



Conference Call Transcript

TSM - Q4 2006 TSMC Earnings Conference Call

Event Date/Time: Jan. 25. 2007 / 9:00PM HKT

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PRESENTATION

Operator

Welcome to TSMC's fourth quarter 2006 results webcast conference call. Today's event is chaired by Ms. Lora Ho, Chief Financial Officer and Vice President, and Dr. Rick Tsai, Chief Executive Officer and President. This conference call is being webcast live via the TSMC website at www.tsmc.com and only in audio mode. [Operator Instructions] I would now like to turn the conference over to Dr. Elizabeth Sun, TSMC's head of Investor Relations for the cautionary statement before the main presentation by Ms. Ho and Dr. Tsai.

Elizabeth Sun - TSMC - Head of Investor Relations

Good morning and good evening to all participants. This is Elizabeth Sun, Head of Investor Relations for TSMC. Before we begin, I would like to state that the management's comments about TSMC's current expectations made during this conference call and forward-looking statements subject to significant risks and uncertainties, and that actual results may 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 20, 2006, and such other

documents as TSMC may file with or submit to the SEC from time to time. Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events, or otherwise.

And now I would like to turn the conference call over to Ms. Lora Ho, our Chief Financial Officer and Vice President.

Lora Ho - TSMC - VP, CFO

Thank you, Elizabeth. Good morning and good evening to everyone. Welcome to our fourth quarter 2006 earnings conference call. I will start today's call with highlights from our fourth quarter results and then give you an overview of our expectations for the first quarter of 2007. Please also refer to the corporate financial summaries line on our website.

All dollar figures are in NT\$ unless otherwise stated.

With that, let's start with slide number 5. Total revenue for the quarter was NT\$75 billion down 5% year-over-year and down 9% sequentially. On a quarter-over-quarter basis as a result of industry corrections, revenue from consumer, communications, and computer applications declined by 31%, 17%, and 2%, respectively.

In terms of revenue by technology, revenue for advanced technologies accounted for 48% of wafer revenues with 90 nanometer accounting for 22% and 65 nanometer approaching 1% of total wafer sales.

Gross margin reached a midpoint of our guidance at 46% for the quarter, 3.9 percentage points lower than in the previous quarter mainly due to lower capacity utilization.

Total operating expenses in the fourth quarter were slightly lower than that of the previous quarter mostly due to reduction in 65-related expenditure as we enter into the volume production for 65-nanometer.

In addition, G&A expenses also declined quarter-over-quarter, mainly due to the reduction of fab opening expense for fab-14, phase 2, which commenced commercially production in the fourth quarter.

Operating margin was 36.6% for the fourth quarter '06, close to the high end of our guidance. Diluted EPS were NT\$1.08, down 18% year-over-year and down 14% quarter-over-quarter.

I will leave most of the balance sheet and cash flow items for you to review. However, let me make a few comments.

TSMC continues to generate some cash flow, free cash flow from our operations. Cash generated from operations was NT\$53 billion in quarter, and we spent NT\$18 billion in capex. As a result, we ended the quarter with NT\$195 billion total cash in marketable securities, up NT\$31 billion from Q3.

On a Q-over-Q basis, our accounts receivable turnover days were 43 days, flat from the previous quarter. Our inventory turnover days increased by two days to reach 50 days.

Now let me turn to Kpcs and capacity. Total in-store capacity for the fourth quarter was NT\$1.9 million 8-inch equivalent wafers in line with our previous expectations. The full year 2006 capacity was slightly above NT\$7 million 8-inch equivalent wafers, an 18.6% increase over 2006. We expect our first quarter 2007 capacity to be slightly below 1.98 million pieces, or a 1.7 sequential decline due to shorter working days and some fab -- undertake some [unintelligible].

Also, year 2006 Kpcs totaled US\$2.5 million, slightly below the total US\$2.6 million that we had guided in the previous quarter.

Page 10 to page 13 of the slides break down our sales by technology -- application, geography, and customer, which I will not go through in detail.

Finally, let me go over some of the highlights for the whole year 2006. Following a record year of 2005, we managed to post a 19% top-line growth despite an inventory adjustment period in the second half of 2005. In addition to our strong growth in top line, we continue to improve our profitability. Compared to 2005, our 2006 gross margin improved by 4.8 percentage points, and our net income and EPS improved by 36%.

2006 also marked the 9th consecutive year that TSMC delivered positive free cash flow. We generate over NT\$200 billion in operating cash flow, and we return over NT\$60 billion in cash dividend to our shareholders.

Our return on equity was 26.6% for the year 2006, 4.4 percentage points higher than 2005.

With that, let me turn to the outlook for the first quarter of '07. Based on current business and the foreign exchange rate expectations, we expect consolidated revenue to be between NT\$62 billion to NT\$64 billion. Our expectation for gross margin in the first quarter is between 37% and 39%.

The operating profit margin is exactly between 26% to 28%. Total 2007 capital expenditure will be in the range of US\$2.6 billion to US\$2.8 billion.

This concludes my remarks today. Now let me switch to Dr. Tsai for his comments.

Rick Tsai - TSMC - President, CEO

Thank you, Lora. There are many questions on near-term outlook and for the outlook for the whole year of 2007 as well as our view and position on the cash utilization stock buyback, Phillips stock sale, and the capital reduction issue.

So what I'd like to do is to -- before the formal Q&A session, I'd like to give you what I believe we're going to see at the beginning of the session.

So let me start with the near-term outlook. Obviously, from the guidance you just heard from Lora, we are having a quite challenging quarter in the first quarter of 2007, and how do we look at that, going forward? To make it clear, the management sees the first quarter being the bottom of this inventory correction period, and believe that we will see -- we will see the start of the recovery by the end of March.

Now, why do we say that? Well, we are looking at things from several different aspects. Let me start from the macro point of view. We have been watching the U.S. economy quite closely, since there has been quite a bit of uncertainty during the past half-year, also. I think what we see, so far, is the U.S. economy was doing fairly well, especially in the fourth quarter last year. It is now believed that the fourth quarter GDP growth should be better than previously expected.

Oil price has also come down quite significantly with no sign of moving up anytime soon, which certainly has given consumers a lot more expendable income.

In addition, one of the most important factors during the last half a year was the housing correction in the U.S., which, as many people feared, that may impact the consumer spending in an adverse manner. However, all the data have shown that a housing correction, although significant, has not impacted consumer spending as people had feared before.

Now, we've been also looking at several leading economic indicators, which also point to the direction that we just described; that is, the U.S. economy is in a moderate good growth mode with a low inflation risk.

Now let's, then, moving downward, let's take a look at electronics end market event, because that's where our -- the chips that we made for our customers are going. And, in short, there seems to be no major issues from the end market demand point of view for the electronic products.

The most important indicator, obviously, is the holiday season sales. The data we are seeing for the major U.S. electronic stores in the holiday season, for example, Best Buy and Circuit City, have shown their sales to have grown at a rate better than the forecast. And, of course, I also hope that the upcoming Chinese New Year will create some significant demand also.

So the important thing -- why are we talking about those two aspects? Whenever we had a correction in the business, the first thing we want to know is if the demand has significant weakening or not. And from the data we are seeing, so far, we feel comfortable to say that the demand from the end market is in reasonably good shape.

Now, so, let's move to the inventory situation. After all, that is the main reason that we're seeing a major correction starting in the fourth quarter last year and lasting into first quarter this year.

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We're going to look at the inventory situation among different segments. Let me first remark on the handset chips, since now the handset field now has, by far, the largest of volume in the market.

As we have reported in our last investor conference, that the handset chips was going into an inventory excess mode in the fourth quarter. Last year we also said we expected the inventory, which excess to last into the first quarter this year. I think, given the ensuing times, there have been much data and also the reports from different handset chip makers, which all have [grown out] this view. And we certainly, as a result, have been impacted quite severely by this inventory situation in the handset chips.

However, having discussed with several key players in the handset chip makers, I haven't talked to all of them, but I have talked to several of them. We also believe that an inventory correction situation should largely be done with after the end of this quarter.

In addition, the supply chain mainly the handset makers who are the customers of the handset chips show their inventory to be in good shape.

Now let me move to the PC segment. The PC shipment overall last year in 2006 has gone down as well as that of 2007. We all remember in the first -- early in the year, the PC shipments have been pretty slow. It started to pick up its paces in the second half of the year in the third quarter and fourth quarter. However, the shipment in the fourth quarter also grew at a significant rate -- still is below the seasonal pattern. As a result, there is certain inventory built up in the supply chain.

The customers -- our customers have been reacting, again, quite swiftly and with a very efficient PC supply chain, which was billed over the years. We believe this inventory level will go back to normal in another couple of months.

As to the consumer electronics, which are a lot more diverse because of TV, DVDs, cameras, game consoles, et cetera, et cetera, it is more difficult to forecast. However, from what we can tell, the consumer electronics seems to be going through a rather normal seasonal first quarter. We do not see particular issue there.

So, in short, from inventory level point of view, we are still going through a correction period, correction phase, in the fourth quarter and continue to be consumed in the first quarter of 2007, but we do expect the overall inventory level to go down to the normal level by the end of the quarter.

Lastly, I'd like to comment from our booking point of view. After all, these are the real numbers that will decide what will happen to our business in the short term.

We've been watching our booking numbers very closely and carefully, obviously. I will say some customers are now pulling in some of their needs -- of course, not every one of them. The situation has changed somewhat compared to, say, three months earlier -- so three months earlier, you would not find any customer who wanted to "be in anything."

We are seeing our booking to show a gradual and a steady improvement. I will say the booking now is coming in on schedule, in line with our internal forecast.

So with all those factors, we believe that, again, in the first quarter, that we are reaching our bottom. We will start to see the recovery in our business by the end of the quarter.

Now let me comment on the year 2007 overall for the semiconductor industry as a whole. In short, we see a moderate growing year for the semiconductor industry this year. The growth rate will be in the mid-single digit range. Again, why do we say that? First of all, the first quarter of the year is certainly a difficult one not only for TSMC but also for many of the semiconductor makers. I will say probably for most of the semiconductor makers, and this first quarter obviously will have some impact on the overall growth rate for the whole year.

Now, if you look at the unit shipment for the different products, in the PC area we believe that the unit shipment will grow by about 11% in 2007 compared to about 10% in year 2006. So from PC point of view, the shipment will remain -- the growth of the shipment will remain about the same compared to last year.

For handset, however, the shipment we believe will grow by about 10 to 11% this year compared to 21% growth rate of year 2006. Obviously, there is some significant difference between the two.

Of course, in 2006, the total shipment was about 955 to 975 million units, but 10% to 11% of that number is still a very, very large number by any means.

Again, for consumer electronics, we are looking at, roughly, a 17% growth compared to 27% in 2006. So, as a whole, you can see that the electronics business will continue to grow at a significant clip in 2007, although that rate is somewhat slower compared to 2006. And, as a result, with the slower first quarter we are now forecasting a more moderate mid-single digit growth for the semiconductor industry as a whole.

So to conclude our outlook, I would say that our first quarter is certainly a very challenging one, however, I am still quite proud that we can still deliver a very strong operating profit at 26% to 28%.

And with our strong position in technology, manufacturing, and customer partnership, I believe our management will strive for much better results, going forward, starting in the second quarter and in the second half of this year. We will do our utmost to make that happen.

Now let me move into the financial side of the questions, in particular, on the cash utilization, stock buyback, Phillips stock sales, and capital reduction. Let me first say that TSMC's, one of the TSMC position on cash utilization was to dramatically increase our cash dividend starting in year 2004.

If you remember that we started to give significant cash dividend of NT\$0.60 in 2004 followed by NT\$2 in 2005 and NT\$2.50 in 2006 per share, per share. And we expect this cash dividend to continue in the future.

Now, on the Phillips stock, it is well known now to most of you that Phillips has desired to scale down their TSMC holding for quite some time, and their timing happens to converge quite well with our [unintelligible] cash position not only for now but also for quite a few years in the future.

So this actually is giving us an opportunity to do several things together. What do we like to do is to reduce the total shares outstanding, first, and, secondly, to remove the Phillips overhead and, third, to use our cash productively all in one stroke, all in one stroke.

Therefore, we have been working very closely with Phillips in the past several months to devise a plan to accomplish what we just mentioned -- the three objectives. The work is continuing, however, we are not able now to announce any details and specifics yet. Of course, we will do that once we know that we have a clear plan and the execution. But, again, please, rest assured, that TSMC is working closely with Phillips so that we can have efficient and responsible plan so that we can do the best for our shareholders.

Now, capital reduction, which has been discussed quite a bit recently in -- at least in Taiwan. TSMC actually had to look at capital reduction several times in the past internally, of course, and we still regard cash reduction as a possibility in the future. However, at present, cash capital reduction is on the back burner. We do not have a plan to do cash reduction -- I'm sorry -- capital reduction anytime soon because there may be some better alternative as we just talked about earlier on the stock buyback, Phillips stock buyback.

So, again, I want to assure all shareholders and investors that TSMC continues to work very hard on our very strong cash position, cash dividend, working with Phillips so that we can achieve the best possible shareholders' return now and in the future.

Now, Elizabeth, I'd like to return the floor to you.

Elizabeth Sun - TSMC - Head of Investor Relations

All right, Operators, I think we can open the floor to questions.

QUESTION AND ANSWER

Operator

At this time, we will open the floor for questions. [Operator Instructions] Bhavin Shah, JP Morgan.

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Bhavin Shah - JP Morgan - Analyst

Yes, thank you. Rick, I had a question on the revenue growth outlook that you offered for the industry and how it relates to TSMC. If you look at [inaudible] three or four years instead of the recent era of semiconductor industry after the 2000 level, both your volume and revenue growth have significantly outpaced the industry. In fact, your volume growth has been almost as much as three times the industry, and revenue growth has been higher by at least 4 to 5 percentage points.

So when you mention -- when you have guidance -- sort of, any forecast for 5% and new growth for semiconductor industry, can we continue to assume that you will outpace the industry and outpace like you have done in those last few years?

Rick Tsai - TSMC - President, CEO

Bhavin, now I would say no right now. Our current forecast does not support that, however, I would -- well, I think there is opportunity there, but at this moment, I would not say so.

Bhavin Shah - JP Morgan - Analyst

Now, focusing on the profitability a little bit, it seems that your gross margin in first quarter is maybe about a percent or two below what one would assume it to be for a given revenue level. In other words, given the revenue guidance you have for Q1, I would have expected the gross margin to be about a percent or two higher. So -- and that -- when I couple that with a -- well, you don't really release ASPs anymore, I think, when people can make some assumptions that ASP is still coming off, is there a step down in margins that you're going to experience, going forward, or is there no such trend?

Rick Tsai - TSMC - President, CEO

I think the margin, of course, it seems like they're both, as you know, price and utilization. I would say the first quarter is a difficult one, it's a difficult one, from both aspects. But I would expect, of course, both to improve, going forward, in second quarter and second half. I certainly expect our gross margin to go back up quite significantly.

Bhavin Shah - JP Morgan - Analyst

I realize that, I guess, and what I am referring to is for a given revenue level, there is any deterioration in profitability? In other words, revenue is down so, obviously, the margin has to be down, but is it down moreso than what the revenue level should imply because you are experiencing high competition or something?

Rick Tsai - TSMC - President, CEO

I think you probably can say that for the gross margin will be done a little bit for the similar revenue because of the competition and also because of the -- some of the products we are making -- new products we are making.

Bhavin Shah - JP Morgan - Analyst

Talking about new products, you know, you had talked about 65-nanometer reaching, what, 5% in second quarter. Is that still feasible?

Rick Tsai - TSMC - President, CEO

I don't think we will reach 5% in second quarter. I think we strive to do that in third quarter. I think the current correction slowed down the migration somewhat. But I think what we said before was somewhere between that timeframe before.

Operator

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Ladies and gentlemen, as a reminder, we ask that you please limit your questions to no more than two to allow all participants an opportunity to ask questions to the management members. Randy Abrams, Credit Suisse.

Randy Abrams - Credit Suisse - Analyst

[audio break] -- a following along on a few of the questions just on pricing, and you mentioned it will improve in second quarter. Is that a function of leading edge, whether it's initial 65-nanometer or just a ramp back of 90-nanometer. Is that the factor that you're factoring in for pricing? And when you look at the environment, is it too early to gauge on 65-nanometer on the pricing? You cited 90-nanometer tougher pricing. Is it too early to make a call on how 65-nanometer pricing is shaping out?

Rick Tsai - TSMC - President, CEO

We're not going to say that. This pricing for 90-nanometer is pretty tough, although we expect that to stabilize somewhat later on. Sixty-five-nanometer pricing, I think, right now -- yeah, it's because of volume is just getting started this year. So it's more difficult to gauge. As for any of the technology node in its early phase, it will be more volatile because of the small volume.

Randy Abrams - Credit Suisse - Analyst

Okay, and could you talk a little bit about your China investment plans now that they've loosened the restriction on 0.18 micron? What's the potential timeline for getting approval and then ramping up additional capacity in China to take advantage of that opportunity?

Rick Tsai - TSMC - President, CEO

We are now in the process of applying for the 0.18 micron with the government agency here. We do not expect problems. I think it should be done maybe in a month. Chinese New Year is coming, so that would delay it somewhat. But I don't see, really, any issue there.

Once approved, it will be -- the process can be set up and qualified very quickly because some of -- the equipment there are capable of doing that, and our processes are very mature.

So we will be able to, I believe, to start providing those 0.18 micron services to our customers in China, I hope, sometime in the first half of the year.

Operator

Mehdi Hosseini, Friedman, Billings, Ramsey.

Mehdi Hosseini - Friedman, Billings, Ramsey - Analyst

Thank you, I have two questions regarding your inventory on the PC chips with some excess inventory in the supply chain. How would you characterize the graphic chipset in Q1? And also regarding your commentary on the semiconductor industry revenue growth -- if your revenue growth is not going to be as much as 7% while your capex is going to be up 6 to 8%, so is there going to be significant pressure on the margin. So if you could help us understand the magnitude of that margin pressure will be great. Thank you.

Rick Tsai - TSMC - President, CEO

I think for graphic chips, you probably can view that as a thing as the overall PC chips from inventory point of view. That will be my guess, that would be my guess.

Mehdi Hosseini - Friedman, Billings, Ramsey - Analyst

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But there is some inventory for graphic chips in the supply chain?

Rick Tsai - TSMC - President, CEO

I told you I cannot be that sure. I believe there is some, but I cannot tell you who and what. But I believe there is some, yes.

Your next question -- you say Kpcs or capacity or increase or --? Can you repeat the question, I'm sorry -- for the second question.

Operator

Mehdi, you line is open.

Rick Tsai - TSMC - President, CEO

Hello? Mehdi?

Operator

Timothy Arcuri, Citigroup.

Timothy Arcuri - Citigroup - Analyst

Thanks a lot. I have a couple of questions. First of all, can you give us some idea of what the loading for the capex looks like for the year? It looks like you're coming off of a number roughly that annualizes to maybe 2.4 billion, and you got into a number a little bit higher than that for the year. So how should we think about how the capex lays out through the year?

Lora Ho - TSMC - VP, CFO

We said the capex will be ranging from 2.6 to 2.8. I'd like to give you a little bit more detail on that number.

Firstly, on that 2.6 to 2.8 number, actually, we are planning to spend around 500 million in [unintelligible] and capacity. As you can imagine, though, capacity will not come out until 2008, so we have said that capacity planning capex, as well, is a strategy issue. We look at multiple years instead of only one year.

Also, for a total number, how does that spread out in a year -- I would say it would be slightly back-end loaded, and the pattern will be very similar to 2006.

Timothy Arcuri - Citigroup - Analyst

You mean the capacity increase you need?

Lora Ho - TSMC - VP, CFO

The capacity increase will be also very similar to 2006, and in 2006 we had increase around 18% of our capacity. In 2007, it will be similar but somewhat lower.

Timothy Arcuri - Citigroup - Analyst

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Okay, great. And then, I guess, just a quick follow-up -- just from a top-level perspective, your capex now has been flat for about three years -- '04, '05, '06 -- and there's been a huge move to several big chip makes going fabless, and we've seen a record IC unit environment during the last couple of years. So I'm wondering, are there a lot of efficiencies that you're getting out of your capex that you weren't getting a few years ago? And, if that's the case, will that persist, going forward?

Rick Tsai - TSMC - President, CEO

I would say yes, we're getting higher and higher efficiency out of Kpcs. You probably can calculate from the equivalent capacity for Kpcs. Too, of course, the productivity improvements and the commercial terms.

Do we expect to continue? I would say so, yes. That's one of the most important costs of management mechanism, and I think our people, all the way from R&D to manufacturing, are committed to that.

Timothy Arcuri - Citigroup - Analyst

Thanks a lot -- if I could sneak in one more quick one -- what percentage of the full-year capex has been allocated in terms of the equipment orders already?

Lora Ho - TSMC - VP, CFO

It's really depending on the lead time of the equipment, I think for their first half of the year and for those low lead time equipment is pretty much down. As far as for some other equipment, originally, lead time was four to five months, in average, and we will have to see whether the main company and how the delivery is going to happen. So there is still some room for adjustment.

Operator

Mehdi Hosseini, Freidman, Billings, Ramsey.

Mehdi Hosseini - Friedman, Billings, Ramsey - Analyst

Thank you. I got cut off. Going back to my previous question, let me clarify -- if I take the midpoint of your capex, it seems to be up 5 to 7%, and your commentary regarding the overall semiconductor industry suggests that your revenue growth may be below 7% in 2007. So it seems to me that there's going to be significant pressure on the gross margin throughout the year. So if you could provide some more color on this, it will be great.

Rick Tsai - TSMC - President, CEO

Yes, there is obviously a -- for first quarter you are seeing already the margin pressure. One of the most important reasons is utilization, as we all know, because if you look at the Kpcs, of course, converting to the capacity, the first quarter capacity number we have published just now -- if you compare that to the first quarter of 2006, you see, I think, roughly, 13 to 14% increase.

Of course, because of the severe -- gross capacity was basically built sometime back in the third quarter, early third quarter time last year.

So, obviously, some of those capacity is now being utilized this quarter. This situation will improve as we move on to the second quarter, but there is still, probably, a certain under-utilization of the added additional capacity. I think in the second half we should be much better -- much higher utilization.

But, overall, you are right. The gross margin will be suppressed somewhat in the first half.

Operator

Shailesh Jaitly, Nomura Securities.

Shailesh Jaitly - Nomura Securities - Analyst

Hi. My first question relates to the linearity of the current quarter. In articulating the guidance for 1Q, what proportion of the revenue do you expect to come from March, the month of March in 1Q?

Lora Ho - TSMC - VP, CFO

We don't comment on months in the revenue. I think quarterly revenue should give you a good enough picture of what could happen in the coming few months.

Shailesh Jaitly - Nomura Securities - Analyst

But, Lora, when I look at your 1Q, do you expect every single month to see sequential month-on-month improvements as they progress through the quarter?

Lora Ho - TSMC - VP, CFO

As Rick just mentioned, we are expecting a recovery from late first quarter. So I would say that we believe unless from March, we are going to some recovery.

Shailesh Jaitly - Nomura Securities - Analyst

Okay, and if we may just go back three months and at the time when you were guiding about 4Q, obviously, there was no guidance provided at that time for 1Q, but internally you would have known basically what exactly you are seeing. Based on the numbers, which you see today, were you disappointed in any way internally? And, if at all, where were the disappointments -- are there areas of disappointment of the 16% revenue decline that's pretty much in line with what your talk say three months back.

Rick Tsai - TSMC - President, CEO

Well, we are certainly not happy with our first quarter guidance, that's for sure. I guess you are asking whether we are seeing this three months earlier. The answer should be, no, we are not seeing such magnitude. However, I think the correction in the wireless area has been more several than we expected.

Shailesh Jaitly - Nomura Securities - Analyst

Rick, just to understand a bit clearer in the wireless space, because all the chip manufacturers who have talked about the wireless space, they definitely see that product mix to be one of the major issues this year with the market moving quite aggressively towards the single chip. The revenue growth is a lot milder as compared to the unit growth. I was wondering how is it going to filter through for TSMC, for us through the year, even though when you see the units coming back?

Rick Tsai - TSMC - President, CEO

I think, overall, for the wireless, for the handset, there have been persistent pressure in the price at the end market. Of course, the more concentration in the lower-end cell phone made that even more difficult. We are seeing that pressure through our customers, but what we've been doing, of course, is to move, together with our customers, to move down the technology curve, to produce more chips at a lower cost.

I think our cost improvement effort also has worked quite well from both yields and the wafer-cost point of view. So we are managing that, but I also must say that the pressure continues to be quite high from the handset segment.

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Operator

Mark Fitzgerald, Bank of America Securities.

Mark Fitzgerald - Bank of America Securities - Analyst

Thank you. Two questions -- can you just give us a quick update on the NOR opportunity here and what it means for you in 2007, and are you going to execute on it?

Rick Tsai - TSMC - President, CEO

The NOR flash, we've been working since about last year for one [ponder]. But the other one we've been working together for, actually, for the last few years. Both are now in the ramping mode. I think both are now contributing significant revenue and profits. We expect the overall NOR Flash to contribute whether we call a mid-single digit or present of our total revenue in year 2007. We certainly expect this business to continue to grow next year and forward.

Mark Fitzgerald - Bank of America Securities - Analyst

Okay, and then just switching gears quickly -- we hearing a lot about the cost of design here as we go to these next technology, you know, 65 and 45. Do you see this causing any impact in terms of the number of your customers and the timeframe at which they're going to these next technology nodes, slowing down? And is there anything you can do to address the cost of design here to help customers lower that?

Rick Tsai - TSMC - President, CEO

The cost of design has been an issue for a while. Of course, I guess, it probably gets more significant as we move down the curve, the technology curve. But we've been working with our customers not just in 65 and 45. We started pretty much at 90-nanometer and earlier, but the effort now is also getting higher and bigger.

What have we been doing? We've been working to set up, together with the EDA vendors and the IP suppliers, for design infrastructure. We also develop quite a bit of IPs ourselves for our customers. We also have a very large design service team internally, and with some of our invested design service company.

We work with our customers on ways to minimize their max cost. Overall, it's to reduce their NRE. We spend a lot of time on the design for manufacturing point, also. We do everything to shorten their design cycle and to shorten their time to market.

And, I must say, encouraging manner for 65-nanometer, we now have several dozens of customers engaging with us, and covers both very big ones, big IDMs and big fabless all the way to mid-size to even small-size customers. I believe some of those small-size customers are now able to utilize the leading edge technology to create their differentiation to add more value, and they are able -- they are also capable of doing that both from technical and business point of view.

We are working under -- first, I have a design organization of more than 400 people now just internally in TSMC. We will continue expanding that effort, some close budget and [technology] point of view.

Operator

Robert Mayer, Needham.

Robert Mayer - Needham & Company - Analyst

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Yes, a couple of questions -- in terms of utilization, it sounds like utilization will bottom sometime in Q1, from your comments. I think I got that. Perhaps you could elaborate on that a little bit more in terms of utilization for the leading edge 90-nanometer technology and perhaps below versus the other, or are we both going to see a bottom and at what sort of rates do you expect to bottom out? Would it be longer -- would it take longer to see a bottom in the perhaps more trailing edge technologies?

And, related to that, I've heard of design activity picking up in 65-nanometer; that tapeouts are increasing and such. What are you seeing in the near term in that regard?

Rick Tsai - TSMC - President, CEO

Okay, 90-nanometer, we do expect that utilization to bottom in first quarter. And I think the trend is fairly similar across different technology nodes. First quarter and second quarter. Sixty-five-nanometer, of course, it's being, again, very new technology now than the -- so sometimes it's a change from one customers or two will impact the whole thing quite a bit. So it's more difficult to give you a certain answer, but you it seems the pattern is about the same.

Robert Mayer - Needham & Company - Analyst

And your expectation for where things bottom at -- are we bottoming in 75% utilization overall, and maybe a higher rate for 90, or similar rates for 90 and the rest?

Rick Tsai - TSMC - President, CEO

Well, we do not comment on specific numbers for utilization, but, again, as I said, in first quarter I think 90-nanometer and the other technologies at a bigger line with -- will be bottoming out.

And from the design activity point of view for 65-nanometer, we do agree with that statement. I think actually compared to 90-nanometer, I believe the number of customers as well as the range of the applications are both become more, I would say, more robust. Some of the big customers now are moving into 65-nanometer quite a bit more aggressively compared to the pacing 90-nanometer.

Robert Mayer - Needham & Company - Analyst

I would assume your capex is aimed at supporting that 65-nanometer robustness. Is that accurate?

Rick Tsai - TSMC - President, CEO

Yes, yes, yes.

Operator

Bhavin Shah, JP Morgan.

Bhavin Shah - JP Morgan - Analyst

Yes, I just wanted to follow up on that 65-nanometer -- the slower ramp -- is that -- can you just elaborate what's driving that? Is it slower adoption of new products or -- because you did mention that some customers are beginning to pull in orders. So is that not for new products?

Rick Tsai - TSMC - President, CEO

Bhavin, you are talking about the 65-nanometer slow ramp?

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Bhavin Shah - JP Morgan - Analyst

Yes.

Rick Tsai - TSMC - President, CEO

Okay, I think the -- for the -- I would say, overall, for the handset chip makers, overall, the 65-nanometer ramp, I guess, in part due to this correction, has been somewhat slower than expected. But on the other hand, I think this was probably a couple of months to a quarter phenomena, a lot more than a quarter. I think that the ramp -- the phase of the ramp will accelerate definitely starting in the second quarter timeframe. We have other applications are moving in, also. I think some of the other applications are utilizing 65-nanometer sooner than they did in the 90-nanometer node.

Bhavin Shah - JP Morgan - Analyst

Can you give some examples? Is that possible?

Rick Tsai - TSMC - President, CEO

I will give you a bunch [laughs], but the are -- some of them are, of course, you know quite well -- the base band, the application processors, the [unintelligible] are moving in rather quickly. But, in addition, I think some of the consumer applications are now moving into 65 factor -- like digital TVs. And we're seeing that also for the digital cameras, storage, networking, [UDAB UVS]. If I try to remember what at that equivalent time, so 90-nanometer, I don't think the applications were as broad as they are now. Oh, I didn't mention FPGA, of course.

Bhavin Shah - JP Morgan - Analyst

And the other question was just another clarification on my first question on your growth versus industry. You mentioned that as of now you don't see the difference. In other words, you see your growth basically the same as industry, is that what you meant?

Rick Tsai - TSMC - President, CEO

Well, Bhavin, you are actually asking me to forecast for the whole year. I just cannot do that now.

Bhavin Shah - JP Morgan - Analyst

Okay.

Rick Tsai - TSMC - President, CEO

Sorry about it.

Lora Ho - TSMC - VP, CFO

Next question.

Operator

Ivan Goh, Dresdner Kleinwort.

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Ivan Goh - Dresdner Kleinwort - Analyst

Hi, I have one question. Just looking at your capacity growth in 2006, it was 18.6%, but in unit terms you grew close to 30%. Now your forecasting capacity growth of, in 2007, of similar magnitude as -- similar or lower magnitude compared to 2006. Just based on that capacity growth, do you have some kind of a target as to what kind of wafer growth you are targeting? I'm just asking that because if you look at your guidance for 2007, you say the semiconductor industry will grow at a mid-single digit, and you don't think you'll grow substantially more than that. So, in other words, do you expect pricing to come down substantially in 2007?

Rick Tsai - TSMC - President, CEO

Again, I think a little bit, a little tricky, the way you look at the capacity growth on a yearly basis compared to on a quarterly basis. You can say on a yearly basis we grow our capacity by a certain percentage, like, a little below last year's. And you wonder why we're not growing as much.

However, if you look at it from a quarterly point of view, again, if you compare, for instance, the first quarter this year to first quarter last year, there is a significant growth in capacity, unfortunately not being utilized, unfortunately. I wish they were, but they are not.

And, as a result, they are not contributing to our revenue. They are actually pulling down our profits, again, unfortunately. You got to second quarter, that's where you improve this situation, where you improve, but still -- by the way, last year, the first quarter and second quarter, our utilization was higher than 100% also. So it's just kind of a put salt on your scar type of thing.

So, again, maybe if we move to second quarter, you know, the situation continues but at, of course, a better fashion but, in the second half, we believe we certainly -- that's what we expect. Added capacity will be fully utilized in the second half.

Ivan Goh - Dresdner Kleinwort - Analyst

And the question on your comment that you don't think you will exceed the semiconductor growth this year substantially. Two questions on that -- firstly, is this -- do you think this is a permanent change in TSMC's situation that, going forward, you don't think that you will significantly exceed the industry growth? And, secondly, I just wanted to find out, based on your forecasts, what are the reasons why you will not significantly exceed industry growth?

Rick Tsai - TSMC - President, CEO

Well, for your first question, the answer, of course, is a very firm certainly I do not expect that to be the case, going forward. Our goal is to grow at a faster rate than the industry.

Of course, that growth is kind of an average over the years, and we do expect our growth rate to be higher, and we are doing everything -- we are doing many things to continue that higher growth rate.

On this year, I think the -- I will say the first half, the first quarter, numbers does hurt, does hurt. I think, of course, the pricing pressure has certain impact from a revenue point of view, although I think our cost improvement effort will actual continue to accelerate, and I think that we'll render our gross margin somewhat better than compared to the revenue point of view.

Operator

Pranab Kumar, Daiwa Research.

Pranab Kumar - Daiwa Research - Analyst

Thank you for taking the questions. I have two questions -- first is on your margin side. You said that new product introduction is also affecting your margin in 2007. How long do you think that effect will continue? Do you think that by fourth quarter of 2007 or it may continue until 2008, that type of margin erosion? And second one is on the NOR Flash business -- do you think that NOR Flash technology roadmap has to compete

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with other memory technology roadmap to remain competitive? If so, when will you move to 65-nanometer, and will it lead to significant higher capex in 2008, because I suppose you have to compete with other memory technology, which is NOR Flash?

Rick Tsai - TSMC - President, CEO

Pranab, I think for new products as the ramp goes on, I think we will help to reduce our cost and improve the margin. For NOR Flash, I think the competitive pressure, of course, is still very high, probably not as high as the NAND Flash but still we are working very already on 65-nanometer technology together with our partner. We are, of course, we are close to production for 90-nanometer, 80-nanometer. Fifty-five nanometer is in development. We will, I think, embark upon 45-nanometer fairly soon. We are going to leverage.

We are somewhat different, of course, from the other flash, especially NAND Flash makers, because of we are moving from the logic manufacturing. So our logic technology right now is seeing the 45-nanometer, but we are going to leverage for the knowledge that we have learned in the 45-nanometer logic technology development and use them in the flash technology area.

Pranab Kumar - Daiwa Research - Analyst

Okay, and 45 will be -- I presume it will be emersion technology -- emersion lithograph emission?

Rick Tsai - TSMC - President, CEO

Yes, 45-nanometer we'll use quite extensively emersion lithography technology.

Pranab Kumar - Daiwa Research - Analyst

Now 45, can we expect it will start by beginning of 2008?

Rick Tsai - TSMC - President, CEO

For NOR?

Pranab Kumar - Daiwa Research - Analyst

NOR, yeah.

Rick Tsai - TSMC - President, CEO

I don't have all the head of my -- off the top of my head, but do you think we'll do that -- probably a couple of quarters afterward.

Lora Ho - TSMC - VP, CFO

Operator, in the interest of time, we will allow one last caller.

Operator

Matt Gabel, Weiss Advisers.

Matt Gabel - Weiss Advisers - Analyst

Could you give some color on what happens with margins in Q2 on a sequential basis? I didn't quite understand the last time it was explained.

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Lora Ho - TSMC - VP, CFO

We did not talk about any forecast or guidance for Q2. What we have said that we believe the inventory correction will come to the end in first quarter, and we are going to see, by the end of first quarter, we are going to see the recovery, and we also said the utilization and the margin will be better in second quarter.

Operator

Ms. Ho, there are no more questions at this time.

Lora Ho - TSMC - VP, CFO

Thanks to everybody for your participation. Thank you very much for your time, and we're going to see you next quarter. Bye-bye.

Operator

Before we conclude TSMC's fourth quarter 2006 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 have a good day.

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