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TXN - Q2 2016 Texas Instruments Inc Earnings Call

EVENT DATE/TIME: JULY 25, 2016 / 9:30PM GMT

OVERVIEW:

TXN reported 2Q16 net income of $779m and EPS of $0.76. Co. expects 3Q16 revenues to be $3.34-3.62b and EPS to be $0.81-0.91.

CORPORATE PARTICIPANTS

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CONFERENCE CALL PARTICIPANTS

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C.J. Muse *Evercore ISI - Analyst*

Joe Moore *Morgan Stanley - Analyst*

Craig Ellis *B. Riley & Co. - Analyst*

John Pitzer *Credit Suisse - Analyst*

Chris Caso *Susquehanna Financial Group / SIG - Analyst*

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Tore Svanberg *Stifel Nicolaus - Analyst*

Timothy Arcuri *Cowen and Company - Analyst*

PRESENTATION

Operator

Good day and welcome to Texas Instruments 2Q 2016 earnings release conference call. At this time, I'd like to turn the call over to Mr. Dave Pahl. Please go ahead, sir.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Thank you. Good afternoon and thank you for joining our second quarter 2016 earnings conference call. As usual, Kevin March, TI's Chief Financial Officer, is with me today.

For any of you who missed the release, you can find it on our website at TI.com/IR. This call is being broadcast live over the web and can be accessed through our website. A replay will be available through the web.

This call will include forward-looking statements that involve risks and uncertainties that could cause TI's results to differ materially from management's current expectation. We encourage you to review the notice regarding forward-looking statements contained in the earnings release published today, as well as TI's most recent SEC filings for a more complete description.

I'll start with a quick summary. Revenue and earnings per share for the quarter were solidly in the upper half of our expected range. Compared with a year ago, demand for our products continue to be strong in the automotive market and grew in industrial and the communications equipment markets. Despite sequential growth, demand in the personal electronics market was down from a year ago.

In our core businesses, Embedded Processing revenue grew 9% and Analog revenue was about even with the same quarter a year ago. Operating margins increased in both businesses. Earnings per share were $0.76. With that backdrop, Kevin and I will move on to the details of our performance, which we believe continues to representative of the ongoing strength of our business model.

In the second quarter, our cash flow from operations was $1.1 billion. We believe that free cash flow growth, especially on a per-share basis, is most important to maximizing shareholder value in the long term. Free cash flow for the trailing 12-month period was $3.9 billion, up 7% from a year ago. Free cash flow margin was 30% of revenue, up from 27.4% a year ago.

We continue to benefit from our improved product portfolio and the efficiencies of our manufacturing strategy, the latter of which includes our growing 300-millimeter Analog output and the opportunistic purchase of assets ahead of demand.

We believe that free cash flow will be valued only if it's returned to shareholders or productively invested in the business. For the trailing 12-month period, we've returned $4.1 billion of cash to investors through a combination of dividends and stock repurchases.

From a year ago, Analog revenue was about even with growth in High Performance Analog and Silicon Valley Analog was offset by declines in High Volume Analog & Logic and Power Management. Embedded Processing revenue increased by 9% from a year ago, due to growth in all three product lines, led by Processors.

Our investments in Embedded continue to build a diverse business of long-lived products that contribute to free cash flow growth over the long term. In our Other segment, revenue declined 4% from a year ago due to calculators, royalties, and custom ASIC products, which was partially offset by DLP products.

Now I'll move to provide some insight into this quarter's revenue performance by end market versus a year ago. Automotive demand remained strong, with the majority of sectors growing, led by infotainment. Industrial demand had broad-based growth, with more than half of the sectors growing. Personal electronics declined broadly, led by mobile phones. Communications equipment grew from a year ago, but declined sequentially. And finally, enterprise systems grew.

We continue to focus on making our company stronger through manufacturing and technology, the breadth of our product portfolio, the reach of our market channels, and our diverse and long-lived positions. These four attributes taken together are at the core of what puts TI in a unique class of companies capable of long-term free cash flow growth. Kevin will now review profitability, capital management, and our outlook.

Kevin March - *Texas Instruments Inc - CFO*

Thanks, Dave, and good afternoon, everyone.

Gross profit in the quarter was $2.0 billion or 61.2% of revenue. From a year ago, gross profit margin increased 300 basis points, primarily due to lower manufacturing costs. Operating expenses were $805 million, up 2% from a year ago.

Over the last 12 months, we've invested $1.29 billion on research and development, an important element of our capital allocation. Acquisition charges were $79 million, all of which were the ongoing amortization of intangibles, which is a non-cash expense.

Operating profit was $1.12 billion or 34.1% of revenue. Operating profit was up 11% from the year-ago quarter. Operating margin for Analog was 37.7% and for Embedded Processing was 25.0%.

Our focused investments on the best sustainable growth opportunities with differentiated positions enabled both businesses to continue to contribute nicely to free cash flow growth. Net income in the second quarter was $779 million or $0.76 per share.

Now, let me comment on our capital management results, starting with our cash generation. Cash flow from operations was $1.07 billion in the quarter. Inventory days were 133, consistent with our long-term model of 105 days to 135 days, as we stage inventory for expected revenue growth in the third quarter.

Capital expenditures were $158 million in the quarter. On a trailing 12-month basis, cash flow from operations was $4.46 billion, up 9% from the same period a year ago. Trailing 12-month capital expenditures were $585 million or 4.5% of revenue. As a reminder, our long-term expectation is for capital expenditures, including the expansion of our 300-millimeter Analog capacity, to be about 4% of revenue.

Free cash flow for the past 12 months was $3.87 billion or 30.0% of revenue. Free cash flow was 7% higher than a year ago. Our cash flow reflects the strength of our business model. As we've said, we believe free cash flow growth, especially on a per-share basis, is most important to maximizing shareholder value in the long term and will be valued only if it's returned to shareholders or productively reinvested into the business. As we have noted, our intent is to return 100% of our free cash flow, plus any proceeds we receive from the exercise of equity compensation minus net debt retirement.

For those who may have missed it, in May, we issued $500 million of six-year debt at a coupon rate of 1.85%. In addition, we have retired $1 billion of debt. This leaves total debt of $3.63 billion, with a weighted average coupon rate of 2.22%.

In the second quarter, we paid $382 million in dividends and repurchased $527 million of our stock for a total return of $909 million. Total cash returned to shareholders in the past 12 months was $4.07 billion.

Outstanding share count was reduced by 3% over the past 12 months, and by 42% since the end of 2004 when we initiated a program designed to reduce our share count. These combined returns demonstrate our confidence in our business model and our commitments to return excess cash to our shareholders.

Fundamental to our commitment to return cash are our cash management and tax practices. We ended the second quarter with $2.54 billion of cash and short-term investments, with our U.S. entities owning about 80% of our cash. This on-shore cash is readily available for a variety of uses.

Our orders in the quarter were $3.33 billion, up 2% from year ago.

Turning to our outlook, for the third quarter, we expect revenue in the range of $3.34 billion to $3.62 billion, and earnings per share to be in the range of $0.81 to $0.91. Acquisition charges, which are non-cash amortization charges, will remain about even and hold at about $80 million per quarter through the third quarter of 2019. They will then decline to about $50 million per quarter for two additional years.

Our expectation for our annual effective tax rate in 2016 is unchanged at about 30%, and this is the tax rate you should use for the third quarter and for the year.

In summary, we believe our second-quarter results demonstrate the strength of our business model. With that, let me turn it back to Dave.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Thanks, Kevin. Operator, you can now open the lines up for questions.

In order to provide as many of you as possible an opportunity to ask a question, please limit yourself to a single question. After our response, we'll provide you an opportunity for an additional follow up. Operator?

QUESTIONS AND ANSWERS

Operator

Thank you.

(Operator Instructions)

And our first question will come from Chris Danely with Citigroup.

Chris Danely - *Citigroup - Analyst*

Thanks, guys. Great quarter. So it seems like the revenue was above the midpoint, like you said. Can you just maybe talk about the strength you saw or what was stronger than expectations by segment or by end market?

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Yes, Chris, I'll just say across our businesses, I'd just say that most areas performed a bit better than our expectations. Obviously there's always puts and takes, but in general that was the case. And obviously, that put us solidly in the upper half of our range.

Chris Danely - *Citigroup - Analyst*

Great. And for my follow-up, if we plug in some sort of normal seasonal growth in Q4, it looks like revs will be flat to slightly up. But it looks like OpEx might be up as a percentage this year. Is that true? Can you shed any light on whether that could happen or could not happen, or what would be the drivers there?

Kevin March - *Texas Instruments Inc - CFO*

Chris, you said Q4. Did you mean to say Q3?

Chris Danely - *Citigroup - Analyst*

No, we've already got it for Q3. But if we plug in some normal seasonal growth for Q4, you get revenue around the same level as last year. It looks like on OpEx might be a little bit higher as a percent of revenue this year versus last year. A, is that true? Can you comment on that or talk about the puts and takes on OpEx?

Kevin March - *Texas Instruments Inc - CFO*

Well I'll wait 90 days and give you what we think the Q4 range is going to be for revenue and then we can talk about where that is. Right now, we'll just focus our comments on 2Q and 3Q if you don't mind, Chris.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Thank you, Chris. We'll go to the next caller, please.

Operator

Sure. Our next question will come from Stacy Rasgon with Bernstein Research.

Stacy Rasgon - *Bernstein Research - Analyst*

Thanks for taking my questions. First, could you give us an idea of in the current quarter how much personal electronics was down year over year, and for Q3, how do you see that trending? Do you still see that business down year over year in Q3?

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Yes, Stacy, we don't get to that level of detail. I can say that we did see sequential growth as we were expecting to see it.

It is obviously still down significantly year on year, and we really just haven't provided guidance out into third quarter. And again, if there's anything that's moving around that's significant, our practices have been to call that out to provide clarity. So I think with our results coming solidly in the upper half and our guidance that we're providing, we're just not going to that level of detail at this time. Do you have a follow on?

Stacy Rasgon - *Bernstein Research - Analyst*

Yes. Can you give us some idea of gross margin drivers in the quarter? It seems like gross margins came in a little stronger. And how do you see those drivers trending into next year? Do you think gross margins should be up on the higher revenues?

Kevin March - *Texas Instruments Inc - CFO*

Yes, Stacy, the drivers to gross margin are last quarter and going for the foreseeable future, the same things we've been seeing for a while. And that is, we're seeing depreciation rolling off, which is clearly giving us an accounting benefit to gross margin. But more importantly, we've gone increased production on 300-millimeter, which is considerably more cost effective on a chip level than the equivalent 200-millimeter production.

And as we see depreciation continue to roll off, albeit more slowly, as we move into future quarters and more production on 300-millimeter, we'll continue to see benefit to gross margins. So I think that what you've seen going on is just a prelude to what you'll see going on as we look out a little bit further.

If you look out further in time as to what to expect, I think we'd just tell you to do what we've been doing in the past. Which is, on any delta revenue that forecast into your model, that falls through to around 70%, 75% on average over time. That will give you a pretty good way to anticipate what the company's gross margins will stack up as.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Okay. Thanks, Stacy. We'll go to the next caller, please.

Operator

Our next question will come from Amit Daryanani with RBC Capital Markets.

Amit Daryanani - *RBC Capital Markets - Analyst*

Thanks for taking my question, guys. First off, the CapEx we think was a little bit higher than the 4% line that you have guys talked about in the past. Could you just talk about how do you think about the rest of the year, and at what point do you think CapEx will approximate depreciation for you guys?

Kevin March - *Texas Instruments Inc - CFO*

Amit, were you a little quiet. I think you were saying that CapEx is a little higher than in the past?

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

That's what I had heard too. We're having a little bit of trouble hearing you. So resummarize your question, you're saying CapEx was higher than it has been in the recent past and why is that?

Amit Daryanani - *RBC Capital Markets - Analyst*

Sorry, right. And at what point do you think CapEx is going to approximate depreciation for you guys over time?

Kevin March - *Texas Instruments Inc - CFO*

CapEx is going to be noisy in any one quarter. So makes more sense to look at it on what we think is a trailing 12-month basis. Over the last 12 months, CapEx is running about 4.5% of our last 12-months revenue. Depreciation has been running about 5.2% over the last 12-months revenue. So obviously those will converge at some point.

But I don't expect those to converge before the end of 2016. They may converge in any one quarter, but on a trailing 12-month basis, it will take a couple more quarters before we see those meet up. Again, remember our long-term model is to keep our CapEx spending at around 4% of revenue, and that includes the conversion and expansion of our 300-millimeter capacity for Analog production.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Do you have a follow-on Amit?

Amit Daryanani - *RBC Capital Markets - Analyst*

Yes, if I could just follow up. OpEx, I guess, at least in the June quarter, it looks like it was higher than expected. Sort of comparable to what happened in the March quarter, if I'm not mistaken.

Could you just talk about how do you look at OpEx as a percent of sales and what's driving the higher uptick there? It looks like it's more R&D more than anything else in the first half of the year so far.

Kevin March - *Texas Instruments Inc - CFO*

I'm not so sure it was higher than expected per se, but it was certainly higher than it was the last quarter and higher on a year-over-year basis. You've got a couple things going on there.

Sequentially, you've got three, four months worth of pay and benefit increases. So last quarter you only had two months worth. That's also you true year over year by the way, we just got pay and paying benefit increases.

But also importantly on the R&D as you noted, we have been, for a number of quarters now, reallocating our internal resources towards more development efforts. So those would be resources that may have been working in manufacturing support or they may have been working in SG&A, and we're redeploying those resources into development activity and R&D. And we expect to continue doing that for a number of quarters to come. And so consequently, you're seeing R&D begin to move up a little bit more than you might see on the G&A line.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Okay. Thank you Amit. We'll go to the next caller, please.

Operator

Next will be C.J. Muse with Evercore ISI.

C.J. Muse - *Evercore ISI - Analyst*

Good afternoon. Thank you for taking my question. I guess a question to go back to your incremental gross margins and try and maybe dig a little bit deeper and understanding how much is rolling off from G&A, mix, utilization, the benefit of 300-millimeter.

So if we look at calendar 2016 and things play out seasonal, it looks like about $150 million benefit from G&A but another $200 million from those other categories. Is there any way to parse that out and then better understand in a go forward what that might look like for each of those categories, mix, utilization, 300-millimeter?

Kevin March - *Texas Instruments Inc - CFO*

C.J., just to think about that, from an underutilization standpoint, frankly, there's no real benefit going on there. The underutilization costs have been almost exactly the same for multiple quarter in a row now.

Depreciation has actually come down. So you compare the most recent quarter at $155 million depreciation, the year-ago quarter was $198 million. So you're getting about a $45 million depreciation lift. But really the rest of it's just lower overall manufacturing costs.

Again, incrementally, we're getting more production on 300-millimeter, which at the die level has a 40% cost benefit for us. So that's an overall 20% improvement to gross profit margin, or excuse me 20 -- it takes gross margin profit up effectively, because cost comes down by that amount. So you've got the combination of all those things weighing together.

So again, depreciation down about $45 million 2Q to 2Q on a year-over-year basis. Underutilization charge is pretty flat throughout that period. So it's really a conversion to lower cost manufacturing.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

I'll just add for those that may not follow us as closely why 300-millimeter makes a difference. So we've got a footprint manufacturing analog products at 200-millimeter, and the 300-millimeter, we ended last year with about $6 billion of open capacity on 300-millimeter. And the wafer size is bigger, and that translates into a lower cost, as Kevin was talking about at a chip level where the silicon level is 40% lower.

So basically as we build more of our products on 300-millimeter, that will help to drive gross margins as well as free cash flow. C.J., you have a follow-up question?

C.J. Muse - *Evercore ISI - Analyst*

Yes, Dave, that was very helpful. If I could just ask a short-term question. In terms of gross margin into September, will mix be a headwind there or should we think gross margins at least flat? Thank you.

Kevin March - *Texas Instruments Inc - CFO*

C.J., I don't think that mix is really going to play too much of a factor in this. We're going to continue to have more production on 300-millimeter and lower overall manufacturing costs, and it's really just the economics that Dave just mentioned that's going to keep on helping on gross margin going forward.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Great. Thank you, C.J. We'll go to the next caller, please.

Operator

Our next question will come from Joe Moore with Morgan Stanley.

Joe Moore - *Morgan Stanley - Analyst*

Great. Thank you. I wonder if you can give us an update on the Embedded Processing segment. You're showing some nice growth there. Can you talk about where that's coming from, and in particular, the previous wireless business as OMAP Connectivity, can you talk about growth that you might be seeing there?

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Yes, sure, Joe. Year over year, as we had said before, we're seeing good growth in all three product lines. And just as a reminder, for 2015, we had three product lines inside of Embedded, Microcontrollers, which made up 45% of revenue, Processors, again, 45% and Connectivity at 10%.

So I'll just say over the last few years, Connectivity has been growing very strongly, though it's coming obviously from a much lower revenue base. And there we support a dozen or so connectivity standards, and those products are finding, I'd just say, very, very diverse different applications and doing very nicely.

Processors, again, is doing very well. It is being benefited from both automotive as well as recovery that we saw inside of comm's infrastructure. And then Microcontrollers is benefiting from really the industrial market as it is finding very, very diverse applications.

So that's what that looks like across the board. Do you have a follow on?

Joe Moore - *Morgan Stanley - Analyst*

That was very helpful, thank you. Separately, I wonder is there any areas where you're seeing tighter availability or lead time extensions or anything like that across the whole portfolio?

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Yes, I'd say that across the board, our lead times have remained unchanged and at very, very low levels. So product availability continues to be very good, and both at our distributors as well as for the products that we support through consignment programs or in a classical book ship business. So really no changes on that. And I'd just also mention that just our on-time delivery, so our metrics to when customers want to have them remain at very, very high level.

Thank you, Joe. We'll go to the next caller, please.

Operator

And that question will come from Craig Ellis with B. Riley.

Craig Ellis - *B. Riley & Co. - Analyst*

Thanks for taking the question, and nice job on the results. Kevin and Dave, I wanted to follow up on Embedded Processing operating margins. For the last couple of years, the Company has had the objective to get them higher, and you've done a lot on the OpEx side and now for a second consecutive quarter we're in the mid-20%s. Can you put in context where operating margins are now versus I think levels that the company would be happy with, is it possible to get to Analog levels or are we at optimal levels now with EP?

Kevin March - *Texas Instruments Inc - CFO*

So, Craig, on that I would say that there's nothing inherently different between the Analog and Embedded on a point to the stabilized margins would be different. What I would say is that while we won't try to predict margins in the individual segments per se, we're confident that Embedded Processing just like Analog can be a very solid contributor to free cash flow growth over the long haul. Again, this is largely because the products that we manufacture in that segment have very long market shelf lives. So you can get a lot of revenue stream off of your R&D that you spend.

You may recall that over the last couple years ending early last year, we were doing some restructuring activity in Embedded Processing and taking some costs out. And we've been talking for a while now that the real secret to being able to improve the profitability in that area was on revenue growth. And that team has been doing a very good job at turning the results of their efforts into solid revenue growth, and consequently, we're seeing the profitability go. They are committed to continuing in that direction, and so I look forward to seeing what they turn in as we go multiple quarters out.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Do you have a follow on, Craig?

Craig Ellis - *B. Riley & Co. - Analyst*

Yes, thanks, Dave. The follow up is related to Chris' question. You mentioned that the performance of the business was just a little bit better than expected on a broad-based basis in the second quarter. Was that because the order strength in the business was just better than the team thought going into the quarter, or was in fact the business just scoped a little bit more conservatively than it played out? What accounted for the upside versus expectations?

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Yes. So I would -- I'd just point to that we've got 55% of our revenue that runs through consignment. So we actually don't get orders there, we get forecasts that get pulled to actual demand. We've got 60% of our revenues that run through distribution, and 60% of that is actually on consignment. So what we ship, the demand that we ship to is much closer to real-time of what customers want and need.

So I think that very simplistically, they just ended up pulling more, slightly more, than what we were initially expecting across a broad range. So if there was something in there that we could point to one or two things, we would do that, but that's just not the case this time. Thank you, Craig. We'll go to the next caller.

Operator

And we'll go to John Pitzer with Credit Suisse.

John Pitzer - *Credit Suisse - Analyst*

Yes, good afternoon, guys. Thanks for letting me ask the questions. Congratulations on the strong, consistent results.

Kevin, I wanted to talk a little about OpEx patterns into the calendar third quarter. For the last three years, you've had good sequential revenue growth in the calendar third quarter of about 6%, and you've been able to take OpEx down on average by about 3% sequentially.

So I'm just curious, is there a seasonal pattern to OpEx that we should think about for the calendar third quarter in general? And specifically, how do you see OpEx trending this September?

Kevin March - *Texas Instruments Inc - CFO*

John, I think you've said it well. In that you do tend to see some patterns similar to the numbers you just recited. Typically you'll see SG&A and R&D down a bit in third versus second. Part of that is just people taking vacations and so on for the summer holidays.

But I think this quarter you'll continue to see that trend probably in the SG&A area. But I would expect that R&D would continue to increase a little bit as we move forward dampening the overall decline that you might expect in OpEx.

And that, again, has to do with what I mentioned earlier in the call, that for a number of quarters now, we have been redeploying resources into development activities, and those costs are winding up in R&D as we redeploy those resources. So as you look into third quarter, again, you're probably going to see that G&A will probably be down again a little bit but R&D will probably be up some.

John Pitzer - *Credit Suisse - Analyst*

That's helpful.

Kevin March - *Texas Instruments Inc - CFO*

Do you have a follow on?

John Pitzer - *Credit Suisse - Analyst*

As a follow on, guys, one of the things you guys have always talked about is the consistency of growth here, and not necessarily absolute growth, albeit you've talked about modest share gain expectations every year. And just when I look at the Embedded Processing growth of over 9% year over year, to me that clearly is outgrowing the industry and the peers. So I'm curious, what do you think the cause of that is? How sustainable that is, and should we expect to see continued market share growth within the Embedded segment at these sort of clips?

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Yes, John, we'll finish the year before we declare any victory laps on market share gains. And I'd just say that if you look at that business as well as Analog, we've just had steady share gains. And we've talked about averaging between 30 basis points and 40 basis points per year. But we've had years where we've put up 100 basis point gains in the past. So again, we don't want to get ahead of where the year will end, we'll wait till the scoreboard is up before we analyze that.

But I'd just say that we continue to focus our resources in places where we can develop products that are going to be differentiated, that are going to find a long-lived position in the marketplace. And when you're able to do that, you're able to have a revenue stream in which you're able to build on.

And the great thing about both these markets is that share gain doesn't move quickly. But just steady share gains over time will make a significant difference to the business model, and we think that that is certainly showing up in the numbers today.

So thanks, John. We'll go to the next caller, please.

Operator

And next question is from Chris Caso with CLSA.

Chris Caso - *Susquehanna Financial Group / SIG - Analyst*

Yes, thank you. Just to start with a bit of a bigger picture question. You talked about some of the forecast visibility from your consignment revenue. Can you talk a little about how far out that goes, and what the order patterns are telling you? And then correspondingly, what have you seen with regard to order rates over the last 90 days as compared to the previous quarter? Are they fairly stable, improving or declining?

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Yes, so, Chris, it will depend on the customer or distributor. I'd say that typically we'll get look out on demand out for six months. Sometimes it will be longer, we'll get a longer-term forecast for them, but usually they run about six months.

Inside of a certain window, those forecasts are deemed as more firm. But that said, they can change and they can change very quickly. So we can have 100% visibility, but that doesn't mean that those forecasts can't change.

From an order standpoint, I can tell you that during the quarter, we saw orders were higher in May. They increased again in June. That's kind of what happens in a second quarter. And I'd just say that those order rates versus when we were all on a book ship business without consignment certainly were a different signal than what they are today.

So we look at those -- the orders that we have on the books. We look at the consignment forecast that we see, and we make judgments based on that and roll that all up to what we provide you in our outlook. So do you have a follow on, Chris?

Chris Caso - *Susquehanna Financial Group / SIG - Analyst*

Yes. Thanks. With regard to inventory, it looks like it was down sequentially in days, but I believe it's toward the higher end of your range. Could you talk about your expectations? I suppose that you would expect that to drop as you go into the second half. Do you have a particular target in mind for where you expect inventory to approach as we exit the year? And then what that implies for production in the second half. I know you often try to level load production given seasonality. Is that still the case this year?

Kevin March - *Texas Instruments Inc - CFO*

Yes, Chris. I don't really have a specific inventory forecast for you, per se. I will just point out a couple things on inventory to keep in mind.

Total dollars of inventory are actually down on a year-over-year basis, even though days are up, and that's' really a function of the higher profitability that the company is performing at now. When you just do the math at a higher gross margin percent, that same inventory affords more days of potential sales. So that's part of what's going on there.

But as you noted, it is down quarter over quarter on a days basis. And typically going into third quarter, typically tends to be an up revenue quarter for us. And as you mentioned, when we level load the factories that would anticipate that some of that inventory will be drained as we go through the quarter.

But we don't have a specific forecast as to days or dollars. We just expect that will probably drain somewhat going into the third quarter. And then we'll continue to adjust our loadings and our expectation for first and fourth quarter to be continued through the year.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Okay. Thank you, Chris. We'll go to the next caller, please.

Operator

Blayne Curtis with Barclays is next.

Blayne Curtis - *Barclays Capital - Analyst*

Thanks for taking my question. I'll echo the congrats on the good execution. I just want to follow back up on a prior OpEx question. How do you think about managing it? Obviously, you've gotten the question probably two years in a row on why R&D as a percent of revenue is low and it bottomed in 2015. You've grown it faster than revenue.

How do you think about over the next year or two going forward, is there a particular percentage you're managing it to or is it a function of where you can get gross margins? How are you thinking about it? And then if you can just talk about where you're deploying these new resources.

Kevin March - *Texas Instruments Inc - CFO*

Okay, Blayne. So just a first at a 50,000-foot level, we've talked in the past about our total OpEx will probably fluctuate between 20% and 30% of revenue. Meaning that in weaker markets, we might be working at the higher end of that range, in stronger markets we'll run at the lower end of that range. Here in the last couple years, we've been around the middle of that pack, around 23%, 24%, 25% kind of range. That's kind of a high-level look at OpEx as a whole.

Now more specifically on R&D, when it comes to allocating capital, and R&D is certainly a place where we allocate some of that capital to, it's a pretty important thing for any management team to pay attention to. We take it extremely seriously to make sure that when we do allocate to R&D, we're allocating in areas that we believe that we can actually develop differentiated products with very long revenue streams and very high-margin opportunities. The idea is to maximize the amount of revenue we get on an R&D dollars spent.

So it's not a percent, per se, that we're trying to manage to. It's an opportunity that we're going after.

And as we just talked about earlier in the call, some of our R&D spending is actually of moving up a little bit even these past few quarters and will probably continue to move up in the next few quarters. As we are seeing opportunities to reallocate some of our resources from where they have been into development areas for R&D purposes that will just extend the overall availability of our products into new marketplaces. So we really look at opportunistically and not based upon a particular model or a percent of revenue or anything like that.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Do you have a follow on, Blayne?

Blayne Curtis - *Barclays Capital - Analyst*

Maybe just switching gears to the auto market. There's been concerns all year, but I think the data points have been stronger than not. Just curious your perspective on that market as you go into September in terms of inventory and the strength you saw, was that more a function of units or was it more content gains for you?

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Clearly, what's driving the market today we believe is content gains. And if you have visited an auto showroom any time in the last year, that's pretty obvious to see with the new models that are coming out. Our belief is that automotive sales will fluctuate much like they have in the past into the future, but certainly overall, the content gain is what's growing things.

So as Kevin said, when you look at the automotive market, we're making investments that will produce revenue five and 10 and 15 years out into the future. If things were to weaken in that market and we don't know if that's going to be next quarter or five years from now when that does, but we know how to handle those types of situations tactically. But it won't really change our investment levels and what we believe will be the drivers for our business and really the industry over the next five and 10 years. Hope that helped, Blayne.

We'll go to the next caller, please.

Operator

That question comes from Vivek Arya with Bank of America-Merrill Lynch.

Vivek Arya - *BofA Merrill Lynch - Analyst*

Thank you for taking my question. I have a question on your Embedded versus Analog margins. I'm curious, how much of that delta is at a gross margin level, and how much is at an OpEx intensity level?

And if it's on a gross margin level, what levers do you have? Is it just that you can move a greater proportion of these products to 300-millimeter, or --? I'm just trying to get a sense for how much improvement you can make in Embedded margins without necessarily depending on sales growth?

Kevin March - *Texas Instruments Inc - CFO*

Yes, Vivek. I would say we disclose by segment the revenue and the operating profit, and we don't dig into too many details underneath that as to what's happened between the lines.

I would say that at the gross margin level, obviously, it does benefit from our continued efforts to lower our manufacturing costs. So that's clearly happening inside there. From an OpEx standpoint, we have been reducing OpEx for a couple years up through about May of last year, and we've got that OpEx now mostly at the level that we want it at.

So it really is a question of being able to drive revenue growth and get leverage off the OpEx that we have. And that leverage then falls straight through to free cash flow, which is a direct benefit of course for our shareholders based upon the formula that we've talked about with capital management. So that's how we tend to look at it, as opposed to trying to force a model on it that the two segments being comparable, we look at what they can actually generate bottom line.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Do you have a follow on, Vivek?

Vivek Arya - *BofA Merrill Lynch - Analyst*

Yes. Thanks, Dave. So maybe you could help us quantify how much of your Analog sales are on 300-millimeter now and how much of your Embedded sales on 300-millimeter? Thank you.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Yes. Vivek, we talked about in our capital management call that we ended last year with about $2 billion of our Analog revenues, which were roughly about $8 billion in that year on 300-millimeter. So approximately 25% of revenue.

I will say that when you look at that factory where we're building it, it's our Richardson fab, or we call it RFAB for short, that will support $5 billion of revenue when it's completely full. And if you look at that $5 billion, one of the reasons why we believe that our manufacturing and technology is one of the competitive advantages that we've got is because that $5 billion is significantly larger than any of our Analog competitors that we've got.

So that level of scale just doesn't make sense for them. And beyond RFAB, we've got and qualified our second 300-millimeter factory that we creatively call DMOS-6, it just sits a little less than a mile from the office that we're currently in.

So I can say that we did qualify that at the end of last year as we were anticipating, and we have revenue generating wafers that are running through that factory today. So we'll update next year on our capital management call where we stand on that overall utilization. Our intention is to build more product inside of there, but we'll wait until then to update it.

Kevin March - *Texas Instruments Inc - CFO*

Just to a different part of your question, Vivek, that DMOS-6 that Dave was just talking about is shared with Embedded Processing, in fact. So that is where some of the Embedded Processing 300-millimeter production occurs at.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

That's great. Okay. Thank you, Vivek. We'll go to the next caller, please.

Operator

And next caller will be Tore Svanberg with Stifel.

Tore Svanberg - *Stifel Nicolaus - Analyst*

Yes, thank you. Great execution. I guess the first question that I have is, I was hoping you can comment a little bit on what customers are telling you these days as it relates to the consolidation the industry is seeing.

Are they coming to you and perhaps asking you to get into certain businesses? Because I assume they must be a little bit concerned about there being less and less suppliers. Just curious if some of those discussions have already happened with your customers.

Kevin March - *Texas Instruments Inc - CFO*

The only time that we had a conversation with our customers about consolidation was when we acquired National Semiconductor. And at that point in time, we had a lot of customers congratulating us and pleased that we were doing it because they knew we were friendly with business terms. Aside from that, I cannot point to any example of a customer coming to us and saying anything about the consolidation going on in the industry and what they think we should be doing about it.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Yes. And I'll just add to that, Tore. If you think of the business model that we're trying to put together, it's not focused on one customer or one or two products. Where if you saw consolidation as an OEM, you might have significant concerns and maybe go to one of those company's competitors.

So I think to a large extent, that's probably why we don't have those overall concerns. Obviously, as you know, the analog market continues to be extremely fragmented, both from a customer base as well as suppliers, even with the consolidation that we've seen. Do you have a follow up, Tore?

Tore Svanberg - *Stifel Nicolaus - Analyst*

That's really helpful. As a follow up, just back to the near-term environment, so you talked about the sell-throughs probably being better than expected. Do you think that was basically customers being too conservative, or do you think customers are actually seeing strengthening in demand on their end?

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

I would us just say, Tore, overall, I think that we've -- we're operating in a similar macro environment to what we've seen in actually recent years. And that's just an environment that I'd say that it's okay if I used one word to describe it, it's not really strong, it's not really weak. And we're operating in that type of environment.

I think the benefit of us having consignment and having consignment with distribution is that our revenues more closely match that demand. That doesn't mean that they can't change quickly in the future at some point. But certainly we're shipping what we believe -- what we know for sure on that portion of demand is or about those shipments is very, very close to actual demand and consumption.

So thank you, Tore. And with that we've got time for one more caller.

Operator

Sure. And that question will come from Timothy Arcuri with Cowen and Company.

Timothy Arcuri - *Cowen and Company - Analyst*

Thank you so much. I guess I had two. First of all, can you talk a little about Brexit? I know that it seems like you're not seeing any impact from it, but can you talk just a little about whether you saw any perturbations around it or you've seen any spins? Or what might worry you if anything around Brexit going forward?

Kevin March - *Texas Instruments Inc - CFO*

Tim, I would say that we really -- it's pretty much impossible for us to be able to make a comment directly on that. Indications I've seen, the British economy is probably about 4% of the global GDP. So even if there was a wobble inside that economy, it's going to be really hard for us to be able to detect it.

I would say that what we really do see is our customers are global, they sell globally and it's the larger macro environment that we're in. And as Dave said a few minutes ago, that macro environment has been and we believe will continue to be relatively slow. So it's up to us to execute as best we can inside it and gain market share.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

Follow on, Tim?

Timothy Arcuri - *Cowen and Company - Analyst*

Yes. And then just back to personal electronics, I'm going to ask it a little bit of a different way. I think you said last call that it would be a little less of a headwind in the second quarter than it was in Q1. It sounds like it was less of a year-over-year headwind.

Can you commit at least to it being even less of a headwind in the third calendar quarter? Or the reason why I ask is because it's a pretty big hockey stick as this all normalizes. So I'm just trying to figure out when that hockey stick is going to come. Thanks.

Dave Pahl - *Texas Instruments Inc - VP & Head of IR*

I won't try to get that granular on any one customer or any one market in providing a forecast. I'll just say that typically and what we saw last year, certainly PE had a very strong back half, and we saw the demand weaken very, very late in the quarter. So we've seen a headwind year on year the last two quarters as we described.

So I won't put together a forecast for you in the second half, but I'd just point out that we did have a very strong second half last year. So I hope that helps a little bit. And with that, we will wrap up and thank you for joining us today. A replay of this call is available on our website. Good evening.

THOMSON REUTERS

Operator

Thank you. That does conclude today's conference call. We do thank you for your participation today.