

FINAL TRANSCRIPT

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TSM - Q2 2009 TSMC Earnings Conference Call

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PRESENTATION

Operator

Welcome to TSMC's 2Q '09 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. Please proceed.

Dr. Elizabeth Sun - TSMC Ltd. - CFO and VP

Thank you, Twila. Good morning and good evening, everyone. Welcome to TSMC's second quarter 2009 conference call. Joining us on the call are Dr. Morris Chang, TSMC's Chairman and Chief Executive Officer, Ms. Lora Ho, our Vice President and Chief Financial Officer, and Dr. Mark Liu, TSMC's Senior Vice President and Head of Advanced Technology Business Organization.



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The format for today's conference call will be as follows. First, Lora will summarize our operations in the second quarter and give you our guidance for the third quarter. After that Dr. Liu will report on progress we are making on the yield and ramp up of 40-nanometer technology. Then TSMC's Chairman, Dr. Chang, will provide his general remarks on the business outlook and a couple of key messages. Then we will open the floor for 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 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 17th, 2009 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 statements 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 Ltd. - CFO and VP

Thank you, Elizabeth. Good morning and good evening to everyone. Welcome to our second quarter 2009 earnings conference call. First, I will go over the highlights of our second quarter. Then I will give you the outlook for the third quarter 2009. Please refer to the quarterly financial summary slides on our website. All dollar figures are in NT dollars unless otherwise stated.

First, highlight on the second quarter and on page four, semiconductor has bottomed in the first quarter. As a result of improved demand outlook customers launching new products and inventory restocking, second quarter saw a sharp rebound. Therefore, our second quarter results have experienced significant increase no matter in sales, margins and profits.

Net sales were TWD74.21 billion, 87.9% increase over last quarter. However, it did not go back to last year's second quarter's level and has still declined 15.8% year-over-year.

Second quarter's wafer shipments were 1.97 million 8 inch equivalent wafers, representing 121 sequential -- 121% sequential growth but 15.4% decline year-over-year.

Gross margin and operating margin were 46.2% and 33.9% respectively. Comparing with last quarter it was an increase of 27.3 percentage points and 30.8 percentage points respectively. Comparing with year ago quarter gross margin increased slightly but operating margin declined slightly.

EPS for second quarter '09 was TWD0.94 or ROE went back to 21.4% from prior quarter's 1.3%.

Let's take a closer look at our income statements. The sequential (inaudible) in gross margin was primarily due to increased utilization rate as a result of higher production activities. The sequential increase in operating expenses was primarily due to increasing 32, 28 and 22-nanometer R&D activities and more effective space for operating expenses and higher profit sharing expense as a result of better profitability in the second quarter.

Non-operating income increased by TWD800 million mainly due to higher disposal gain of financial assets and the receding litigation compensation, partially offset by lower interest income.

For long-term investments, as a result of improved business activities among invested companies, in the second quarter it was TWD110 million of investment income comparing with TWD810 million of investment loss in the prior quarter.



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For net margin it was 32.9% representing 29 percentage point increase from last quarter's 3.9 and 0.3 percentage point increase for year ago quarter.

On page six since our gross margin has changed significantly in the past two quarters, I would like to elaborate what causes the changes, both on sequential and year-over-year basis. On sequential basis gross margin increased 27 percentage points, primarily due to a sharp increase in utilization rate. That accounted for the 48 percentage points for gross margin improvements.

This improvement was partially offset by several factors. First, the percentage of non-wafer related business, mainly [MOS] and testing business over total sales in the first quarter was much higher than second quarter or at any other quarter under a normal business condition. Under normal business conditions non-wafer related business accounts 10% to 12% of TSMC total sales.

However, in the first quarter since TSMC's wafer business declined significantly but the non-wafer related business did not decline so much. The percentage of non-wafer related business over total sales climbed up to nearly 20% instead but in second quarter the percentage of non-wafer related business has returned to normal level. Since non-wafer related business has enjoyed a higher gross margin, the lower level in second quarter has resulted in negative impact to gross margin on a sequential basis.

Other offsetting factors include one-time item in cost, increase in employee profit sharing, impact of inventory valuations and appreciation of NT dollar. On year-over-year basis gross margin increased 0.6 percentage points. The increase was primarily due to NT dollar more than 8% depreciation over the past year, which represented 3.7 percentage point contribution to year-over-year gross margin improvement. However, that increase was offset by lower utilization rates compared with year ago quarter, which resulted in negative 4.1 percentage point impact to gross margin.

Other offsetting factors including impact on inventory valuations and a one-time cost reduction. In this table one may tell it is volatile -- in this volatile business environment our [structured] profitability, which is measured by our standard gross margin, has not changed significantly. Though wafer price continued to decline, our efforts in control costs have offset the impact from price declines.

Page seven, now let's examine our revenue by applications. Across the board wafer sales increased sequentially. It was an increase of 100%, 128% and 99% Q-over-Q for communications, computers and consumer applications respectively. Overall, revenue from communications, computer and consumer applications accounted for 45%, 28% and 21% of our wafer sales in the second quarter '09.

In terms of revenue by technology total wafer sales from advanced technology remain at the same level as last quarter accounting for 65% of total wafer sales. For 40-nanometer it exceeded 1% of total wafer sales in the second quarter. We forecast it will experience significant growth in the second half of this year. For 65-nanometer revenue contribution over total wafer sales increased five percentage points from first quarter, while 90-nanometer and 0.13-micron decreased two percentage points and three percentage points respectively.

I am on page nine. Now let's move on balance sheet and cash flow statements. We ended second quarter with TWD247 billion in cash and short-term investments, TWD17 billion more than last quarter. Due to increasing business activities, both accounts receivable and inventory increased on a sequential basis. Accounts receivable increased TWD20 billion to TWD33 billion, and the inventory increased TWD4 billion to TWD19 billion.

Accounts receivable days and inventory turnover days were lower than last quarter representing 30 and 42 days respectively.

For current quarter liabilities it has sequentially increased by TWD84 billion. This was primarily due to the accruals payable of cash dividends to be distributed in August. Our balance sheet remained very strong.



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In cash flow, total cash flow, total cash inflow as generated by operating activities was TWD24.5 billion, slightly lower than prior quarter, although net income increased significantly. This was mainly due to higher business activities in the second quarter, which resulted in substantial increase of accounts receivable and therefore a large increase in working capital.

Capital expenditure was TWD7.4 billion, increased from prior quarter. In sum, our ending cash balance was TWD240 million -- TWD240 billion, TWD16 billion more than prior quarter. Free cash flow was TWD17 billion, TWD4 billion lower than prior quarter.

On page 11 let's turn to capacity and CapEx. Total installed capacity was about 2.5 million 8 inch equivalent wafers in the second quarter. For 2009 overall capacity is forecast to be around 9.94 million 8-inch equivalent wafers, a 6% increase over 2008. Advanced technology capacity is forecast to increase by 10% year-over-year reaching 41% of total capacity in 2009.

For capital expenditure we spent USD224 million during the second quarter and USD390 million in year-to-date. Our CapEx in 2009 will increase from last year. Around 80% of the money will be spent for 40 and 65 capacity increase, both in the front end and also in the back end process.

The large majority of the spending is second half loaded in order to meet increasing demand from leading edge technology in the second half of this year and also the next year.

I am now -- please go to page 13. Now let me give you our outlook for the third quarter of 2009. Both our macro economic forecast and the booking trend indicate that we will have a good third quarter based on current business expectations and a forecast exchange rate of 32.84 we expect our consolidated revenue in third quarter of 2009 to come in between TWD88 billion and TWD90 billion.

In terms of margins we expect our third quarter gross margin to be between 46.5% and 48.5%, operating profit margin to be between 35% and 37%. 2009 capital expenditure will be around USD2.3 billion.

This concludes my remarks today. Now I will turn the call to Dr. Liu, Mark Liu, for his remarks on 40-nanometer.

Dr. Mark Liu - TSMC Ltd. - Senior VP, Head of Advanced Technology Business Organization

Good evening. This is Mark Liu. I would like to give you a summary of the work we have done on the 40-nanometer. First, I am pleased to tell you that we made a major improvement in the 40-nanometer yield in the past quarter. Compared with three months ago our average yield has approximately doubled during this period of time. And our engineers in Fab 12 has been made a detailed capitalization of the process technology, opened up the process window and we also identified several tiny defects that were not be able to observed using the metrology before. And these yields have been shown up for our customers and today we are already in the ramp up stage.

TSMC indeed encountered initial difficulty in the 40-nanometer technology. We have leading the industry defined the 40-nanometer technology as an industry standard in this generation. However, this generation indeed we aggressively moved the feature size 1.5 generations from 65 to 40 in two years.

And also, we introduced two major material and one major lithography change. The lithography change we changed from the dry lithography to immersion lithography and the diametric we introduced ELK, extreme low key material, for the diametric for interconnect. And also, we introduced a new material of silicon germanium in its transistors to increase the transistor mobility and, therefore, its speed.

These new changes compared with the 65-nanometer where we have only the 193-nanometer lithography change has been a major one. Therefore, we have work encountered many initial issues. In the past quarter I personally also enlisted three Directors from among the TSMC's R&D resources. Two of them are module directors and one of integration directors. Along with their



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resources, we with factory engineers we study in more further detail about the fundamental module design and we made improvements since then.

We have increased the yield in the past quarter and we currently several activities already are in place to move the yield forward. We expect the defect density reduction pace will continue through September and currently we are confident that we can meet the August yield target for our customers and we are working on the implementation of the module improvement to meet the September yield target.

The factory currently is focused on the ramping. In the meantime, we opened up the phase four facility and this opened a space for the fast pace 40-nanometer ramp up. Last month we had output 6,000 wafer 12 inch for 40-nanometer and this quarter we expect to output 30,000 40-nanometer 12 inch wafers. And going forward we are looking review our technology development and the transfer methodology to cope with this increasing complexity and we believe that several actions already in place for 32-nanometer to improve the learning curve for the future technologies.

Above is my report. If you have questions we can answer you later.

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Good morning. This is Morris Chang. I will give a few comments now and then we will open the floor for questions.

First, on end market demand and semiconductor industry outlook the major electronics system shipment in test in second quarter was better or close to seasonal and, as a result, we are raising our full-year estimates for the end equipment market. For PCs we are raising our full-year estimate from minus 8% down compared to last year to minus 4% year-on-year. For handsets we are revising the year estimate from minus 12% to minus 9%. For digital consumer electronics we are raising our full-year estimate from minus 7% to minus 4% year-on-year.

The second point, we do expect close to seasonal growth in third quarter for the SC market, that being about 9% growth from second quarter. Major electronics system shipments I expect they're to be in line or below seasonal growth in the third quarter. For PCs we expect the growth in the third quarter will plus 7%. For handsets we expect the growth to be plus 8%. For digital consumer electronics we expect the growth to be plus 7%.

Clearly we are raising the semiconductor forecast growth for the full year 2009 from minus 20% to minus 17%. We still expect the foundry sector to under perform the semiconductor market by 2 or 3 percentage points. In other words, we're expecting that the foundry market will probably be down 19% or 20% from last year.

Now for the fourth quarter our expectations have also been raised. We now expect -- we now think that even if there is a small dip, a dip from the third quarter, it will be a small one, certainly in the less than 10% range.

On supply chain inventory from the forecasts from the reports to date the inventory situation at our customers continue to get healthier in the second quarter. Most customers have reduced their inventory levels in both absolute terms and in base of inventory. At fabless customers the base of inventory are very close to the lows observed in the last several years.

For [IBM] customers the situation is more mixed and there may be some further reductions during the second half of '09. However, as you know and as Lora has pointed out just a few minutes ago, about 80% of our business is with fabless customers where we think that the days of inventory are close to the low levels, the lows that were observed in the last several years.

On technology, Dr. Liu, Mark Liu, has already commented on 40, 45-nanometer situation. Suffice it to say that much progress has been made and we expect that further progress will be made in the next few months.



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On 32, 28 we have had a major effort going for some time now and we are on track in the technology development of 32, 28. We have obtained excellent 64 megabit SRAM use and transistor performance for both poly silicon and high-K metal gate technologies. We have several customers committed the product trends to our 32G and the 28LPT technologies and new tape outs will begin in early first quarter 2010.

We also have over ten customers committed to our 28-nanometer high-K metal gate technology platforms and new tape outs will start in late 2010 and early 2011.

We have also had a large effort started on 22-nanometers for some time now and we now have a good early base line of 22-nanometer high-K metal gate transistors.

Now, on the more than more front. As you probably know, many IDMs are closing fabs. Our estimate is that over 20 fabs will be closed by IDMs this year. We plan to take full advantage of this opportunity and we are participating actively in discussions with some of the IDMs in helping them to close their fabs and transfer the business, the fab business, to us.

We are also committing considerable resources in our R&D to support the development of the relevant technologies that will be needed by those IDM customers who are planning to close their fabs.

This is the first time in four years now that I am participating in this call as the CEO and there may be questions as to whether we have a new strategy or new strategies and I think it would be incorrect to say that I have new strategies because, even as the Chairman, I had a hand in the strategy of the Company.

However, what is new is that I now have the opportunity and the first hand responsibility of pushing my thinking, my strategies, vigorously and you probably already have noticed some signs of that. We are number one, we are very, very actively increasing our R&D resources and we are trying to expand the effectiveness of our R&D resources. Mark has just remarked that in the progress that was made last quarter on 40-nanometers he had enlisted the help of several important people from R&D and had we not increased the R&D resources that kind of help would have been very hard to come by.

Now, as a percent of revenue, our R&D has been -- our R&D expenses have been running at the 6% to 7% level in past few years. Now this year it will run at about 7.8% of revenue. Although this year's revenue is low, therefore, the R&D as a percent of revenue is correspondingly high, we still expect that our R&D dollars will continue to increase into next year. Now in percentage it may not be higher than 7.8% but it will be close. I do think that R&D at 7% to 8% of revenue will be the norm in future years.

Another point you may have noticed is that we have increased our capital spending estimate from TWD1.5 billion, which we announced a few months ago, to TWD2.3 billion that Lora just announced now. Now the reason is number one, an increase in our forecast demand. Number two, we are modeling at a slightly lower utilization in order not to lose any opportunities that will come by when the capacity is pressed now. We have modeled our utilization now at a slightly lower, just a few points lower, utilization level on the advanced technologies. Now, 80% of the TWD2.3 billion will be for the advanced technologies, primarily 40-nanometer technology at this point.

All in all, I am very happy to report that the outlook has become brighter in the last few months and that our confidence in raising our momentum has also increased.

Thank you. I think that we are now open for questions.

Dr. Elizabeth Sun - TSMC Ltd. - CFO and VP

Yes this concludes our prepared statements. Operator, please open the floor for questions.



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QUESTIONS AND ANSWERS

Operator

(Operator Instructions). Please limit your questions to two at a time with one follow-up to allow all participants an opportunity to ask questions to the Management members. Your first question comes from the line of Randy Abrams with Credit Suisse.

Randy Abrams - Credit Suisse - Analyst

This afternoon, Morris, you laid out that new ventures could potentially be TWD10 billion to TWD15 billion opportunity for things like solar and LED and other ventures. Could you talk about your investment commitment or a CapEx plan? And do you expect to go through aggressive acquisition strategy or do the growth organically?

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

This is capital plan on new businesses?

Randy Abrams - Credit Suisse - Analyst

Yes capital plan and acquisition strategy.

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Well, we really don't have concrete plans at this point. Recall that Rick Tsai has been in his new job as pushing new businesses and forming new businesses for only about a month and a half and he has been -- during this period he has been actively looking and studying both the solar and the LED fields but primarily the solar cell field.

Now, in fact, I may say that he has requested TWD50 million of capital just as a starter and without any specific purpose in mind yet and I have already approved that. Of course, my approval is subject to the Board's confirmation of my approval but we don't have -- this is just for, the TWD50 million is just for a starter and it's also at this point for unspecified purposes. And for unidentified purposes but we want to have it ready just in case we have any opportunity. This is an exploratory effort.

Now, I do expect that in the future the new businesses will include acquisitions but, again, it's too early to identify any concrete projects at this point.

Randy Abrams - Credit Suisse - Analyst

Okay and there's been a bit of worming in cross straight relationships between China and Taiwan. Could you talk about your perspective on if some of the restrictions on below 0.18 and 12 inch are loosened do you have the motivation or incentive to expand in China or is your view to prioritize in mega fabs in Taiwan and so China will still be pretty modest in terms of investment?

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

I -- we have very ambitious plans for the Chinese market, not so much as in manufacturing base but we have very ambitious plans for expanding our sales in China. Now if a manufacturing if -- or we do have a manufacturing base there already, of course. It's relatively mainstream mature technology and also it's 8 inch fab. Therefore, the new direction that the government, the

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Taiwan government, has already given, which of course will allow basically M minus one or M minus two generation technologies in China, I think is a very welcome move by us. We welcome that very much.

Now, as I said, we have ambitious plans to expand our sales in China and if increasing our manufacturing activity in China accompanies that sales expansion purpose, then we will do it.

Randy Abrams - *Credit Suisse - Analyst*

Okay thank you. I'll step back in queue.

Operator

Bhavin Shah, JP Morgan.

Bhavin Shah - *JP Morgan - Analyst*

Yes, Mr. Chairman, I just have one question on the regular strategy of targeting slightly lower utilization and also the comment you made about visibly trying to capture most of the opportunities that you have. What does it mean for pricing? I guess 12 months ago or something at the SMC where you laid out a strategy of trying to maintain pricing, obviously through the downturn that was tough but going forward can you give us some comments on the pricing strategy?

Dr. Morris Chang - *TSMC Ltd. - Chairman and Chief Executive Officer*

Yes we do have a pricing strategy and, in fact, you brought up the effort we made 12 months ago to make to keep the pricing more stable in this year. Even though it did not achieve the complete objective but we did manage to make the pricing more stable. If one compares the price drops, not only this year but also last year.

Remember we announced -- actually we were even before we announced our attempt to make the pricing more stable this year, we were already engaged in effort to keep the pricing more stable last year. So, if you look at the price drop on a technology by technology point of view, then you will -- I found that our price drop was in the over 10% a year range. It was different-by-technology but overall it was 13%, 14%, 15% a year in '05, '06, and in '07. But in '08, last year, and '09, this year, the pricing drop on a technology-by-technology and node-by-node basis has decreased to 10% or 11%, has decreased considerably in the last year and a half.

And we have a long-term roadmap of pricing. So let me just say that our return on equity goal is unaltered and it's, in fact, I consider to be unalterable. It's above 20% return on equity and the expansion in capacity I believe will actually help our profitability. Otherwise, I wouldn't be even doing it.

Bhavin Shah - *JP Morgan - Analyst*

And just one more question and then I'll pass it on -- if you look at Q4 with a target of driven 10% revenues from 40 and 45, could you say if the bulk of it will be 45 or will be a more even split?

Dr. Morris Chang - *TSMC Ltd. - Chairman and Chief Executive Officer*

I think the bulk of it will be 40 and Mark is nodding his head to agree with me. The bulk of it will be 40.

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Operator

Bill Lu, Morgan Stanley.

Bill Lu - Morgan Stanley - Analyst

I just have a couple of follow-up questions from this afternoon. Dr. Chang, you have said earlier today that CapEx requirement for 40-nanometers is roughly [TWD60 million] per 1,000 wafers a month.

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Yes.

Bill Lu - Morgan Stanley - Analyst

Just as a point of reference, could you talk about how that compares with 65-nanometers when that was at roughly the same stage?

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

65-nanometers was about TWD50 million per 1,000 wafers per month.

Bill Lu - Morgan Stanley - Analyst

Okay so, you know, this increase of roughly 20%, you know, I guess with 40-nanometer yield being a little bit lower now, costs being a little bit higher, are we going to price accordingly or how do we recuperate that?

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

They right now at the profitability of 40-nanometer is certainly not what we expected to be in the long-term. This is a start-up base of 40-nanometers and they yield lower than where we want it so the profitability is certainly not nearly as good as that on 65 or others or other nodes, but we do expect that when the yield, when the use improves, as I know they will improve, and as yields have always improved along the experience curve in each and every node in the past, then I think that the 40-nanometer profitability will be going up to the standard that we expect, the standard of the 65 and 90 and the whatnots.

Bill Lu - Morgan Stanley - Analyst

Okay thank you and then just a question for Lora, with the increase in capital spending can you give us some guidance on depreciation for the rest of this year as well as for 2010 please? Thank you.

Lora Ho - TSMC Ltd. - CFO and VP

For this year our depreciation with the CapEx guidance will remain the same as last year, which will be around TWD81 billion. In terms of 2010, although we don't have a CapEx expenditure forecast at this moment, but I believe if we have a number it will be very similar to '09 or slightly lower with the depreciation coming down from 12 inch.

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Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Well, actually I have kept that in mind all the time. This is Morris Chang. At the increase, the CapEx that that we announced just today, our CapEx is still below our depreciation this year.

Operator

Dan Heyler, Bank of America.

Dan Heyler - Bank of America - Analyst

Yes I had just two questions, the first one for Dr. Chang regarding ROE, where you've been sticking to a 20% ROE for quite some time. However, if we were to look at your return on invested capital, it has been increasing in a significant fashion over the last six years since really '01. It's been on a long-term uptrend. The ROE apparently is being held down by your large cash balance and cash generation. I'm, of course, following CapEx to sales. I'm wondering if you could give a more relevant metric in terms of where the return on invested capital could go over the next few years? Will it be on an uptrend or do you anticipate that it may level off?

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

We have looked at the -- Lora, I think perhaps you can give some color to that question and we have actually -- Dan, we have -- we internally we looked at return on invested capital all the time. Now, but as for outside communication I have thought that the return on equity parameter is perhaps more easily understandable and I think it's more easily benchmarkable but internally we have looked at the return on invested capital all the time now.

And, Lora, you want to add something to this?

Lora Ho - TSMC Ltd. - CFO and VP

Yes, Dan, if I can give you 2007 and 2008 as a reference, in 2008 our ROE for the whole year was 20.7% and our model shows the ROIC was 35%. For 2007 we saw ROE of 21.9%. Our ROE was 35.4% so you can see there's around 14 percentage point difference between the two. Of course, in the future as we gradually manage the capital with the dividend payout but I think the ROE, ROIC target remember is similar if the Company performance is similar.

Dan Heyler - Bank of America - Analyst

Okay and then thanks and then the follow-up on that would be from a driver ROIC standpoint, I'm wondering what your through the cycle utilization targets are, whether or not those have changed, that you have been phenomenal at bringing up your through the cycle utilization from mid 80s and to mid 90s. Given the emphasis now to give a bit more leeway and flexibility on advanced technologies, would there be any change to your target on a through the cycle basis?

Lora Ho - TSMC Ltd. - CFO and VP

Dan, there's two parts of the ROIC. Number one being the profit margins, the other one is asset productivity, so profit margin as we have talked a long time that the structural profitability is very important for us, for anything. And another node drives ROIC's to make sure we have very high asset productivity so the ramping speed of each node is very important to drive the Company wide ROIC. That remains to be our focus in the future for every node we load into a new technology.

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Dan Heyler - Bank of America - Analyst

Okay but what about average utilization? Do you want to give a target there?

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Average [utilization] did you say?

Dan Heyler - Bank of America - Analyst

Yes.

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Yes, yes let me -- all right. The average, the model utilization in the past was 100% and, as I said, we are modeling at a slightly lower level and by that I mean 95%, 96%.

Dan Heyler - Bank of America - Analyst

Okay and that won't change your structural profitability target. We can still see that go up?

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

No it does not change our profitability target. Now the thing is that while we -- in the past we were modeling our utilization at 100%. We always use a different utilization model, utilization number, to calculate our ROIC and, as you very well know, it -- utilization does fluctuate and it doesn't matter really where you try to model it, it fluctuates from time to time.

And now in the past few years' experience we found that we did lose more business because we were out of capacity. We did lose more profit because we lost the business when we were out of capacity. Then we made profit when the capacity was full, so you've got to factor all those into consideration and my judgment is that by having a little more capacity available, a few percentage points more capacity available, we will gain more and our actual ROIC will be higher as a result.

I don't know whether I have convinced you or not because I know this is an issue that involves both intuitive judgment and just a mathematical calculations, Dan.

Dan Heyler - Bank of America - Analyst

Yes assuming we can keep the customers and retain customers you would be the best judgment of knowing whether or not they left on lack of capacity. It certainly seems as though the dual sourcing picks up when your capacity hits 95% so --

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Now we are on the same wave length, Dan.



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Dan Heyler - Bank of America - Analyst

Thank you.

Operator

Pranab Sarmah, Daiwa Securities.

Pranab Sarmah - Daiwa Securities - Analyst

My first question is a bit on that capital intensity side. Could you give us some color like whether your capital intensity will ramp, go up to 25% in the modeling purposes on long-term basis and secondly, whether it will be below somehow always try to manage with your depreciation?

Lora Ho - TSMC Ltd. - CFO and VP

Pranab, your question is all capital intensity. We did --

Pranab Sarmah - Daiwa Securities - Analyst

Going up a bit this year and we are to 25%, 26% level and whether are you going to maintain at the same level going forward?

Lora Ho - TSMC Ltd. - CFO and VP

Going forward we don't know yet but with [Chairman] made his comment I think all capital intensity is more likely to be above 20% than lower than 20% going forward.

Pranab Sarmah - Daiwa Securities - Analyst

And a bit of color on the budget for 2009, what should we put for modeling purposes, R&D or in the budget, sorry.

Lora Ho - TSMC Ltd. - CFO and VP

R&D budget? R&D budget you're asking R&D budget?

Pranab Sarmah - Daiwa Securities - Analyst

Yes for 2009.

Lora Ho - TSMC Ltd. - CFO and VP

For 2009 we actually in R&D expense it will be account for 7.8% of total revenue this year.

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Pranab Sarmah - Daiwa Securities - Analyst

And so I'll cancel that out from revenue then. Anyway, and last one is on that competition from IBM Club, especially, Chairman, would you be able to make some comments at 32-nanometer or 28-nanometer on how you are feeling competition from IBM Club and whether any difference on your technology versus their technology?

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Any difference between the IBM 28, 32 and our 28, 32, is that your question?

Pranab Sarmah - Daiwa Securities - Analyst

Yes, sir.

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Well, perhaps, Mark, you should answer that question.

Dr. Mark Liu - TSMC Ltd. - Senior VP, Head of Advanced Technology Business Organization

Yes we are. We have developed the -- we are approaching the 32, 28 from both approach in 2000 and -- in the end of 2009 we will introduce 32-nanometer with silicon node to nitrite gate. In 2010, end of 2010, we will introduce the high-K metal gate on 28-nanometer. So we think the -- our technology is competitive with IBM's technology but most importantly, the 32-nanometer customers are already engaged. Design is already ongoing. On our 28-nanometer high-K metal gate we have already ten customers engaged in the designs, so we expect for these customers engagements and the future business approach we are on the same track, on the right track.

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Well, I think he is asking whether there is any technology.

Pranab Sarmah - Daiwa Securities - Analyst

Last -- gate last or gate first are you going to put in on 28-nanometer high-K metal gate?

Dr. Mark Liu - TSMC Ltd. - Senior VP, Head of Advanced Technology Business Organization

Yes we have a different architecture in terms of the gate first and gate last.

Pranab Sarmah - Daiwa Securities - Analyst

Are you going to use the both technologies or only one technology?

Dr. Mark Liu - TSMC Ltd. - Senior VP, Head of Advanced Technology Business Organization

We -- I beg your pardon?

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Pranab Sarmah - *Daiwa Securities - Analyst*

Are you using, would you use the gate last process or gate first process

Dr. Mark Liu - *TSMC Ltd. - Senior VP, Head of Advanced Technology Business Organization*

We will use the gate last.

Operator

Mehdi Hosseini, FBR.

Mehdi Hosseini - *Friedman, Billings, Ramsey Group, Inc. - Analyst*

As a follow-up to the previous commentary regarding leading edge technology, I want to hear Chairman Chang's comment on your customers affordability to pay for the 32 and the 28-nanometer. Do you think that collectively as more fabs are taken out do you think that IDMs and the fabless companies will be able to pay enough so that you will realize return on investment? And I have a follow-up.

Dr. Morris Chang - *TSMC Ltd. - Chairman and Chief Executive Officer*

Well, your question was it doesn't seem to me that their ability to pay for 32, 28 has anything to do with their intention to close their legacy fabs. Was that your question, the connection?

Mehdi Hosseini - *Friedman, Billings, Ramsey Group, Inc. - Analyst*

Well, that was not necessarily. Let me rephrase my question. Do you think that your customers collectively, would they be able to afford to pay for 32 and 28-nanometers?

Dr. Morris Chang - *TSMC Ltd. - Chairman and Chief Executive Officer*

Well, now we haven't even priced 32, 28 yet or I guess we have in some cases. I'm sorry yes. I take back what I just said. We in some cases we have priced 32, 28 and clearly those customers that received the prices indicated that they were able to afford it. And I think that that's primarily because our price was very rational. It was -- it followed the old paradigm of the increased value of 32, 28 to the customers and we, in fact, split the value, the added value, with the customer.

Mehdi Hosseini - *Friedman, Billings, Ramsey Group, Inc. - Analyst*

And I want to explore the non-wafer business, especially solar and LED. Is this -- you are already committed TWD50 million. Is this -- are we just in a discovery or evaluation phase or have you already set your mind on that's trying to increase the non-wafer business to more than 20% in the long-term?

Dr. Morris Chang - *TSMC Ltd. - Chairman and Chief Executive Officer*

We are in the evaluation and the study phase. I think that we have passed beyond the discovery phase. We are in the evaluation and the study phase.



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Mehdi Hosseini - *Friedman, Billings, Ramsey Group, Inc. - Analyst*

Okay and would it be fair to say that maybe this is an attempt to use some of the TSMC's older fabs, try to find a different application for either solar or LED?

Dr. Morris Chang - *TSMC Ltd. - Chairman and Chief Executive Officer*

No that's not the using old fabs may be a byproduct of this effort of the new businesses but it's not the reason at all. It's not the motivation at all.

Operator

Donald Lu, Goldman Sachs.

Donald Lu - *Goldman Sachs - Analyst*

Yes I have a question on the one of the gross margin analysis on the presentation. There is a line there called "Declined standard margin." I remember Lora has mentioned that is basically the gross margin at the same utilization rate. I just wanted to confirm whether that's the case.

Lora Ho - *TSMC Ltd. - CFO and VP*

Yes, Donald, the standard margin means the margin at an 85% utilization rate. You are right.

Donald Lu - *Goldman Sachs - Analyst*

Okay so that basically this chart shows even with the balance earned the margin structure basically remains flat.

Lora Ho - *TSMC Ltd. - CFO and VP*

Yes you can see the breakdown of that standard margin. There's a price, a cost and the mix three factors. The price declines offset by the cost improvement, basically for the Q-over-Q and year-over-year numbers.

Donald Lu - *Goldman Sachs - Analyst*

Sure, sure. Yes I have another question for Dr. Chang here. I think just in the last week it seems like every fab, every foundry is talking about raising CapEx, sometimes quite aggressively, and then you have a new competitor building a new fab and I mean would that mean the pricing erosion going forward, especially for the leading edge technology, would get worse?

Dr. Morris Chang - *TSMC Ltd. - Chairman and Chief Executive Officer*

Well, Donald, the new foundry, Global Foundry's, their new fab is for 28, 32 and the increased capital spending of ours is on primarily on 40, 45, so we are not starting a capacity war and, therefore, a price war at all. Now Global Foundry I think is building their new fab and I think that relatively speaking I think the size is still reasonably modest by our standards. It's a, as I understand it, it's a 28,000 wafers per month fab of the 28, 32-nanometer variety and they will be completed in three years and they have certainly thrown the first stake on the ground on 28, 32-nanometer capacity and we have really not even started to do it yet.



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We have not started to do -- to build 28, 32-nanometer capacity seriously yet. We only have a sort of an R&D line in place for 28, 32.

And so I think that I don't worry about the Global Foundry's fab on prices. At this point I don't. Certainly it will not have any impact on the 40, 45-nanometer pricing nor will it have any impact on the even older technology increasing capital. I believe that most of their increase is also on 40, 45 and now the ratio of their increase we keep in mind ratio of capacity and we keep track of that and I think that the -- at this point I think that the ratio is still a rational one.

Donald Lu - *Goldman Sachs - Analyst*

Great.

Operator

Steven Pelayo, HSBC.

Steven Pelayo - *HSBC - Analyst*

Dr. Chang, in the afternoon you spoke about the competition being committed to capacity and closing off their retreat. Does this change your thinking in the medium and longer term relative to pricing, especially in light of your efforts to try to stabilize pricing trends over the past year or so?

Dr. Morris Chang - *TSMC Ltd. - Chairman and Chief Executive Officer*

IBM closed fabs, will it change pricing? Well, I think that it will certainly -- it may have an effect and I emphasize that it may have an effect on legacy technology pricing on mainstream, what we call mainstream technology pricing, which is, you know, 8 inch fab, 0.13-microns and upwards.

Now the reason it will have an effect is that obviously the IBMs do not view that their manufacturing cost is competitive and it's a burden with them and they want the foundries to take over so now I believe that the first foundry that they look at is us, is TSMC, and now only if they cannot find an attractive deal from us then they go around and ask other foundries. So I don't think that any auction has started yet on this thing. So no, I think it's a situation. It's an opportunity that's also has some business risks involved and we are going, as I said, we are going to participate in it actively but we also keep in mind that our ROE goal of 20% or above is unalterable.

Steven Pelayo - *HSBC - Analyst*

Okay thank you. One more question is you also spoke in the afternoon about the foundry market in 2010 being a make up year and that foundries will out perform the overall semiconductor market and then perhaps in 2011 exceeding the 2008 peak. Foundry out performance or under performance is obviously due to inventory builds or just increased chip outsourcing. I guess I am trying to quantify the out performance here or the potential out performance. I realize it's tough to figure out the inventory build or purge side but have you thought about or can you help me understand the quantifying just what increased outsourcing, that dollar opportunity could mean in 2010 and 2011?

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Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

I'm sorry. I didn't quite understand the question. I think you were saying -- you were talking about the out performance of foundry and you pointed out that the out perform any out performance of the foundry sector is due to increased outsourcing and I agree with that. I agree with that but then what's the question?

Steven Pelayo - HSBC - Analyst

I was saying that any out performance --

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Oh quantify, quantify, quantify. Well, we just go through talking about IBM's trying to close down their old fabs. That I think is hard to quantify because if the IDMs -- I'm sorry, IBMs. If the IBMs cannot find an attractive alternative to their own fabs, then they will not unload their fabs and we will have less outsourcing so -- but regardless, I think that outsourcing will increase and that is why I think that at least in the mid term future I think the foundry sector will tend to out perform the semiconductor market, at least in the mid term future, which is I would say at least five years. I would think that the foundry segment will out perform the semiconductor market.

As for -- as far as next year is concerned, I think that the foundry will out perform the semiconductor market for both the increased outsourcing reason and also we have something to make up because I mean this year the foundry segment will under perform the semiconductor market and that's because of the de-stocking that happened in the first quarter. I pointed out this afternoon that in the first quarter the semiconductor market dropped 30% year-over-year, first quarter of this year compared to first quarter of last year, where as the foundry sector dropped more than 50%. And with that kind of a start the whole year record will be under performance by the foundry sector versus the whole semiconductor market so that's something that the foundry sector will make up next year.

Steven Pelayo - HSBC - Analyst

Okay if I could just maybe follow up one last question here really presenting it a different way, if there were about 20 fabs closed this year by IDMs, do you have any idea what those revenues generated by those fabs may have represented so I could try to get an idea for the potential for foundries to gain that?

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

I don't think -- well, let me say that the 20 fabs by this our estimate and some of them are small, some of them mid sized and some of them are very small but I would say that in total I probably wouldn't consider them to be a big deal if I may describe it that way. Because most of them, as I said, are mid sized to small and some of them are even 6 inch fabs, while many of them are indeed 8 inch fabs, so in terms of revenue I would say that they are not a big deal for the total foundry sector. They are -- they will be rather important for the mature technology, the legacy technology part of the foundry business.

Dr. Elizabeth Sun - TSMC Ltd. - CFO and VP

Operator, I think in the interest of time we will only allow one caller to raise his or her question.

Operator

C.J. Muse, Barclays Capital.

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C.J. Muse - Barclays Capital - Analyst

I guess first question, Dr. Chang, you talked about TWD60 million revenue opportunity at 40-nanometer per 1,000 and TWD50 million at 1,000 65-nanometer. I guess that increased TWD10 million spend, can you share where that's coming from? I'm assuming it's about TWD3 million to TWD4 million on immersion. Where else out of that TWD10 million do you see that incremental spend?

Dr. Morris Chang - TSMC Ltd. - Chairman and Chief Executive Officer

Oh, TWD50 million per 1,000 or TWD50 million for 65 and TWD60 million for the 45. Mark, would you?

Dr. Mark Liu - TSMC Ltd. - Senior VP, Head of Advanced Technology Business Organization

Yes half of this is coming from the transistor complexity with the sitting in germanium and strain layers. They have multiple thin films involved in this integrated device. While the other is lithography and the back end will be similar than previous generations.

C.J. Muse - Barclays Capital - Analyst

And how about the intensity of process control? Is that part of the transistor complexity in an uptick there?

Dr. Mark Liu - TSMC Ltd. - Senior VP, Head of Advanced Technology Business Organization

Can you tell me your question again?

C.J. Muse - Barclays Capital - Analyst

Sorry. In terms of inspection metrology, given the transistor complexity, is that part of that spend or where exactly is it coming from?

Dr. Mark Liu - TSMC Ltd. - Senior VP, Head of Advanced Technology Business Organization

Yes the metrology is a part of those spends.

C.J. Muse - Barclays Capital - Analyst

Okay helpful. And then I guess a follow-up for Lora, on the -- I think it was around your depreciation comments and I am not sure whether you were referring to CapEx or depreciation but I thought I heard you said 2010 will be flatter lower. Was that depreciation or CapEx?

Lora Ho - TSMC Ltd. - CFO and VP

Depreciation.

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C.J. Muse - Barclays Capital - Analyst

Okay great and then I guess the last question for Mark Liu, I appreciate your comments on the 40-nanometer yield challenges. I was wondering if you could elaborate on your defect reduction methodology, where the problems lie and how you are resolving them and what gives you the confidence you can get the yields that you're targeting in September?

Dr. Mark Liu - TSMC Ltd. - Senior VP, Head of Advanced Technology Business Organization

Okay in this generation what we find what's important that design layout styles because in our products we do see the design has a -- because a different product has a different yield showing and it ranges quite widely and we find as for those products that yields low is mainly because of the design layout dependence. What do we call design for manufacturing? That is in plain English is when the design cannot be completely described by the design rule, we have an additional algorithm software to optimize the layout so that it gets the best yield.

In terms of the defects source is the metrology is important. We find that only the leading edge metrology can detect tiny defects and that we come upon with several new mode of defect that we were just able to detect and removed.

Dr. Elizabeth Sun - TSMC Ltd. - CFO and VP

Thank you for your participation. We are looking forward to talking to you next quarter. Wish you have a good day and good evening. Bye, bye.

Operator

Before we conclude TSMC's 2Q '09 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 now disconnect. Good day.

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