar, or is that something (multiple speakers)?

Morris Chang - *TSMC - Chairman and CEO*

Yes, I said both, but it will be very modest. But it's not nothing. It's -- but it's modest.

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

Okay, excellent. And then another follow up was in relation to the back-end strategy. I know that there's been -- it's still work in progress and you're consulting with your partners and customers on this. So I wanted just to clarify the eco-system itself you're working on, the CoWoS, with your

partners and the Substrate attachment part would still be done by your back-end partners? Is that -- are you 100% sure of that? That's the strategy now, that the back-end partners, the [OSET], the ASTs and the [Silver] of the world will still be doing the Substrate attachment? And I presume, then, also the encapsulation and the packaging and tests as well, which is (multiple speakers)

Morris Chang - TSMC - Chairman and CEO

I will let Dr. Wei -- C. C. Wei answer that one.

C. C. Wei - TSMC - SVP, Business Development

Okay, Dan, the Substrate was cooperated with our OCS partners. And whether we put the [dye and] Substrate will put by [OCR] or put by the partners, that -- at the beginning it was be done by TSMC and, finally, I think that we will cooperate each other.

Morris Chang - TSMC - Chairman and CEO

Did you get that? He said that already --

Dan Heyler - Bank of America Merrill Lynch - Analyst

Yes, I did.

Morris Chang - TSMC - Chairman and CEO

-- initially we'll probably do it ourselves, putting the --

C. C. Wei - TSMC - SVP, Business Development

The chip.

Morris Chang - TSMC - Chairman and CEO

Well, the chip on the sub.

C. C. Wei - TSMC - SVP, Business Development

On the interposer and then on the Substrate.

Morris Chang - TSMC - Chairman and CEO

Putting -- well, we will always put the chip on the interposer ourselves.

C. C. Wei - TSMC - SVP, Business Development

That's right, yes.



Morris Chang - TSMC - Chairman and CEO

That's our business model of CoWoS. We will not use an OSET to put a chip on the interposer. But as far as putting the interposer on the Substrate is concerned, then, initially we plan to do that too, but eventually I think that's what C. C. said. It would be done by OSET. Is that right?

C. C. Wei - TSMC - SVP, Business Development

Yes.

Dan Heyler - Bank of America Merrill Lynch - Analyst

Next, on why the -- why the change? Why would you do it first and then move it to (multiple speakers?)

Morris Chang - TSMC - Chairman and CEO

The Wafer on Substrate? Why do we do that first?

Dan Heyler - Bank of America Merrill Lynch - Analyst

Yes, why?

Morris Chang - TSMC - Chairman and CEO

You're talking about the Wafer on Substrate now, right? As far as --

Dan Heyler - Bank of America Merrill Lynch - Analyst

Correct, yes, and then moving that to OSET.

C. C. Wei - TSMC - SVP, Business Development

Okay, let me answer the question, Dan. At the beginning we want to do it by ourselves because we have a concern about this trace, about the device matching and all kinds of things together. And once we are very competent at doing that -- because we have to buy the Strate -- Substrate, I'm sorry. We have to buy the Substrate for the OSET people. And then we want to do it by ourselves at the beginning due to the concern of mechanical Strates, (inaudible) and everything which are (inaudible) related. Once we are very familiar and we have a competence then we will work the OCR transposer technology, will co-operate with them, so that in the mass production that they can also handle it.

Dan Heyler - Bank of America Merrill Lynch - Analyst

That's great. I'm trying to conceptualize this technology as how we should think about it. Is this something that we should think about as keeping more [law] going in another way, given that a lot of chips are increasing their memory size, many SoCs, the memory bit is getting larger and die sizes are getting quite large?

So is -- perhaps the longer-term outcome is that moving the memory off chip on an interposer, that this is a meaningful cost reduction for your customers and, therefore, we're creating more value. Because I think some investors are confused whether this is you moving to the back end and

taking away the business that -- from a back-end process. Or is this really essentially a front-end, value-creation exercise? If you could just conceptualize this for the investors that would be great, thanks.

C. C. Wei - TSMC - SVP, Business Development

Do I have to answer?

Morris Chang - TSMC - Chairman and CEO

Yes, please.

C. C. Wei - TSMC - SVP, Business Development

Okay, Dan. Actually, we put -- you're talking about quite a long sentence, but let me answer in a very short one. We put the chip in, put the memory interposer that we can -- first, we can move the -- more slow ahead. Secondly, actually, it's for the performance, because you put two together, you can save the power consumption. You eliminate a lot of IOs, all right? And so the speed also been cut -- been reserved and you -- because in omitting the IOs so that you save a lot of power consumption. That's the idea. So the cost is lower.

Dan Heyler - Bank of America Merrill Lynch - Analyst

So this is a way for chip companies to effectively lower their die size but maintain the same performance level. Is that right?

C. C. Wei - TSMC - SVP, Business Development

Yes.

Dan Heyler - Bank of America Merrill Lynch - Analyst

Okay, thank you. And is it important for you to have a memory partner here? There's been also some arguments that those that have vertical integration and have the memory technology -- is that a differentiator for some that knows memory, or is that not the case?

C. C. Wei - TSMC - SVP, Business Development

Yes, we have our partners in the memory field.

Morris Chang - TSMC - Chairman and CEO

Is it important for us? I think so, yes. This is Morris, Dan. Your question, is it important for us to have a memory partner, yes, I think so, because we need to put memories on the interposer also.

Dan Heyler - Bank of America Merrill Lynch - Analyst

Does your competitor have an advantage for -- i.e. Samsung with some of their memory?

Morris Chang - TSMC - Chairman and CEO

I don't know. I don't know about that, because we're working with almost every memory manufacturer, except what you call our competitors.

Dan Heyler - Bank of America Merrill Lynch - Analyst

Okay.

Morris Chang - TSMC - Chairman and CEO

And so they are -- every one of them is quite eager to work with us, because they know that we are actually their defense against their competitor too.

Dan Heyler - Bank of America Merrill Lynch - Analyst

Well put, thank you.

Operator

Thank you for the question. The next question comes from the line of Mehdi Hosseini from Susquehanna. Please ask your question.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Yes, two follow-up questions, first, on the depreciation. Can you remind me, please, the year-over-year growth from '11 into '12?

Lora Ho - TSMC - SVP and CFO

Okay, Mehdi. TWD6b CapEx will increase our depreciation, with our current estimation, about 20% year over year.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

20%, okay. And then one other thing I notice, the mix of your revenue by Fabless versus IDMs. Back in 2007 IDM accounted for a third of your revenue. Now it has gone down to about 15%, 16%. Is that a reflection of the secular change, more of an ARM ecosystem, or does that mean that when IDMs see full utilization rate they're going to come back to you and it would have additional revenue opportunity for you?

Morris Chang - TSMC - Chairman and CEO

Well, let me try this answer. This is Morris. The line between IDM and Fabless is a very, very much blurred one now. This has happened just in the last four, five years and at leading-edge technology. In fact, it started with 40 nanometer. They will only -- there are only, I would say, two IDMs. And that's true at 28 nanometer also. So all the rest at 28 -- yes, 28 and 40. Everyone except those two is a Fabless.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Okay.



Morris Chang - TSMC - Chairman and CEO

Yes.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Now, just as a follow up, when we compare the 28-nanometer transition to prior transitions, let's say, 65 to 40, and with IDMs not having any 28-nanometer capacity, does that mean that the pricing power for TSM is better compared to the previous time? It is -- 28 is more capital intensive; that's why your margins are below corporate. But once you get a scale does that change your pricing power compared to previous transitions?

Morris Chang - TSMC - Chairman and CEO

The fact that the 28 margin right now is below corporate average is a very natural one, I think. It happened every generation and I expect that it will happen in the future, in future generations, 20 nanometer and 40 nanometer and so on, because this is the well-known learning curve effect. And when you start making something in production it always a pretty high cost. The scale is low and the yield is generally still on the very sharp upslope.

And so -- and you can possibly -- if you try to charge a price that compensates you for the very inefficient manufacturing at the early stage of a technology, then you find that nobody's willing to pay it.

So the fact that the margin's low this year, to us, it's something that we accept in every new generation. And, as I said earlier, I expect the margin will close -- will become very close to the corporate average by the fourth quarter of this year. And I expect it will actually surpass the corporate average next year.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Sure --

Morris Chang - TSMC - Chairman and CEO

As far as --

Mehdi Hosseini - Susquehanna Financial Group - Analyst

-- got it. Thank you.

Morris Chang - TSMC - Chairman and CEO

You also asked the question -- you also asked a question about pricing power.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Pricing power.



Morris Chang - TSMC - Chairman and CEO

Yes. Well, I don't like to use that term, because it's -- I don't like it. All I would say is that we try to make the price -- yes.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Let me simplify it for you. Your only other competitor this year is still on a gate-first technology. And then, even beyond this year --

Morris Chang - TSMC - Chairman and CEO

They are not --

Mehdi Hosseini - Susquehanna Financial Group - Analyst

-- let's say at 20 --

Morris Chang - TSMC - Chairman and CEO

They're only -- are they our only competitor? I guess so, yes. Yes, I'm sorry. Yes, yes. Okay, yes, yes. Yes.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Right. Well, the one or two competitors are still at a gate-first technology and as you migrate to 20 nanometer they still have some catching up to do. So -- I'm -- and I'm just trying to state a rationale. You still are the only viable Foundry solution, but also you have to be mindful of your customers' own pricing power. So I'm just trying to reconcile if you would use your competitive advantage to ask for higher prices, or overall margins are going to remain close to what we have seen in the prior cycles.

Morris Chang - TSMC - Chairman and CEO

Our customers are our partners and we're going to -- we're not going to do anything that would destroy that.

Mehdi Hosseini - Susquehanna Financial Group - Analyst

Okay, got it.

Lora Ho - TSMC - SVP and CFO

Sorry, Operator, in the interests of time we will only allow two more callers' questions. Please go ahead.

Operator

Thank you. Next question comes from the line of Steven Pelayo from HSBC. Please ask your question.



Steven Pelayo - HSBC - Analyst

Yes, great. I want to ask a little bit about the 40-, 45- nanometer node. Right now, is your visibility suggesting that that continues to grow, or are those people migrating now to 28 nanometer? I guess I'm just trying to understand on a dollar basis, as you look at the first quarter to second quarter, are you pretty confident of that 40-, 45-nanometer growth?

Morris Chang - TSMC - Chairman and CEO

Yes, 40, 45 nanometers is continuing to grow. The volume this year will be higher than last year. And --

Steven Pelayo - HSBC - Analyst

And then earlier today -- I'm sorry. Earlier today you have hinted that once you get up the yield curve, I think you said it takes about three quarters or so, it surpasses the corporate average margin. So is it safe for me to assume that your 40, 45 nanometer today is surpassing your corporate average margins already?

Morris Chang - TSMC - Chairman and CEO

Yes, 40, 45 nanometer is higher than corporate average.

Steven Pelayo - HSBC - Analyst

Okay. Then my last question is, a lot of questions are being asked about structural profitability with your depreciation growing, [easing] your revenue growth for a couple of years here or so. And we keep talking about capital intensity being 1.4 times greater in each node and -- is -- I know we don't want to call it pricing power, but I just want to make sure your customers or your partners really do understand the value you're delivery. Are the ASPs that you're seeing at this particular stage, whatever it is, 10,000, 20,000 Wafers a month or something, for 20 nanometer also at multiples, where it's 1.4 times greater? I'm just trying to understand the pricing multiple (multiple speakers).

Morris Chang - TSMC - Chairman and CEO

You are saying you hope our customers understand the value we are offering to them. Is that what you're saying?

Steven Pelayo - HSBC - Analyst

I just want to make sure you're able to price for the value that you're bringing, given that you have to pay so much more for the CapEx.

Morris Chang - TSMC - Chairman and CEO

Steve, we spare no effort in convincing our customer, persuading our customer that we are really giving them big value, even bigger value than he is willing to pay for.

Steven Pelayo - HSBC - Analyst

And is there any way you can quantify and have some color on what the 20-nanometer ASP as a multiple of your 40 nanometer, 65 nanometer, your blended average? Give me a general idea to help me understand, giving you have to pay so much more for the CapEx at 20 nanometer.



Morris Chang - TSMC - Chairman and CEO

I understand the comment. I don't want to comment on 20-nanometer pricing now, no.

Steven Pelayo - HSBC - Analyst

Okay.

Morris Chang - TSMC - Chairman and CEO

Thank you.

Steven Pelayo - HSBC - Analyst

Take care.

Operator

Thank you. And your last question comes from the line of Brett Simpson from Arete Research. Please ask your question.

Brett Simpson - Arete Research - Analyst

Thanks very much. I have a question for Dr. Chang on Samsung. So, Dr. Chang, Samsung's Logic business has grown something like 70% last year and they're talking about a big CapEx year again in 2012. How do you view their overall manufacturing capability? And given they're the only ARM chip maker with their own leading-edge Fabs, how do you think about Samsung? Do you think it's a -- they're a long-term risk for the Foundry sector?

Morris Chang - TSMC - Chairman and CEO

I think they're a formidable competitor and I do expect that they will grow their -- well, maybe not their Foundry business. They will certainly grow their -- what do they call it, System LSI, yes. Remember, now, it's -- System LSI has a major role in supplying Samsung itself with Logic products.

And of course Samsung's use -- their own use of their Logic ICs in smartphones, in tablets and even in consumer electronics -- other consumer electronics, has been growing. And now, Foundry, the way we do it is only part of the System LSI business. Now, I expect their System LSI business to grow very fast. The numbers you cited really apply to their System LSI business, though, and Foundry is only a part of it. But they are a formidable competitor -- they are a formidable competitor in the Foundry field, yes.

Brett Simpson - Arete Research - Analyst

Great. Great, thanks. And, Lora, just a follow up. I think there was an earlier question on depreciation. But I guess in the last few quarters 300-millimeter shipped Wafers have been sequentially pretty flat and now you're talking about it growing again in first quarter on a sequential basis. Can you -- now that that's kicking up again, can you talk a bit about depreciation over the next few quarters, how that might trend?



Lora Ho - TSMC - SVP and CFO

Well, the first-quarter depreciation will go up roughly 5% and after the second quarter it will go up more rapidly, as we plan the pre-packs. Slightly more than half will be first half of this year.

Brett Simpson - Arete Research - Analyst

Okay, that's great. Thanks very much.

Lora Ho - TSMC - SVP and CFO

All right, this concludes our Q&A session. Thank you for joining us today. We hope you will join us again next quarter. Goodbye.

Operator

Thank you. Before we conclude TSMC's 4Q '11 results webcast conference call today, please be advised that the replay of the conference call will only be accessible through TSMC's website, at www.tsmc.com. Thank you all and you may all disconnect.

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