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# EDITED TRANSCRIPT

2330.TW - Q3 2012 TSMC Earnings Conference Call

EVENT DATE/TIME: OCTOBER 25, 2012 / 6:00AM GMT

## OVERVIEW:

Co. reported 3Q12 revenues of TWD141b and EPS of TWD1.90. Expects 4Q12 revenues to be TWD129-131b.



## CORPORATE PARTICIPANTS

**Elizabeth Sun** *TSMC - Director of Corporate Communications*

**Lora Ho** *TSMC - SVP, CFO & Spokesperson*

**Morris Chang** *TSMC - Chairman & CEO*

## CONFERENCE CALL PARTICIPANTS

**Roland Shu** *Citigroup - Analyst*

**Michael Chou** *Deutsche Bank - Analyst*

**Randy Abrams** *Credit Suisse - Analyst*

**Mehdi Hosseini** *Susquehanna International - Analyst*

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

**Donald Lu** *Goldman Sachs - Analyst*

**Brett Simpson** *Arete Research - Analyst*

**Eric Chen** *Daiwa - Analyst*

**Rick Hsu** *JPMorgan - Analyst*

**Andrew Lu** *Barclays - Analyst*

**Steven Pelayo** *HSBC - Analyst*

## PRESENTATION

**Elizabeth Sun** - *TSMC - Director of Corporate Communications*

(Spoken in Chinese). Welcome to TSMC's third-quarter 2012 earnings conference and conference call. This is Elizabeth Sun, TSMC's Director of Corporate Communications and your host for today.

Starting last quarter, we have combined the quarterly earnings conference with the conference call and the event is webcast live via TSMC's website at [www.tsmc.com](http://www.tsmc.com). If you are joining us through the conference call, your dial-in lines are in listen-only mode. As this conference is being viewed by the investors around the world, we will conduct the 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 third quarter and give you our guidance for the next quarter. Afterwards, TSMC's Chairman and CEO, Dr. Morris Chang, will provide his general remarks and a couple of key messages. Then we will open the floor to questions.

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

Before we begin, I would like to remind everybody that today's discussions may contain forward-looking statements that are subject to significant risks and uncertainties which could cause actual results to differ materially from those contained in the forward-looking 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** - TSMC - SVP, CFO & Spokesperson

Good afternoon, good evening and good morning, everyone. Thank you for joining us this afternoon. Today my presentation will start with the financial highlights for the third quarter and followed by the outlook of the fourth quarter.

I am pleased to report a record quarter for TSMC in both revenue and net income, thanks to customers' strong demand for mobile computing applications and our leadership in technology. Third-quarter revenue increased 33% year over year and 10% sequentially to reach TWD141b, exceeding our guidance. The better-than-expected revenue was due to higher shipments to support China smartphone demand and higher [mask] and backend revenue.

On the profitability side, third quarter gross margin was 48.8%. Operating margin was 37.2%. Both are better than our guidance. The higher margin was due to higher utilization and a better product mix and a higher yield. Total operating expenses, dollars, increased slightly in the third quarter, however, as a percent of revenue decreased to 11.6% on a larger revenue base. Overall our third quarter EPS was TWD1.90. ROE for the single quarter was 30.3%.

Let's move to revenue by product segment. During the third quarter, wafer demand for mobile computing devices continued to be strong, leading to double-digit growth in communication and industrial-related segments, while demand for computer and consumer-related products were relatively soft during this quarter.

We are happy to see the good progress of our 28 nanometer. 28 nanometer revenue and shipments more than doubled during third quarter due to solid customer demand and excellent execution. The contribution to total wafer revenue has increased from 7% in the second quarter to 13% in the third quarter. We expect 28-nanometer revenue will exceed 20% of our total wafer revenue in the fourth quarter and will be more than 10% for the whole year.

Taking a look at the balance sheet, cash and marketable securities ended the quarter at TWD148b, down TWD40b from the second quarter. Current liabilities decreased by TWD93b, mainly due to the payment of TWD78b cash dividend in July. Taking advantage of the low interest environment, we raised TWD40.6b in corporate bonds at an average interest rate of 1.33%. Our total long-term debt, interest-bearing debt, has increased to TWD78b.

On the cash flow side, we generated TWD77b from operations in the third quarter, invested TWD78b in capital expenditure, paid TWD78b for dividend and raised TWD41b through corporate bonds. Overall our cash balance decreased TWD40b to TWD139b at the end of the third quarter. Due to more capital expenditure, the free cash flow in the third quarter was a negative TWD1.7b.

Let me make some comments on our capacity plan. As we continue adding capacity for 28 nanometer, our total capacity has increased 5% to 3.8m wafers in the third quarter. We expect 28 nanometer will be fully utilized. For the full year, our 12-inch capacity is expected to increase 21% in 2012 and total annual capacity for the Company will increase 14% to reach 15m 8-inch equivalent wafers.

Regarding capital expenditure for this year, up to the third quarter we have spent \$6.2b, representing 75% of our total year budget.

I have finished my report on the financial highlights. Now let me turn to the fourth quarter outlook. Based on our current expectation and the forecast exchange rate of TWD29.47, we expect our revenue to be between TWD129b and TWD131b. In terms of margins, we expect the fourth quarter gross margin to be between 45% and 47% and the operating margin to be between 33% and 35%.

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



**Morris Chang** - TSMC - Chairman & CEO

Good afternoon, ladies and gentlemen. For the third quarter we had a record quarter in both revenue and net income, as Lora has already reported. Fourth quarter, as guided, is going to be a modest dip, about 8% in revenue. We also think that this will be followed by another modest dip in the first quarter. And we expect a rebound in the second quarter, orders we actually predicted three months ago.

The fourth-quarter dip and the first-quarter dip is caused by supply chain inventory adjustment. Right now the days of inventory, DOI, is about 13 days above seasonal. We expect that it will be adjusted to seven days above seasonal at the end of the year. And then it will become normal in the second quarter of next year. That is consistent with our prediction of two dips caused by inventory -- supply chain inventory adjustment.

Now both our third quarter and our fourth quarter are better than our expectations three months ago. Third quarter we did exceed guidance. And even though fourth quarter will have a dip, as we forecast now, but it's a dip from a higher level than we forecasted three months ago. Why? We think the reason is the strength of mobile product demand.

First, mobile IC demand is indeed very strong, stronger than we expected even three months ago. Secondly, TSMC is foundry leader in mobile IC, and together with our partners we are the technology leader in mobile IC. This is a leadership that we and our partners will continue, will maintain. Third, TSMC value-added increases as smartphones get smarter and feature phones get smart. We expect mobile products to fuel TSMC growth for a number of years, a number of years.

Next I will talk about a few product segments. 28 nanometer, in the third quarter it was 13% of our revenue. In the fourth quarter it will be higher than 20% of our revenue. And for the whole year next year, we expect it to be more than 30% of our revenue. Yields have continued to improve and the gross margin of the 28 nanometer will be in the low 40s, low 40% in the fourth quarter. And it will be, in 2013, it will be at corporate average.

Another product segment, CMOS image sensor, we have made significant improvements in optical performance. And dual cameras and higher-resolution sensors have been introduced in smartphones and tablets as an example of value-added increase in mobile products. Next, another example of value-added increase in mobile products, TSMC value-added increase in mobile products, and that's the fingerprint authentication and near-field communication.

On 20 SoC, 20-nanometer SoC, our 112-megabit SRAM yield has progressed significantly and we are now accepting customers' test chips. In fact, we have already accepted several customers' test chips and accepting more.

On 16 FinFET, we plan to accept test chips in first quarter, next quarter, first quarter '13 -- 2013, next quarter. And then in June of next year we plan to have the first CyberShuttle. And then in November of next year, we plan to start risk production. This is a somewhat faster cadence than our previous generations. And one big reason for that is that basically 20 nanometer and 14 nanometer are quite alike; the interconnects are very, very alike, of course. 16 is FinFET, that's the big difference. But other than that, there are many similar aspects. And so we will be able to introduce the 16 nanometer quicker, a lot faster than normally we introduce a new generation.

Another point that's worthy of note along with our development of 20 SoC and 16 FinFET, that's that our Open Innovation Platform, OIP, which is our design ecosystem, it is becoming a more important competitive advantage as the technology advances to 20 nanometer. At 20 nanometer our competitive advantage in our design ecosystem is greater than in [20] nanometer or earlier generations. Our customers rely on us for design exploration, solution development and design validation.

Next item I want to report is that we did invest in ASML to the tune of approximately EUR1.1b. Of the EUR1.1b, a quarter is in R&D sharing and three-quarters are investment in their stocks. The R&D sharing will be spread over a five-year period, starting in 2013. This investment is important to us because of EUV and 450-millimeter lithography, both of which are important to us at 10 nanometers and beyond.

Next item I want to report is that we have purchased 14 hectares of land in Chunan. It's about 20 minutes of driving from the Science Park in Hsinchu. So it's really very nearby. And the reason it has to be nearby is that we're using the land for our new advanced R&D fab. And that R&D fab is going to be for 450 millimeters and 7 nanometers development.



Next, we expect 2013, 2014, 2015 and 2016, those four years, to be either growth years or strong growth years. We believe that the strategy we adopted a few years ago of drastically expanding our R&D and our capital investment is beginning to pay off. Actually you can already see it from the last couple of years' results. But more is yet to come; the best is yet to come. And we will continue the R&D expansion.

Now on capital expenditure, I will make separate comments. Capital expenditure will be about USD8.3b this year, which is right in the middle of the range that we guided a few months ago; we said USD8b to USD8.5b, and it now appears that it will be about USD8.3b this year. Of course, the resulting cash flow stream from this capital expenditure is going to be much greater, much greater than the capital investment. I will give you a ballpark number for next year's capital expenditure now. It will be the same ballpark as this year's capital expenditure, same ballpark.

Just to preempt the question of how big is your ballpark. Well, my answer is neither very small nor very big. Okay? It's in the same ballpark. I think that you can use common sense. I'm a very commonsensical person. I'm not trying to play any tricks on you.

We plan to do more borrowing via corporate bonds. Actually, our net cash flow from operations in the years -- in the three years 2012, 2013, 2014, I'm talking about that three-year period, our net cash flow from operations in those three years is sufficient to support our CapEx in those three same years. I'm with that thinking a little bit because that defines another boundary for our CapEx.

So why do we borrow money? We borrow money to pay dividend which we will keep at TWD3 per share in this period.

That concludes my comments. Thank you very much.

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## QUESTIONS AND ANSWERS

**Elizabeth Sun** - TSMC - Director of Corporate Communications

Thank you, Chairman. And this concludes our prepared statements. Before we begin the Q&A session, may I remind everybody that please to limit the number of questions you do have to two at a time so that other participants have opportunities to ask questions to the management. Questions will be taken both from the floor and from the call. Should you wish to raise your question in Chinese, I'll translate it to English before our CEO or CFO answers your question.

(Operator Instructions). Now let's begin the Q&A session. Our first question comes from Citigroup, Roland Shu.

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**Roland Shu** - Citigroup - Analyst

(Spoken in Chinese).

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**Morris Chang** - TSMC - Chairman & CEO

Would you translate into English a little bit?

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Roland's question is about the near-term outlook where Chairman had once said last quarter that second quarter next year will see a rebound. So he would like to know a little bit color in terms of the strength of that rebound for second quarter next year.



**Morris Chang** - TSMC - Chairman & CEO

Well it's just like my comment earlier that third quarter and fourth quarter are actually better than we forecast three months ago, even though we're still forecasting a dip in the fourth quarter, because -- it's better than we forecast three months ago because we are dipping from a higher level. So to your current question, I said -- I think that your present question is I said three months ago that second quarter will be a strong rebound, and you are a very alert person; you had noticed that I did not use the word strong this time. Is that the origin of the question?

Well my answer, however, is that I did not use the word strong because we are now talking about a higher level in the first quarter. So it will be a rebound. In fact in some people's eyes I think it will be viewed as a strong rebound. But I think that we -- I decided not to be too aggressive on this sort of thing. So I say it will be a rebound. We're still -- it's still two quarters away, frankly. Even though I think our visibility is in general quite good, but two quarters away, we can't be sure exactly what the strength of the rebound is. But I know, I am 100% certain that there will be a pretty good rebound.

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**Roland Shu** - Citigroup - Analyst

Thank you. So I think best [quote] is a rebound from a relative higher base than what you thought three months ago. Are we confident on second quarter next year?

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**Morris Chang** - TSMC - Chairman & CEO

Higher revenue base that we predicted three months ago, yes, that was my point. Yes.

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**Roland Shu** - Citigroup - Analyst

Okay. Thank you. Then I think my second question is regarding the 20 nanometer and the 16 nanometer. And a lot of your clients talk about the 20-nanometer cost -- the cost saving or the cost per transistor actually is still not reached the economy scale of sweet spot. And actually Broadcom also have the same comment, yesterday -- during yesterday's earnings conference. So my question is since a lot of the customers actually they are not aggressive to get into 20 nanometer so far, and however listening to your comments, you are very aggressively talking about 20 nanometer and even 16nm demand. So my question is, is this 20-nanometer or 16-nanometer customer-specific -- achievement by customer-specific demand or is it just for overall demand? Thank you.

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**Morris Chang** - TSMC - Chairman & CEO

Well on 20 nanometer's performance, I want to give you the numbers, the correct numbers that our technical people have given to me. The performance gain from 28 nanometer to 20 nanometer, that's your question, right? From 28 nanometer to 20 nanometer, the performance gain is 15% to 20% at the same total power. And the power reduction is 20% to 25% at the same speed. You get that? 15% to 20% performance gain at the same power and 20% to 25% power reduction at the same speed.

Now I know that some customers want even more. But one phenomenon that we are faced is that customers are consolidating. The bigger customers are bigger than the other customers, than big customers used to be bigger than other customers. All right?

Incidentally I was rereading a passage of Michael Porter's classic Competitive Strategy just the other night. And he said that there are five things that every company has to cope with. One of those things is customers' bargaining power. Another thing is suppliers' bargaining power. And I'm glad to report that after looking over those five things and thinking about each of them in relation to us, we have come out, I think, pretty good overall. But your question reminds me of a customer's bargaining power and also a customer's relative importance.

All right. So here there may be a larger number of customers that want more performance or less power than there are customers who are already satisfied with them. But it turns out that those that are already satisfied with them buy more than the ones that want more.



**Elizabeth Sun** - TSMC - Director of Corporate Communications

Okay. Next question goes to Deutsche Bank, Michael Chou.

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**Michael Chou** - Deutsche Bank - Analyst

Hi, Chairman. Hello. When do you expect the risk production for 16-nanometer? As you guided before, should be second half 2015. Do you expect the earlier introduction for 16 nanometer, given that you have reached production for 16 nanometer?

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Right. Michael's question is given that we begin risk production of 16 FinFET at November 2013, when -- all right. Risk production of 16 nanometer starts November 2013. When will we start mass production for 16 nanometer?

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**Morris Chang** - TSMC - Chairman & CEO

I think it will be a year -- I think it will be approximately a year later.

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**Michael Chou** - Deutsche Bank - Analyst

My second question is could you give any update for the CoWoS. Do you expect a broad-based reduction for your CoWoS in 20 nanometer?

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**Morris Chang** - TSMC - Chairman & CEO

Yes, CoWoS will be used with the 20-nanometer fab. In fact it's already being used with the 28-nanometer fab, but the revenue is still relatively small. And as I said, technically it's progressing fine. We are trying to reduce the costs more. The revenue, there will not be significant revenue until 2015, 2016.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Next question goes to Credit Suisse, Randy Abrams.

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**Randy Abrams** - Credit Suisse - Analyst

Yes. My question is a follow-up on the 20 nanometer and 16 nanometer. If you could talk about how customers are weighing -- choosing one versus the other, if you talk about the benefits? And also do expect customers to choose one versus the other or a number of customers to migrate to both?

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**Morris Chang** - TSMC - Chairman & CEO

We talk to every one of them. We talk to every one of them, every major one, painstakingly, explain to them painstakingly and exhaustively. Now the smaller customers, we of course do it in the technical symposium that we hold three or four times a year. Yes. So is that your question, do we explain to them the pros and cons of the 20 nanometer and the 16 nanometer?

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**Randy Abrams** - *Credit Suisse - Analyst*

More just a view. Usually it's two years between each node and now it's one year. Are customers choosing one versus the other? Or do you expect customers to actually do designs year after year for both and would that add cost?

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**Morris Chang** - *TSMC - Chairman & CEO*

I think that there will be customers that will go light on one and heavy on the other. And there may even be customers that will skip one -- skip 20 nanometer to get to 16 nanometer.

So right now we're still in the discussion stage with a number of customers, with a number of -- a pretty large number of customers. But again, going back to my earlier point, we would not be making this kind of investment if we didn't have some very big customers already in view.

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**Randy Abrams** - *Credit Suisse - Analyst*

My follow-up question, you mentioned CapEx in the same ballpark for next year. Could you talk about the financial, how we should factor it in, if CapEx is in that ballpark, just depreciation, expense into next year in your view and structural profitability in light of that.

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**Morris Chang** - *TSMC - Chairman & CEO*

Lora, would you answer that?

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**Lora Ho** - *TSMC - SVP, CFO & Spokesperson*

We have not finalized the next year's CapEx, although Chairman talked about it will be in the range of the ballpark. You can see this year the depreciation has increased by about 20%, maybe a little bit more than 20%. With the ballpark that Chairman was just describing, I believe the depreciation will also increase at maybe 20% level for next year.

But I don't want you to be scared by those depreciation increases because depreciation increase is not a problem as long as the capacity that we invest is getting utilized. And those products give the very similar or better structural profitability so it will not be a deteriorating factor to the overall margin.

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**Morris Chang** - *TSMC - Chairman & CEO*

It is our strategy to have 100% utilization at the leading edge.

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**Randy Abrams** - *Credit Suisse - Analyst*

Thank you.

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**Elizabeth Sun** - *TSMC - Director of Corporate Communications*

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

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**Operator**

The next question is from Mehdi Hosseini from Susquehanna International.

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**Mehdi Hosseini** - *Susquehanna International - Analyst*

Thanks for taking my question. First one has to do with your commentary on Q1. You referred to it as a dip. Is the dip similar to Q4 level?

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**Elizabeth Sun** - *TSMC - Director of Corporate Communications*

Whether or not the magnitude of the dip in Q1 will be similar to the dip in Q4.

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**Morris Chang** - *TSMC - Chairman & CEO*

It will be in the same ballpark. The magnitude of the dip will be -- well, look, I would really hate to -- normally we don't really guide two quarters ahead of us. But last time I did give a rough indication of Q1. Now -- so I really would hate to make a habit of it.

But since you asked, now I will honestly, I'll try to answer you as honestly as I can. I think it's about the same ballpark. We have -- what we forecast about to be 8% dip in the fourth quarter. And Q1 I think will be in the same ballpark. But it's really a bit early for us to tell certainly. Yes.

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**Mehdi Hosseini** - *Susquehanna International - Analyst*

And then the second question has to do with the 20-nanometer and the tape-out. How should we think about the number of tape-outs or the level of customer interest as you are installing the pilot line?

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**Elizabeth Sun** - *TSMC - Director of Corporate Communications*

The question is how many tape-outs on 20 nanometer that we have already received.

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**Morris Chang** - *TSMC - Chairman & CEO*

On 20, do we have a number, Lora?

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**Lora Ho** - *TSMC - SVP, CFO & Spokesperson*

I think currently the 20-nanometer tape-out is roughly maybe around 50, 50 tape-outs, which is maybe one-fifth of our 28-nanometer tape-outs.

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**Mehdi Hosseini** - *Susquehanna International - Analyst*

And the pilot line, should I assume that the pilot line would be constructed and ready by summer of next year?

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**Elizabeth Sun** - *TSMC - Director of Corporate Communications*

I can't hear you very clearly. Can you repeat that again please, Mehdi?

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**Mehdi Hosseini** - *Susquehanna International - Analyst*

Sorry about that. Just to be clear, the 20-nanometer pilot line should be constructed and ready to go by the summer of next year, is that correct?

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**Morris Chang** - *TSMC - Chairman & CEO*

The 20-nanometer pilot line is, yes, Lora.

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**Lora Ho** - *TSMC - SVP, CFO & Spokesperson*

We have start to spend money on 20 nanometer since this year. However, the real production will not start until 2014. But we do have an engineering line per se being built up this year and next year.

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**Mehdi Hosseini** - *Susquehanna International - Analyst*

Great. Thank you.

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**Elizabeth Sun** - *TSMC - Director of Corporate Communications*

Okay. Now we're coming back to the floor. The next question goes to Bank of America-Merrill Lynch, Dan Heyler.

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

Thank you, Elizabeth. Thank you, Chairman and Lora, for the great introduction, comments and color on your products. I wanted to follow up on a question I had last quarter, a bit on the idea of perhaps building more of a focused fab approach for some of your larger customers versus the very diversified fabs that you currently run.

I guess as you look at some of the largest mobile chip users in the world and you look at their product cycles it can be quite volatile with some huge swings on new product cycles back and forth. I'm wondering as you manage those fabs, should we anticipate perhaps more volatility in those fabs versus your very diversified fabs? Granted you're getting new business so perhaps it's good that you're generating more revenue, albeit perhaps with more volatility. Or do you think you can achieve the same level of returns on a focused fab versus a broad-based diversified fab. Thank you.

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**Elizabeth Sun** - *TSMC - Director of Corporate Communications*

Well to summarize Dan's very long question is the comment Chairman made last quarter about dedicated fabs for customers. Chairman made the dedicated fab comments. And so Dan's question is given single product lifecycle, product lifecycle could be more volatile than a diversified pool of products. So if we have fabs that are dedicated to one or two single products, we have to be able to manage higher volatility or Chairman thinks that the volatility will be about the same. Volatility, more volatile.

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

Specifically big new product cycles that take two quarters to ramp and then go away. Thank you.

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**Morris Chang** - TSMC - Chairman & CEO

All right. Let me try to figure what you really want to ask. You appear to be concerned that if we dedicate fabs to a certain customer, then that customer may leave the fab because he migrates to a more advanced technology. Is that right?

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

Yes, or a group of products that are dedicated to a fab. Indeed, thanks.

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**Morris Chang** - TSMC - Chairman & CEO

Yes. Well then I think it's important for us to be able to convert to a new technology -- to convert the fab to a new technology with as little loss as possible. And I think that's an art that the DRAM companies actually have learnt. And we have also done some of that. But we are going to do the same thing the DRAM companies have done in the past. We are trying to make the product -- the equipment as commonly usable as possible.

I think that now of course we do have additional advantage because we do have a very large second wave of users. And we have always had that. We have always had that. And so in the past the second wave users have always begun to take over the fabs that the first wave users leave behind, and we'll continue to have that.

Now I do want to clarify this business of dedicating fabs. I don't think that one should take that literally in many cases. There may be or there will be very rare cases when we will dedicate something to a customer, but that's not going to be a very common practice.

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

I guess I'll take a follow-up to that. I guess the distinction being that your second wave adopters in the past were quite mainstream and quite broad-based. So if you're pushing the frontier technology quite a bit ahead, I'm wondering if there's a concern that that maybe [N minus 1] group may come later and hence perhaps the returns on the most advanced --.

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**Morris Chang** - TSMC - Chairman & CEO

You're asking how we manage the second wave of customers?

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

Whether the second wave adoption is sufficient as in the past to generate the higher returns.

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**Morris Chang** - TSMC - Chairman & CEO

Generate higher returns? Well, yes, we generate a lot of returns from second wave and third wave and fourth wave. And I mean it. Fourth and fifth wave, yes. Look we're still running a fab 2 and it's full more frequently than it's not. By the way, fab 2, in case you have forgotten, is 6-inch 0.5 micron.

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

Okay. So no -- you anticipate no change in the timeline between the early adopters and the second wave adoptions, even though you're putting your technology very, very leading edge, that that second wave will continue to be quite strong, even with a concentrated customer base and even with a very mobile focus. Okay. Thank you very much.



**Elizabeth Sun** - TSMC - Director of Corporate Communications

All right. Next question goes to Goldman Sachs, Donald Lu.

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**Donald Lu** - Goldman Sachs - Analyst

I have two questions. First is on the structural profitability. Chairman, you commented earlier that 28-nanometer margin would improve in the maybe first half next year. So could we assume the structural profitability, i.e. the gross margin will reach 50% at 100% utilization early next year?

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**Morris Chang** - TSMC - Chairman & CEO

Well we hope that it will be 50%, but you know 50% is something that we have very rarely done, frankly. So to assume that the corporate average is -- I think the 100% utilization is -- we do get 50%, yes, right. But we're talking about corporate average next year. And next year, as I already said, we're going to start off with a not very good quarter. So next year's corporate average utilization is not going to be 100%.

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**Donald Lu** - Goldman Sachs - Analyst

Sure. I meant in assuming the utilization is 50 -- in Q3 I think utilization was a little bit over 100%, gross margin was 49%, 48.8%. So next year would be improving from this level. I guess that's my question.

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**Morris Chang** - TSMC - Chairman & CEO

Your question is about 28 nanometer, right? Is that right?

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**Donald Lu** - Goldman Sachs - Analyst

Yes. 28 would be the key factor affecting this.

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**Morris Chang** - TSMC - Chairman & CEO

Yes. Well actually I really have a simple answer for you. If you're asking about our total, the whole Company's structural profitability, the simple answer is it is a challenge every year. But we have so far managed to at least maintain it. And we actually have eked out a little progress in the last few years. And you can tell from the results, we have eked out a little progress. But it's a challenge every year. But it's -- we consider it to be our major challenge, a major task. And we are going to at least maintain this structural profitability. It cannot be allowed to deteriorate.

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**Donald Lu** - Goldman Sachs - Analyst

The follow-up question on this after 20-nanometer, presumably you will do double patterning and the costs would increase. On 40 nanometer, probably even more, EUV, etc. Who is going to pay the bill going forward? If TSMC wants to maintain its structural profitability, will someone else have to pay for it or are they going to --?

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**Morris Chang** - TSMC - Chairman & CEO

We will reduce the cost. We reduce the cost. I don't think it's a question of who pays. It's never a zero-sum game. We'll reduce the cost. And as you may or may not have noticed that our average rate of decline of price has slowed down in the last three years. It has not -- it's still going down, but the rate of decline has slowed down. I can't -- really don't want to tell you any more.

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**Donald Lu** - Goldman Sachs - Analyst

Okay. Thank you.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Okay. I think we will go back to the call and have the next question come from the call. Operator, please proceed.

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**Operator**

The next question is from Brett Simpson from Arete. Please go ahead.

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**Brett Simpson** - Arete Research - Analyst

Yes. Thanks very much. I had a question for Lora just on the gross margin guidance for Q4. Can you maybe talk a little bit about how you see depreciation moving Q on Q and whether there's any changes ahead in other manufacturing costs per wafer? Your guidance seems to imply there's some savings in cost of sales, so I just wanted to understand that more.

And then the second question for Dr. Chang. Regarding the trend towards CoWoS and TSV, when we think about your wireless customers moving to these new packaging technologies, how do you engage with memory as part of this roadmap? And is there a need for a more strategic partnership with DRAM makers? And given there's so few mobile DRAM makers out there, how do you really manage this with your leading-edge wireless customers going forward? Thanks very much.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Brett, I think your first question is for Lora and your question is with respect to depreciation quarter-over-quarter increase and how that is impacting the cost. Is that correct?

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**Brett Simpson** - Arete Research - Analyst

Yes. And also whether there's any changes in manufacturing -- other manufacturing cost per wafer.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

All right. How we can change the other manufacturing cost for the wafer manufacturing cost.

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**Lora Ho** - TSMC - SVP, CFO & Spokesperson

Other manufacturing costs.



**Elizabeth Sun** - TSMC - Director of Corporate Communications

Right. Okay. Second question, Brett, I think you need to clarify. You asked Chairman about TSV and you are talking about our 3D-IC packaging solution using TSV and with a memory partner, right?

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**Brett Simpson** - Arete Research - Analyst

Yes, exactly.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Okay. We'll have Lora answer your question first.

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**Lora Ho** - TSMC - SVP, CFO & Spokesperson

Your first question asking about quarter-over-quarter change of depreciation. Now we're in the third quarter now. The third quarter depreciation for the whole quarter is around TWD35b. And we estimate the next quarter, fourth-quarter depreciation will be a little more TWD36b. So each quarter it will increase slightly.

You also ask about how do we reduce the non-depreciation cost. To be frank with you, we have taken a significant effort in the past two months trying to reduce the all other costs, including the material purchase price, the indirect material used for the wafer, productivity and so on and so forth. That has been actually one of the continued efforts in TSMC. Especially when we see there's a continued two quarter in the downturn, the management team has put a lot of effort trying to reduce that. And so far we have been quite successful in doing that.

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**Brett Simpson** - Arete Research - Analyst

Thank you.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

So Brett, could you please repeat your second question a little bit slow?

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**Brett Simpson** - Arete Research - Analyst

Okay. So when we think about the move to 3D packaging, particularly from a wireless perspective, how do you engage -- how does TSMC engage with memory as part of this roadmap? So is there a need for a more strategic partnership with mobile DRAM makers and how do you manage this with the leading-edge wireless customers?

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Okay. Your question is when we move to 3D-IC packaging, how do we engage with memory makers to form a strategic alliance and how we manage that. Is that right?

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**Brett Simpson** - Arete Research - Analyst

Yes.

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**Morris Chang** - TSMC - Chairman & CEO

We have been in active collaboration with two memory makers, Hynix and Micron. Actually we started discussions with Elpida, but then they went bankrupt. But we have been in active collaboration and discussion with Hynix and Micron.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Okay. Now we're coming back to the floor and the next question goes to -- you are in Daiwa now, right? Daiwa's Eric Chen.

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**Eric Chen** - Daiwa - Analyst

Okay. Actually my first question will probably go to Lora. Once you talked about the depreciation expenses for next year probably jump by 20% year on year. What kind of CapEx you assume? Is it flat CapEx trend or up the CapEx, how many percent?

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**Lora Ho** - TSMC - SVP, CFO & Spokesperson

You're asking the question that I cannot answer. It's in the ballpark Chairman just mentioned. Well of course, this is very preliminary because we are still in 2012. The number may change. So I just give you a range of -- based on the range of ballpark, it's in the 20% range. I can only say that. It can be little bit higher. It can be little bit less.

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**Eric Chen** - Daiwa - Analyst

Okay. And let's talk about the consensus on the CapEx for the TSMC next year probably around the USD10b. If that's the case, let's talk about how the EBITDA for next year and I guess probably around USD11b to USD12b. And we look at -- and then we look at the cash dividend and we probably have to give like \$2.6b. So if that's the case, can I assume you are going to borrow like \$2b as the corporate bond?

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**Lora Ho** - TSMC - SVP, CFO & Spokesperson

Chairman just mentioned we borrow to pay dividend. Every year we pay \$2.6b dividend. So three years is 2.6 times 3. So we are planning to do that much of borrowing in the three-year timeframe.

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**Eric Chen** - Daiwa - Analyst

Okay. Are you talking about the borrowing for the coming three years?

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**Lora Ho** - TSMC - SVP, CFO & Spokesperson

Yes, including this year, of course.



**Eric Chen** - *Daiwa - Analyst*

Okay. Thank you. And my second question, probably I need the answer from the Chairman. If I am right and I remember you talked about year 2013 to year 2016 will be very strong, and strong for the semiconductors, strong for the --.

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**Morris Chang** - *TSMC - Chairman & CEO*

Either strong -- those four years will be either growth or strong growth.

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**Eric Chen** - *Daiwa - Analyst*

Okay. What kind of strong growth you're talking about? The more -- better than --?

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**Morris Chang** - *TSMC - Chairman & CEO*

You tell me. You tell me. You know.

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**Eric Chen** - *Daiwa - Analyst*

Okay. I will say 20%.

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**Morris Chang** - *TSMC - Chairman & CEO*

20% is strong? Yes, okay. I more or less agree with that. But those four years will be either growth or strong growth.

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**Eric Chen** - *Daiwa - Analyst*

Okay. I see. Actually I would like to get an idea what's your logic behind? What kind of product, what kind of trend do you think the TSMC are on a very good position and to capture this kind of high growth?

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**Morris Chang** - *TSMC - Chairman & CEO*

We're talking about mobile products. And basically I think it should be clear by now that we are -- our emphasis is on mobile product market segment and also leading-edge technology. And whatever goes with leading-edge technology, like 3D-IC and whatnot.

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**Eric Chen** - *Daiwa - Analyst*

Okay. I see. Okay. Thank you.

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**Elizabeth Sun** - *TSMC - Director of Corporate Communications*

Next question goes to JPMorgan, Rick Hsu.

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**Rick Hsu** - *JPMorgan - Analyst*

Yes. Thank you. Hi, Chairman. Just one question from me. Can you talk a bit, a little bit about next year's outlook on a macro basis? For example, the macro economy forecast and the global semiconductor industry forecast, global foundry forecast and also how TSMC will perform relative to the global foundry average?

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**Lora Ho** - *TSMC - SVP, CFO & Spokesperson*

This year the semiconductor actually is negative growth, about 2%. Based on what we have seen, next year forecast, semiconductor will grow about 3% for next year. And what's your other questions?

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**Rick Hsu** - *JPMorgan - Analyst*

The foundry growth and also how TSMC would perform relative to the foundry average.

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**Lora Ho** - *TSMC - SVP, CFO & Spokesperson*

Okay. We currently expect foundry will grow around 7% in 2013 and TSMC will outgrow foundry in 2013 as well.

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**Morris Chang** - *TSMC - Chairman & CEO*

Well, semiconductor growth, I know that you are interested in it and we also keep track of it. But frankly, the total semiconductor growth is becoming less and less relevant to our growth plan. And actually the total foundry growth, while still relevant, but also it's becoming less and less so. We feel that we are on a level in foundries by ourselves.

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**Rick Hsu** - *JPMorgan - Analyst*

Thank you.

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**Elizabeth Sun** - *TSMC - Director of Corporate Communications*

Next question goes to Barclays, Andrew Lu.

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**Andrew Lu** - *Barclays - Analyst*

Dr. Chang, Lora. Special congratulations to Dr. Chang and TSMC to get the most important order from your competitor. Some structural questions I have. The first one --.

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**Morris Chang** - *TSMC - Chairman & CEO*

I'm sorry I didn't hear your compliment.

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**Andrew Lu** - *Barclays - Analyst*

I said congratulations to Dr. Chang and TSMC to get the most important order from your competitor.



**Morris Chang** - TSMC - Chairman & CEO

(Inaudible - microphone inaccessible).

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**Andrew Lu** - Barclays - Analyst

My first question, in the past 25 years TSMC keep its value proposition to keep most of the time ROE over 20% and surely maintain good margin. Will you take a lower margin order to below the corporate average ROIC in the next one or two years, while actually thinking about TSMC's strategic position in the next five to 10 years, which means some of these orders we might consider short-term we are giving up some margin. But for five- or 10-year position we are willing to take this kind of low margin order in the beginning of time. That's my first question.

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**Morris Chang** - TSMC - Chairman & CEO

I'm sorry I didn't really hear that. I didn't understand it anyway.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Right. Andrew's comments was that we, in the past, said that we want to keep above 20% ROE. And we -- his question is will we be willing to take lower-margin business for a short time, like two to three years, in order to improve our strategic position in the five to 10 years?

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**Morris Chang** - TSMC - Chairman & CEO

Do we take low-margin products in the first few years in order to improve our later position? Are you asking a philosophical question, my own philosophy? No, I do not do it because I have to live the next few years first. That's a personal philosophical answer.

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**Andrew Lu** - Barclays - Analyst

Thank you. The second question I have, if your mobile customers are not adapting CoWoS in year 2014, because earlier Dr. Chang mentioned CoWoS won't ramp up until year 2015 or '16 to have a revenue contribution. So are you ready in-house packaging on packaging or you need to partner with some other packaging house to do the POP? Thank you.

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**Morris Chang** - TSMC - Chairman & CEO

I think that we are going to be partnering. We are going to look at both possibilities, of course. We prefer to do it ourselves. But I think that we have become more flexible in partnering with OSATs.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

I think Dan will have a follow-up question. Dan Heyler from Bank of America-Merrill Lynch.

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

So just a few very short --.

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**Morris Chang** - TSMC - Chairman & CEO

I thought he asked his question.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

This is the follow-up.

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

Very short housekeeping question for Elizabeth. You can take a break and I'll keep it short. So could you walk through industrial, your industrial products? What's in that category? I think I heard you say earlier communications was strong and I think I heard some of the communications and mobile-related strength was also helping drive industrial. So I wanted to understand what's in the industrial that's growing so strongly? Thanks.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Lora, will you answer what is included in industrial? Or you --?

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

It's growing strongly.

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**Lora Ho** - TSMC - SVP, CFO & Spokesperson

Many things included in industrial, such as Power IC, MCU, data converter, FLASH controller, PLD, MEMS and smartcard.

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

You're not putting in the power management and communications?

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**Lora Ho** - TSMC - SVP, CFO & Spokesperson

No.

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

Okay.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Because this is generic, it's standard.

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

Okay. Got it. And the second classification I think perhaps I wanted to ask on, on your definition of foundry. Obviously the lines are getting blurred now. I think most of the capital equipment companies include Samsung in their concept of foundry. I know that it's both an IDM as well as a foundry as well as an equipment company. So perhaps in your definition going forward whether or not you could talk about foundry growth incorporating your largest competitor, Samsung, when you're talking about forecasts. Is that something that you would entertain? Thanks.

You're frequently talking about a semiconductor forecast which in fact is not relevant to your forecast. What is important is your perception of the foundry growth industry. But your forecasts are excluding Samsung. I'm wondering going forward if we could have your forecast for the foundry growth including Samsung. Thank you.

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**Elizabeth Sun** - *TSMC - Director of Corporate Communications*

I don't think our forecast excludes Samsung. I think for Samsung semiconductor part, non -- well, for semiconductor we even include Samsung's memory. And for the semiconductor ex memory we include Samsung's System LSI in our forecast.

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

Thank you.

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**Morris Chang** - *TSMC - Chairman & CEO*

Is his question whether our foundry forecast includes Samsung? I think it does.

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**Elizabeth Sun** - *TSMC - Director of Corporate Communications*

Yes, we do.

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**Morris Chang** - *TSMC - Chairman & CEO*

It does.

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

Just Samsung's foundry business or their Logic business overall?

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**Morris Chang** - *TSMC - Chairman & CEO*

Their what? Their Logic business?

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

Overall, okay.



**Morris Chang** - TSMC - Chairman & CEO

Their Logic business. I don't think they do any memory foundry, do they?

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

They have their own products in Logic. They also sell products into the merchant market. And they also have a dedicated foundry business.

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**Morris Chang** - TSMC - Chairman & CEO

I think our numbers include their -- Samsung's foundry numbers include Samsung's foundry numbers. Now if they make the products for themselves then we don't include that.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

That's right.

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

Perfect. Thank you.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Next question goes to Citigroup's Roland Shu.

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**Roland Shu** - Citigroup - Analyst

Thank you. I think my question is for Lora. Lora, can you talk about the photomask business since that was one of the strengths in your 3Q. How about the momentum in 4Q? And what's the application for this new photomask in 3Q? Thank you.

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**Lora Ho** - TSMC - SVP, CFO & Spokesperson

I think this question coming from we have said third-quarter revenue was exceeding guidance probably because we have higher mask revenue, right? Looking into fourth quarter, mask revenue overall will be less than third quarter. There will be a decline in mask. However, the new tape-out mask will not decrease. It's the repeated tape-out will reduce a lot of it. Mask has been a very good business for TSMC and it has a very good margin as well.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Another follow-up question coming from the floor that goes to Goldman Sachs, Donald Lu.

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**Donald Lu** - Goldman Sachs - Analyst

Chairman, I'll take the opportunity to maybe ask a more long-term question. As (inaudible) going forward to 20 nanometer, 16 nanometer, from your discussion with your customers do you think the absolute growth of the high-end revenue, the leading-edge revenue will continue to grow

at the same pace because of mobile computing? Or we are going to see like people are more hesitate to migrate after 20 nanometer, which seems to be a flexion point.

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**Morris Chang** - TSMC - Chairman & CEO

I think yes, the leading-edge revenue for each generation of leading edge will continue to grow as Moore's Law progresses. For instance, our 28-nanometer revenue is -- well its leading edge is now ahead of our 40 nanometer at the same stage. So I anticipate the 20 nanometer will be the same way. So I think that will continue.

Now of course you didn't ask about -- nobody asked about how important EUV is, how important the 450 millimeter is. They're very important. On EUV, I think it's the only economic way of doing, I won't say 10, but surely it will be the only economic way of doing 7. Even a 10, if we have a good EUV, a high throughput EUV, I think that our cost will be in good shape, will be in better shape. Of course we can use double patterning, triple patterning, quadruple patterning. But those we would like to avoid. And to avoid them depends on getting ASML to succeed with their high throughput EUV.

Now likewise 450 millimeters, that's going to be another impulse on cost reduction, I think. And I think that will cut in at -- 450 millimeter will cut in at the 7 nanometer. It may cut in earlier. I think Intel is talking about cutting in at 10 nanometer. But my feeling is that it will cut in at 7 nanometer.

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**Elizabeth Sun** - TSMC - Director of Corporate Communications

Donald, okay. In the interest of time I think we will just allow one last caller and we will give the venue to the call. Operator, please proceed.

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**Operator**

The next question is from Steven Pelayo from HSBC.

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**Steven Pelayo** - HSBC - Analyst

Great. Thank you. Just a question on 28 nanometer. TSMC is much larger than its competitors. It's going to have 20% of revenues in the fourth quarter from 28 nanometer when many of your smaller competitors are still struggling to get their first 5%. So for now you're just dominating this space. The competition is trying to get more aggressive there. I'm curious what you think about the total capacity out there and if the competitive environment's going to be more intense, maybe by mid next year, at 28 nanometer. Do you have any thoughts on that?

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**Morris Chang** - TSMC - Chairman & CEO

The total industry, foundry industry capacity on 28? Well I think it's quite large. But frankly, I think that in -- I know that in oxynitride, which is equivalent to our 28 LP, our 28 LP is oxynitride, I think that our competitors have produced pretty good yields, not nearly as good as ours, but good enough for them to sell. I think so.

But on the high-K metal gate which is our 28 HP and our 28 HPM, I think that we will be the only one that has effective capacity -- effective capacity, I mean capacity that you can sell, that customers will accept. I think that we'll be the only one on 28-nanometer high-K metal gate for quite a long time. And by that I mean two years maybe.



**Steven Pelayo** - HSBC - Analyst

Okay. And then one follow-up question, which is I'm curious about your customer discussions going on now. The perception is that Samsung's probably going to have some free capacity available, maybe second half of 2013/2014, and maybe they're starting to engage more of your traditional customer base. Are you hearing that back from your customers that the potential that they may be being offered capacity elsewhere?

**Elizabeth Sun** - TSMC - Director of Corporate Communications

The question is Samsung may have extra or free capacity at 28 nanometers starting 2013 and '14. Have we heard anything from our customers that Samsung has approached them and want to engage them?

**Morris Chang** - TSMC - Chairman & CEO

So they will use that excess capacity to invade our customers, is that your question?

**Steven Pelayo** - HSBC - Analyst

That's my query, yes.

**Morris Chang** - TSMC - Chairman & CEO

Well, if I were Samsung, I would certainly do it. So it's a question of whether we can prevent them from successfully doing it. Certainly if you want me to predict the outcome, I will predict to you. But you have to wait for a while to see the final outcome. I have no doubt what the final outcome will be.

**Elizabeth Sun** - TSMC - Director of Corporate Communications

Steven, this is a very cheerful answer to your question and this is a very good ending for our today's conference and conference call. Thank you very much for attending our session and we'll see you next quarter. Thank you and goodbye.

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