Company Name: Broadcom
Company Ticker: AVGO US
Date: 2017-06-01
Event Description: Q2 2017 Earnings Call

Market Cap: 125,245.57
Current PX: 316.40
YTD Change($): +62.12
YTD Change(%): +24.430

Bloomberg Estimates - EPS
Current Quarter: 5.179
Current Year: 22.932
Bloomberg Estimates - Sales
Current Quarter: 5687.458
Current Year: 24406.481

Q2 2017 Earnings Call

Company Participants

- Ashish Saran
- Hock E. Tan
- Thomas Krause

Other Participants

- Blayne Curtis
- Vivek Arya
- Craig M. Hettenbach
- Ross C. Seymore
- Amit Daryanani
- Toshiya Hari
- Harlan Sur
- John William Pitzer
- Stacy Aaron Rasgon
- Ambrish Srivastava
- Srini Pajjuri
- Stephen Chin

MANAGEMENT DISCUSSION SECTION

Ashish Saran

Financial Measures

In addition to U.S. GAAP reporting, Broadcom reports certain financial measures on a non-GAAP basis

A reconciliation between GAAP and non-GAAP measures is included in the tables attached to today's press release

Comments made during today's call will primarily refer to our non-GAAP financial results

Hock E. Tan

Performance Overview

I am actually quite pleased with our performance for the second fiscal quarter with solid contributions from a broad number of our franchises

We delivered strong financial results with revenue, gross margin and EPS all above the top end of our guidance

Second quarter revenue of $4.2B grew 1% sequentially and 18% year-on-year

The seasonal sequential decline in our wireless segment was less than expected and more than offset by contributions from all other segments

All segments, even wireless, delivered year-on-year revenue growth

On the income front, EPS were $3.69, growing by 2% sequentially and 46% year-on-year

Segment Results

Wired Business

Q2 Performance

- Let me now turn to a discussion of our results by segment
- Starting with wired, our largest segment
- In Q2, wired revenue was very stable at $2.1B, growing 1% sequentially and 3% year-on-year
- The wired segment represented 50% of our total revenue
- Wired continue to remain a very consistent end market and perform in line with expectations
- As you may recall, in the preceding quarter, wired revenue included approximately $60mm of revenue related to the assignment of certain manufacturer's right to a customer
- This did not repeat in Q2
    - However, we were able to more than make up for this amount with growth from enterprise networking and the start of a seasonal increase in demand for our broadband access and set-top box products

Q3 Outlook

- Turning to the third fiscal quarter, though we expect seasonal strength in broadband and sustained cloud data center spend, and consistent with this outlook, we expect wired revenue growth to accelerate into mid-single digit sequentially

Wireless Business

Q2 Performance

- Moving onto wireless, second quarter wireless revenue was $1.15B, declining by 2% sequentially but growing 45% year-on-year
- The wireless segment represented 28% of our total revenue
- The low-single-digit sequential decline in revenue was better-than-expected due to stronger-than-anticipated end market demand
    - The sequential decline was driven by the bottom of the annual product cycle transition at our major North American customer, offset by the ramp of the next-generation phone at our large Korean smartphone customer
- Generation to generation, we also benefited from a significant increase in Broadcom's cellular and Wi-Fi conductivity content

Q3 Outlook

- Moving on now to Q3, we expect to see the beginning of H2 seasonal growth in our wireless segment revenue
- We expect this growth to be driven by the start of a ramp from a large North American customer as they transition to their next-generation platform
  - On top of this, we are also expecting a substantial increase in our total dollar content from the eight Broadcom products we will be supplying into this new platform
- The initial ramp of this next-generation platform, however, appears slower this year compared to prior years, but we believe this will likely accelerate in our fourth quarter
- Our third fiscal quarter outlook reflects this expectation and notwithstanding the 40% content growth
- We project sequential growth in our wireless revenue to only approach double digits on a percentage basis
  - This outlook also reflects an expected decline in shipments to our large Korean smartphone customer

Enterprise Storage Business

Q2 Performance

- Let me now turn to enterprise storage
- In Q2, enterprise storage revenue was $712mm, growing 1% sequentially and 36% year-on-year
- Storage segment represented 17% of our total revenue
  - Surprisingly, this segment continued to hold up and perform as expected
- Hard disk drive and custom SSD shipments grew, while SaaS and RAID sustained, offset by a seasonal decline in fiber channel shipments

Q3 Outlook

- During our previous earnings call, we expressed a cautionary tone around enterprise storage for Q3
  - However, we continued to see stability and most of all sustained bookings
- We expect storage revenue to grow in the low-single-digit sequentially into Q3

Industrial Business

- And finally, our last segment, industrial
- In Q2, the industrial segment revenue was $223mm, growing by 24% sequentially, much better-than-expected, primarily due to higher IP, intellectual property that is licensing revenue from a large deal we closed in the quarter
- Industrial revenue grew 23% year-on-year and represented 5% of our total revenue
- Re-sales of our industrial products continued to trend up very firmly in the second
  - And we expect this to continue to be strong into the next quarter
- As we look to Q3, we expect industrial revenue to grow in the mid-single digits sequentially

Summary Comments

So, in summary, demand in Q2, which is historically our weakest seasonal quarter, was stronger than expected

For the third fiscal quarter, end markets in wired, enterprise storage, and industrial continue to be strong, while wireless turns around and starts a slower-than-usual seasonal H2 ramp, although we do expect it to accelerate dramatically in Q4

- This leads to our projection of consolidated revenue growth of around 6% sequentially for Q3

Thomas Krause

Financial Performance

My comments today will focus primarily on our non-GAAP results from continuing operations unless otherwise specifically noted

A reconciliation of our GAAP to non-GAAP data is included with the earnings release issued today and is also available on our website at broadcom.com

Revenues

- As Hock discussed, we did deliver strong financial results for Q2 starting with the revenue of $4.2B, which grew by 1% sequentially
- Year-on-year growth for Q2 revenue was 18%, which I would notice continues to be well ahead of our long-term growth rate targets of mid-single digits
- Foxconn was the only greater than 10% direct customer in the second fiscal quarter

Gross Margins

- Our second quarter gross margins from continuing operations was 63.1%, 70BPS higher than our prior quarter and 110BPS above the midpoint of guidance
- The improvement in gross margin is primarily due to higher revenue and better-than-expected IP licensing revenue within our industrial and other segment
- I would note we do expect to be able to sustain these gross margins going forward

OpEx

- Turning to operating expenses, R&D expenses were $677mm and SG&A expenses were $122mm totaling $799mm or 19% of net revenue for Q2
  - This was slightly higher than guidance as we accrued for a larger projected annual bonus compensation expense driven by better-than-expected operating income
- As I mentioned last quarter, we are comfortable at this relative level of operating expense given our current portfolio of businesses

Operating Income

- Operating income from continuing operations for the quarter was $1.85B and represented 44.1% of net revenue

- We now have line of sight to achieving our long-term operating margin target of 45%

Provision for Taxes and Interest Expense

- Provision for taxes came in at $78mm, slightly above our guidance
  - This is primarily due to higher-than-expected net income
- Second quarter interest expense was $112mm and other income net was $3mm

Net Income and EPS

- Second quarter net income was $1.67B, and earnings per diluted share was $3.69
- Our share-based compensation expense in Q2 was $216mm

Balance Sheet and Cash Flow Summary

- Moving on to the balance sheet, our DSO were 45 days, an increase of two days from the prior quarter due to a reduction in linearity of revenue in the quarter
- Our inventory ended at $1.31B, a decrease of $25mm from the beginning of the quarter
- We generated $1.58B in operational cash flow, which does include the impact of an increase in working capital
- Expenditures on classic Broadcom restructure integration activities continues to decline as expected as we expended approximately $50mm in cash on these activities in Q2
- FCF in Q2 was $1.33B or 32% of net revenue
- I would note we are making very good progress towards our long-term target of 35%
- CapEx in Q2 was $256mm or 6.1% of net revenue
  - As a reminder, we do expect our long-term CapEx to decline to about 3% of net revenue
- A total of $437mm in cash was spent on company dividend and partnership distribution payments in Q2
- We ended Q2 with cash and short-term investment balance of $4.45B
- Our cash balance is running at elevated levels, which we expect will continue through Q3 in anticipation of closing the pending acquisition of Brocade

Q3 FY2017 Guidance

Now let me turn to our non-GAAP guidance for Q3 FY2017

This guidance reflects our current assessment of business conditions, and we do not intend to update this guidance

- This guidance is for results from continuing operations only

Revenue and Gross Margin

- Net revenue is expected to be $4.45B, +/- $75mm
- Gross margin is expected to be 63%, +/- 1 percentage point

OpEx and Tax Provision

- Operating expenses are estimated to be approximately $787mm
- Our tax provision is forecasted to be approximately $86mm

Net Interest Expense and Other

- Net interest expense and other is expected to be approximately $100mm
  - Note this reflects anticipated interest expense on our long-term debt of $112mm offset largely by other income, including interest earned on our cash balance

Share Count and CapEx

- The diluted share count forecast is for 456mm shares
- Share-based compensation expense will be approximately $255mm
- CapExs will be approximately $240mm

Shareholders Return

- As you will have seen, our board has declared a dividend of $1.02 per share to be paid later in this fiscal third fiscal quarter
- We are looking forward to completing the acquisition of Brocade, which is proceeding as planned, and subject to the satisfaction of the remaining closing conditions, we presently expect to close this transaction on or about July 31, 2017

QUESTION AND ANSWER SECTION

<Q - Blayne Curtis>: Just sort of a follow-up, on the wireless side, you said a slower ramp. I'm just kind of curious, is this just the timing or magnitude? I think you just meant that it's going to be more at Q4, but maybe if you could just wrap some color around that.

<A - Hock E. Tan>: It's timing. I think it's timing. Last year, the similar ramp was earlier in – it was stronger in Q3 probably because it was earlier. And here the initial volume in our fiscal Q3 was smaller, made up with content on our side, but definitely Q4 is forecast to be larger.

<Q - Blayne Curtis>: Got you. And then you mentioned this on the storage side, you had some conservativism on at H2 and you're seeing growth. Maybe you can just talk about what you're seeing on the storage side that is growing. And then what are you seeing – I think your hard drives are where you're most concerned. What's making you feel better about that market?

<A - Hock E. Tan>: Well, it's growing. It's growing, as we mentioned, pretty much single digits, low-single-digit. I would say it's at a high elevated level and kind of staying there for now in Q3. Q4, of course, as we expressed in a cautionary manner, is a whole new game and visibility is – we obviously are not booking everything in Q4 yet, but we've pretty much booked Q3.

<Q - Vivek Arya>: Great job on the consistent execution. For my first question, Hock, can you please address these recent media reports about the potentially large bid for Toshiba's assets? I realize the details are not public but there is a very large amount of money involved. And I think investors are keen to know how you are thinking about it conceptually and whether you are still committed to being disciplined around maintaining your FCF returns and not taking big technology risks when you consider M&A.

<A - Hock E. Tan>: We are very committed to our business model of only having franchises, very much so. And as I mentioned, all 18 our product lines are product franchises in connectivity solutions. We are also very committed to not only those franchises but generating lots and lots of FCF which half of which we will return to shareholders. [Indiscernible] (18:07) model, no change. Bottom line, don't believe everything you read out there, please.

<Q - Vivek Arya>: I see. And then secondly, on the wireless business, I think you gave some good color for Q3. Just one question on Q4 and then maybe longer term. Q4, when I look in the last five years, the median sort of sequential growth has been close to 30%. So is that the kind of level that you are thinking about this year or maybe even better given the delayed shipments of those phones and the higher content you suggested? And then longer term on that same wireless team, I think one of your competitors, Qorvo, recently outlined some plans to perhaps take some share at your large customer with a high-band pad, and I wanted to see how secure you think your competitive position is on next year's phone models. Thank you.

<A - Hock E. Tan>: Boy, that's a lot of questions and content. Let's start with the serious one. We don't forecast beyond one quarter. Bad practice, frankly, because we could be very sadly wrong. But obviously what we are also saying is from the limited visibility we see, we see the ramp beginning in our fiscal Q3, which as you know is an off calendar ramp by one month, July, so we capture a part of that ramp, I believe, we believe it's a small part, and we expect to capture the substantial part of that ramp in Q4. But keep in mind [ph] you can't (19:53) always – when you compare year-on-year, we have different content levels from a year ago, substantially, as I pointed out. So that might kind of confuse the numbers somewhat.

But suffice to say, Q3 as we outlined, since the beginning of the ramp, may not be the same level of ramp if you compare to a year ago for a couple of reasons I mentioned, but we also see Q4 to even ramp up even more substantially, obviously because if Q3 is slower, it's more than likely Q4 in any product ramp will just show a stronger quarter compared to Q3. So that said, but other – the specifics, really we're – I'm not really at liberty to disclose it because we just don't go look that far out. As far as the trash talk you hear all day, seriously we don't prefer to – I prefer not to comment on that.

<Q - Craig M. Hettenbach>: I'll just follow up on wireless on the content side. Can you give maybe a little bit of a context if you split kind of the legacy Avago on RF relative to the Broadcom kind of connectivity and maybe touch piece?

<A - Hock E. Tan>: I'm already stretching a lot to say there's a certain North American customer we have very good content. It's a customer we dearly value. I prefer not to give you any more details other than that. Thank you.

<Q - Craig M. Hettenbach>: Okay. I'll try another one on the networking side. Can you talk about just the trajectory in the merchant silicon business and any new kind of customer adoptions or ramps to think about there?

<A - Hock E. Tan>: Well, we feel very good about our merchant silicon in switching and now routing as we call it, which is the DNX Series on the Jericho, Jericho+ and all that, and we have launched that. And they are used not just as routers, they're used as aggregation switching in the spine. And so it's a very good application, so we pretty much cover in our merchant silicon even at the high performance, high-capacity, top-of-the-rack switching. We pretty much cover a full range of requirements, and so that's going along very well. In fact very, very – and the penetration especially in the cloud guys, is very, very good. Adoption among the hyperscale cloud guys is extremely strong, extremely well-used.

And while all this is going on, some penetration in enterprise is happening, but here in enterprise, traditional enterprise, our ASIC switch and routers continue to run very, very well through our OEM partners.

<Q - Ross C. Seymore>: Congrats on the strong results. Hock, just had a couple questions on your wired segment. One of the larger customers in there guided recently, and a little weaker than expected for their June quarter, and talked about some weakness on the service provider side. So rather than by product type, if you talk about customer types, are you seeing any change in the customer behavior that is under the covers within that mid-single-digit growth that you're talking about?

<A - Hock E. Tan>: No, we don't. We see in this third quarter very good data center spending, and as I said, a lot of this – I assume when you say service provider, you mean the cloud guys. And the cloud guys are very much focused on using merchant silicon on switching and routing connectivity solutions. And we see very strong spend, which is part of the reason why we are raising our sequential growth in Q3 from Q2 in wired to be up to mid-single digits.

Of course, it's also helped by the seasonal uptrend we are seeing in broadband access and set-top box, which is CPE. That's typical seasonality, but it's not entirely that. It's also switching and routing in data centers.

<Q - Ross C. Seymore>: And as a follow-up still within that same segment, on the broadband segment that you just talked about, talk a little bit about what DOCSIS 3.1 can mean for you. With that rolling out, is there a chance that things can be a little better than seasonal in your broadband business as we go into H2 the CY or are there offsets that we need to appreciate?

<A - Hock E. Tan>: I never tried to be too optimistic. At this time of the year, we see always the typical seasonality, and boy, are we seeing it now. Now, and bookings at Q3 and the beginning part of Q4, very strong bookings. But I like to consider that seasonality rather than unusual seasonality. This is normal.

<Q - Amit Daryanani>: A couple questions from me as well. I guess to start off with, if you look at your operating margin target around 45%, you guys are at 44.1% right now, and I think Brocade alone, once it closes, gets you north of that. So how should we think about margins as you go forward? Is it a desire to keep taking margins higher, or do you think there's price elasticity in this market where you could perhaps keep margins the way they are and drive revenue growth faster?

<A - Hock E. Tan>: Boy, you asked very complicated strategic question.

<Q - Amit Daryanani>: Hopefully that's a good thing.

<A - Hock E. Tan>: I know you do very impressive questions, but you won't get as impressive an answer, though, I have to say that, because all we are doing is we sell based on the value-add that we provide our very key customers. That's really what it is. And we believe we deserve and get the value-add that we provide in our products to the solutions of our customers. And we think it will drive us to 45%. It's a fairly, fairly decent way to get there.

<A - Thomas Krause>: Yes, Amit, at this point we're not updating our financial model. We're not updating our operating margin targets so we're very comfortable at 45%.

<Q - Amit Daryanani>: Fair enough. And if I just follow up. As I think of your gross margin guide for the upcoming quarter, you have a nice 6% uptick in sales but you're talking with gross margin being flat, even though I think the headwind from wireless not being up as much, should be a benefit. And last year I think your gross margins are up like 40BPS, 50BPS in July. Why can't we see the same level of leverage given mix might be better this July vs. last July?

<A - Hock E. Tan>: Well, we kind of give you what we see. We hate to miss forecast guide as you probably know, so we kind of give you something that we feel very comfortable with. And we are very comfortable at the midpoint of 63%, which you're right, we achieved it last quarter.

<A - Thomas Krause>: And, Amit, I think we're going to be able to sustain in and around that number. I think you're right, there's some wireless mix and slightly headwind. We've also worked through a lot of the Broadcom synergies and the benefits we received there, but I think we plan to sustain that going forward.

<Q - Toshiya Hari>: Congrats again for the strong results. I had a question on the long-term revenue growth target. Obviously, you guys are committed to the mid-single-digit target that you've put out a couple of quarters ago. But as you pointed out, you grew 18% in the April quarter. If we take the midpoint of your July quarter guide, I think you guys have the quarter growing at about 17%. I realize the growth rate in enterprise, for example, is not necessarily sustainable, but what prevents you from raising the target to, say, high-single digits on a long-term basis?

<A - Hock E. Tan>: On a long-term basis, no, because don't forget, the characteristics of our product lines, all 18 of them, even the 19th one eventually, Brocade, they are very sustainable. That's the single most important criteria: sustainable franchises. That means they deliver value-added and they keep delivering it generation after generation. They are not there to grow like weeds. They are not. But they grow like GDP, pretty much, economic growth. We've [ph] and add (29:13) for the fact that each generation provides further value-added, which entitles us to have slight premium but not much and, hence, it's mid-single digits, which is GDP but plus that slight premium. No more than that. And that is long-term the sustainable basis because it's the nature of the products we invest in, the nature of our business model.

What you see now, I think, is a short-term event which has driven the 18%, 17%, 18% as we mentioned year-on-year in Q2 from last year is driven by two parts is my view on this whole matter. One is wireless. Q2 of a year ago – it's not because Q2 this year is strong as much as Q2 a year ago in wireless was unusually weak, for good reasons, many of which I will not go into, but you all know that. And this quarter is more of a normal Q2, perhaps somewhat buttressed by a strong launch of our big Korean customer. It's kind of stronger than we expected, as I mentioned. So a big part of that double-digit growth is wireless growth driving in, and that's 30% of our total revenues approximately. So if it grows a lot, it has that impact.

And the second part of it is on infrastructure, our business in wired, industrial, and enterprise storage. This year, 2017, business is just strong. The tide just rose. And I think that's the other part that drove this double-digit growth. But you don't see that every year. In fact, I think this year it's fairly unusually strong for infrastructure, apart from wireless infrastructure itself.

So that combination is what creates this 18% growth. I would not, for a second, like you guys to believe that this is something we will sustain for the next five years. What we feel comfortable we can sustain for the next five years is what we have said before and will continue to deliver hopefully over the next 5, 10 years, which is mid-single-digit growth on average year-after-year.

<Q - Toshiya Hari>: Okay. Got it. Thank you. And then as my follow-up, just wanted to ask a follow-up question on M&A, and I realize that the topic can be a little bit sensitive here. But, Hock, you told us to not believe everything we read in the papers. Is it okay for us to walk away thinking that you're not making the bids for that specific asset? And again, I think as the gentleman asked the question before...

<A - Hock E. Tan>: Let me reiterate. Please do not believe everything you read and we do not comment on any rumors and PR speculation in the headlines. But we continue to focus on our franchise stable business model. We have lots of FCF.

<Q - Harlan Sur>: Congratulations on the solid results and outlook, and just great execution by the team. On the topic of FCF, you guys generated 32% FCF margin. But if I normalize for your target of 3% CapEx, you guys actually did 35% FCF margins which is your target model. But I'm wondering, despite the great cash generation, do you guys still have some restructuring acquisition-related cash charges which would imply that the normalized FCF even now is better than what you've printed and maybe if you guys could quantify some of those cash restructuring charges?

<A - Thomas Krause>: No, you're right. You're doing your math absolutely right. The company, when you take into account the elevated CapEx for mostly the campus investments we're making that you're aware of and some incremental restructuring charges and frankly some working capital headwinds as the business continues to grow, you'll quickly get to 35% in which is where we want to be and obviously we had to continue to put up those numbers going forward based on where we see revenues and the gross margins and operating expenses that we outlined for you. We think that's achievable.

<Q - Harlan Sur>: Great. And then for my follow-up question within enterprise storage, you guys have got a leadership position in server RAID and SAS controller solutions, and typically these products tend to track server shipments. So given Intel's Skylake server CPU launch and you've got AMD's EPIC server CPU launch, both I think which are ramping now, is this contributing to the growth here in the July quarter and maybe through H2 this CY?

<A - Hock E. Tan>: Not in the quarter we just ended, Q2, nor necessarily much in the July quarter, Q3. But certainly we expect Purley, which is the generation you're talking about for Intel launching Skylake. The Purley generation in storage will start to ramp up. You're right, back half of this CY. Really back half of this CY.

<Q - John William Pitzer>: Congratulations on the strong results. Hock, I wanted to talk a little bit about the wired results just for the April quarter. There's a lot of different businesses inside of wired but the 3% y-over-y growth rate I think is kind of the slowest growth rate that we've seen since the financial crisis. And so I'm just kind of curious if you could give us a little bit of color as to what actually happened in the April quarter, where there was strength and where there might have been some relative weakness. And then as you think about sort of the re-acceleration into July, maybe some color around segments within wired would be helpful as well.

<A - Hock E. Tan>: Wow. That's interesting and a very confusing question. But let me try somewhat. And for the rest, I might have to take it offline another time because there are a lot of moving parts. And you're correct, in our wired segment, which represents 50% of revenue, we throw in the kitchen sink. Not really. All related to wired. There's actually a couple of chunks on broadband, which is broadband access, carrier access, as well as CPE set-top box. And in Q2, those were not that strong, obviously. It starts ramping up seasonally Q3, Q4, Q3 to Q4. So there is that effect that is not as strong, and year-on-year, a year ago, a year of ago if you recall, that was the Summer Olympics.

So we're comparing this to Summer Olympics, which will make it tough. And in Q3, Q4, that's post-Summer Olympics of last year so it begins to look very good, which is what accelerates this in H2. In switching and routing, we continue to feel very, very good. Whether it's in ASIC or merchant silicon, off-take delivery shipments continue to hit all-time high in those two segments.

I hope that gives you enough. And then third thing that messes it up is we have building block products like PHYs, retimers, which are more unique to the designs that have been used, as well as fiber optics, which has gone through very interesting gyrations and cycles that may mess up the number.

But the two broadest area, broadband compared to a year ago is a hard compare because of Summer Olympics, but switching and routing, be it SMA, continues to be a very, very strong franchise, whether it's in the form of an ASIC or in the form of merchant silicon, even though they are both selling into very different end users.

<Q - John William Pitzer>: That's helpful. And then, Hock, maybe for my follow-up, on the ASIC side, I sort of have a general question. You've always had a strong switching, routing ASIC business. It's my understanding you're also doing ASICs to things like SSD controllers and perhaps to things like inference or deep learning. I'm just kind of curious, how do you think about the ASIC IP that Broadcom has? And would you consider that a franchise? And is it leverageable into areas beyond just switching and routing?

<A - Hock E. Tan>: Oh, yeah. You hit it right on. We do deep learning ASICs, that means customized deep learning chips for specific customers. We do that because we have all the IP in hardware needed. Keep in mind, I believe deep learning is very much as much a software play, much more than a hardware play, but we are happy to enable that for specific large customers in ASICs. We've customized hardware, which we do even right now and be it training or inference. But we do that.

Then on SSD controllers, yeah, we do a huge amount of SSD controllers relatively speaking basically for enterprises only, large enterprises, but they are all parked in our enterprise storage business. They're not parked in our wired business.

<Q - John William Pitzer>: Got it. Helpful.

<A - Hock E. Tan>: And that business is doing very well as you probably can gather to-date. Okay.

<Q - Stacy Aaron Rasgon>: First, I wanted ask about the cash flow. So again we can see the margins are bumping up if you normalize close to 35%. What about the payout ratio? So the payout ratio is still running around 5%. We're not close to 50%. What's stopping you from bringing it closer to 50% earlier? What's the trajectory that we should be thinking about [ph] to be (39:36) that target payout ratio?

<A - Thomas Krause>: Yeah, hey, Stacy. I think we iterated a couple of quarters back when we put in place the updated financial policies that we're going to evaluate that once a year at the end of our FY, so that'll be in October-November timeframe. We're going to look back over our last FY, look at that cash flow generation, look at the sustainability of the businesses that we're focused on and then make an assessment obviously with the board's approval around a recommendation. But what I want to reiterate is you're right, as we've continued to perform, if we maintain, which we plan to do, our 50% payout, then that's going to lead to obviously an increase and potentially a substantial increase in dividend come the end of the year.

<Q - Stacy Aaron Rasgon>: Got it. Thank you. For my follow-up, I don't want to beat a dead horse, but can you refresh us on your definition of a franchise? What are the characteristics of a business that meets that definition? And frankly, would it be possible for a NAND flash business to qualify as a franchise under your definition?

<A - Hock E. Tan>: Good try. Okay. Let me give you our definition of franchise, which is very open and I'm glad you asked. Give me a chance to repeat the mantra. No. A franchise basically is – we do only components, semiconductor components or just components broadly. It's simply that it operates – the product line operates in a niche. It doesn't have to be mass market. Most times it's a niche. It's a niche where the markets have been established and will likely continue to be established for the foreseeable future. So we must have established end markets that are sustainable, one. And in that niche, in that market, we are the market leader.

And more than a market leader, especially because when we are – the reason for us to be the market leader, we are the technology leader. We have to have the IP, we have to have the technology and the capability to continue to lead in that particular market. And that's it. There's nothing financials about it. The financials is a fallout, a corollary fallout from those key criteria, and each of our 18 product lines meet those criteria. You make your own call whether NAND meets that criteria

<Q - Ambrish Srivastava>: And I'm glad I'm restricted so I can't publish. I don't have to describe what you meant by franchise to clients. But thanks for letting me ask a question. I wanted to go back to your wired franchise, Hock. You talked about – and this is a follow-up to John Pitzer's question, with regard to newer areas and all within the umbrella of the 5% that you've articulated for the company quite well over the last couple of years, is there something that this is a one-off that you've done or do you see this as a broader volume with multiple customers as we go through the year and next year?

<A - Hock E. Tan>: Would you repeat that one? I must've missed some part in your question. [Indiscernible] (43:19)

<Q - Ambrish Srivastava>: Yes, the deep learning? Sorry.

<A - Hock E. Tan>: Oh, okay. So…

<Q - Ambrish Srivastava>: The deep learning ASIC that you are rolling out, is it a one-off for one customer or do you see this expanding to multiple customers?

<A - Hock E. Tan>: That deep learning product we're doing for multiple customers today are all customized solutions, hardware solutions on our side. They're not software-based solutions. It falls into our ASIC category. We have all kinds of intellectual property, all largely hardware-based like SerDes, much more in SerDes memories, you name it, all kinds of stuff that goes into training and inference on a deep learning chip. We have all that IP but we're only doing hardware. We make no pretensions to trying to make it a full solution. So it's an ASIC solution and it covers multiple customers and it probably covers multiple generations going forward. But it's really simply an ASIC solution.

<Q - Srini Pajjuri>: Hock, I just want to ask a clarifying question to the previous answer. Some of your peers are putting this market opportunity close to $30B. I just want to hear your thoughts of how big the ASIC opportunity for deep learning in your opinion is if you take maybe a three-year view on this.

<A - Hock E. Tan>: I have no clue, to be honest. Seriously, no. Our franchise here is the intellectual property capability we have of implementing silicon solutions that does deep learning. We could just as well have the IP implemented to do high-performance computing or, as we do now, a lot of switching and routing. This we do in deep learning. And for us, deep learning is not seen necessarily as a franchise. It's our ASIC capability that is a franchise.

<Q - Srini Pajjuri>: Got it. And then I know you said you don't want to comment on your competitors' trash talk, if you could maybe comment on in terms of your BAW performance, I think historically the reason you had such a significant share was you had a significant performance advantage over your competitors. I'm just trying to understand if some of your peers are closing that gap or at least narrowing the gap. And as we look out to the next couple of years, I just want to understand how much advantage you'll still have in BAW.

<A - Hock E. Tan>: Oh, remember my definition of a sustainable franchise? We don't stop investing. I mean, contrary to the myth out there, we actually, every time we fix a particular product line as our core product lines [indiscernible] (46:33) 18, we invest as much as we have to to maintain, if not lengthen, our lead. No different here. We don't stay put at the generation of last year or two years ago or three years ago. We continue to invest. The lead, to be direct with you, never closes. And that's the key part of our model.

We will invest, and given that your market – we've been the market leader in that niche, we can afford to out-invest anyone out there. We put in in R&D for this entire company, as you notice that in totality, some of it popped up in cost of sales or product engineering as we bring it to production. The rest of it in R&D. We spend on product development in this company every year $3B, and that's not counting CapEx. $3B, and we are very, very conscious of the fact that we have to maintain, if not even increase, that level of spending where we need to in specific areas to ensure that we are the leader both in technology which leads to market leader. So, not that easy to narrow the lead in terms of coming to compete with us.

<Q - Stephen Chin>: Hock, if I could, I wanted to follow up on your earlier comments on the storage, your storage business and the guidance for stable demand again in this fiscal third quarter. I was wondering if we're looking back earlier this year when the storage business was seeing better demand because of some of the shortages in NAND flash for SSDs, I was wondering if your customers are providing you much commentary on whether the current hard drive demand is in line with broader demand, or if there's still some element of NAND SSD shortages that are helping the hard drive demand?

<A - Hock E. Tan>: It's a very hard market to predict at this point because there are a lot of multiple dynamics going on in terms of – it's not just about flash demand reaching their high levels, which is driving everything else. It probably is, but that was probably late 2016, early 2017.

Today, I guess all these increased prices in memory, whether DRAM, flash, not hard drives as much as DRAM and flash, is leading to careful spending by enterprises and operators and cloud guys and data center guys. They've all been very careful. So, suddenly you have demand that is there that is neither – but people are not spending, and you will have these stop and starts going on.

So it's all very confusing is what I'm trying to get on. And I'm not sure we have as much – any better – or we have any better visibility than even our customers or our customers have better visibility than us, for that matter. It's just very confusing, and all we can see is that demand has flattened out for our products, be they SSDs – or be they SSD flash controllers, I should clarify – or be they components, re-channels and preamps for hard disk drive.

All we see is that in a quarter ago, we were saying got to be careful about Q3. Well, Q2 has come and gone. Q2 was good. Q3 continues to look good. But then I'm going to [indiscernible] (50:25) and say Q4 may cave. Who knows? We're still booking Q4 but it may not be as strong. And a big part of that uncertainty lies in the fact that they're more than just simply a shortage of flash or DRAM that's creating this uncertainty. I think it's much more than that. It's also the change in spending patterns even in the short term of data center guys, cloud guys, and enterprises because of higher memory prices.

<Q - Stephen Chin>: Okay. I appreciate those considerations. And just a quick follow-up. For your wireless connectivity business, I know much of that revenue is still driven by mobile-type applications, but I was wondering, how meaningful is your exposure to enterprise-type access points today? And any exposure in like automotive hot spots potentially going forward? Thanks.

<A - Hock E. Tan>: Oh, they are. They are. I guess the best way to describe this, broadband carrier access are increasingly, even set-top box which includes set-top box, both CPE, that is as well as central office are starting to sprout Wi-Fi as another means. You have GPON, EPON, you have DSL, VDSL, now Wi-Fi into the picture. So it’s all good. And we are very, very well-positioned in all this, including their generation. So it is giving us more content to be put it this way at every access point, which may help the growth. But it’s still not as big, by the way, as the phones by comparison to volume. But it’s a decent amount volume and gives us a very sustainable franchise in this area as well.

<A - Thomas Krause>: Yes. And, Stephen, just housekeeping, but that business line or product line is in our wireline segment, not in our wireless.

<A - Hock E. Tan>: Thank you for clarifying that. Yeah, it sits in wired, not in wireless.