Company Name: Broadcom
Company Ticker: AVGO US
Date: 2018-03-15
Event Description: Q1 2018 Earnings Call

Market Cap: 104,688.36
Current PX: 254.87
YTD Change($): -2.03
YTD Change(%): -.790

Bloomberg Estimates - EPS
Current Quarter: 4.747
Current Year: 19.812
Bloomberg Estimates - Sales
Current Quarter: 4998.000
Current Year: 21163.517

Q1 2018 Earnings Call

Company Participants

- Ashish Saran
- Hock E. Tan
- Thomas Krause

Other Participants

- Craig M. Hettenbach
- Ross C. Seymore
- Stacy Aaron Rasgon
- John William Pitzer
- Vivek Arya
- Amit Daryanani
- Harlan Sur
- Edward F. Snyder

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 will primarily refer to our non-GAAP financial results

Hock E. Tan

Business Overview

Revenue and Earnings

- Well, we really had a very good start to our FY2018 with first quarter revenue and earnings towards the upper end of our guidance
- First quarter revenue of $5.33B grew 28% year-on-year and 10% sequentially
- On the income front, EPS were $5.12, which grew 41% year-on-year and 12% sequentially
  - But please, just don't get too excited by this, as Q1 was actually a 14-week quarter and did include partial quarter contribution from Brocade, which we closed during the quarter
  - But having said this, we do expect business conditions to remain favorable in our second quarter as well, although the revenue mix by segment will be quite dramatically different

Segment Contributions

- First quarter revenue after adjusting for Brocade contribution was all driven by wireless growth, while we expect Q2 will be driven by double-digit growth of our other three segments, offsetting a very sharp seasonal decline in wireless
  - As a result, thanks to diversification, second quarter top line continued to be very stable

Segment Performance

Wired Infrastructure

Q1 Business Highlights

- Let's go deeper into performance by segment, starting with wired infrastructure
- In Q1, wired revenue was $1.88B, declining 10% year-on-year, 13% sequentially, and the wired segment represented 35% of our total revenue
- As expected, first quarter wired results reflected the bottom of the seasonal decline in demand for both our set-top box and broadband carrier access products
- The well-known weakness in optical access and metro end markets impacted us as well in this quarter, but in contrast, demand was strong from data centers and cloud shipments remained stable

Q2 Outlook

- Turning to Q2 outlook FY2018, however, we have a different picture, as demand in this wired segment returned with a vengeance
- We project strong double-digit sequential revenue growth, and this growth is driven by very strong increase in demand for our networking products, from cloud and data centers, as well as the weighted seasonal recovery in broadband carrier access
- Set-top box continued to be flat

Wireless Business

Q1 Business Highlights

- Now what happened in wired is in sharp contrast to wireless
- In Q1, wireless revenue was $2.2B, growing 88% year-on-year and 23% sequentially
- The wireless segment represented 41% of total revenue
- First quarter 2018 wireless revenue growth was driven by the ramp of the next-generation platform from our large North American smartphone customer
- As you may recall, this ramp was pushed out into Q1 from Q4 as compared to prior years

Q2 Outlook

- This pushout coupled with a very large increase in our content in this new platform drove the substantial year-on-year growth in revenue in Q1
  - But as we look into Q2 FY2018, we are expecting a much larger than typical seasonal decline in wireless revenue as shipments to our North American smartphone customers will trend down sharply from the exaggerated first quarter
- We expect to partially offset this decline from an increase in our product shipments that support a ramp of next-generation flagship phone in our large Korean smartphone customer
  - This phone also comes with an increase in Broadcom's wireless content on both our RF and Wi-Fi, Bluetooth combo products
- Notwithstanding such volatile seasonality, I should note that year-on-year, revenue growth for Q2 in this segment will still be in the double digits

Enterprise Storage

Q1 2018 Business Highlights

- Turning to enterprise storage
- In Q1 2018, enterprise storage revenue was $991mm and included approximately $330mm in partial quarter contribution from the recently acquired Brocade Fibre Channel switch business
- As reported, enterprise storage segment revenue grew 40% year-on-year and 54% sequentially
  - Without Brocade contribution, however, first quarter enterprise storage revenue would have resulted in flat, but still stable performance sequentially
- Storage segment represented 19% of our total revenue for Q1
- Now, the Brocade revenue in the quarter was actually higher than our prior expectation of $250mm, and this has been driven by stronger-than-expected demand of Fibre Channel SAN switches
- Our server and storage connectivity products also had a strong quarter with substantial increase in revenue driven by ramp in Purley generation server shipments, and this growth though was partially offset by a decline in our hard disk drive business as demand bottomed out during the quarter

Q2 FY2018 Outlook

- Into Q2 FY2018; the contrast here we expect to see is strong double-digit sequential growth in revenue in enterprise storage driven by robust demand from both enterprise and data centers

Industrial Business

- Finally, industrial first quarter, industrial segment revenue was $251mm and represented 5% of total revenue
- Industrial product revenue remained very robust, grew by over 20% year-on-year
- Resales also grew that 20% year-on-year and trended up 7% sequentially
- Looking into Q2, we expect strong double-digit sequential growth in industrial product revenue, and we continue to expect resales to trend up by the same amount

Business Summary

In summary, therefore, for Q1, as we expected, we delivered very strong financial results and completed acquisition of Brocade during that period

Our second quarter FY2018 revenue outlook reflects the benefit of a very well-diversified product portfolio

We expect to fully offset the impact of a much higher than normal seasonal decline in wireless revenue with strong increases in our wired, storage and industrial segments

- As a result, we expect second quarter revenue to be sequentially flat at $5B on a normalized 13-week basis for the quarter
- However, the change in product mix will have a dramatic impact on second quarter gross margin, which we expect to sequentially expand by 100 to 150BPS

Tom will provide more color during his guidance commentary on the impact this will have on our Q2 profitability

Thomas Krause

Q1 FY2018 Financial Results

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

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

Let me quickly summarize our results for Q1 FY2018, focusing primarily on balance sheet and cash flow items

Revenue and Gross Margin

- We delivered strong financial results for Q1, starting with revenue at $5.33B, which was at the upper end of guidance
- Our first quarter gross margin from continuing operations was 64.8%, 80BPS above the midpoint of guidance, as we benefited from a more favorable product mix in the quarter driven by higher-than-expected revenue from the Brocade Fibre Channel SAN switches

Operating Income and EBITDA

- Operating income from continuing operations for the quarter was $2.6B and represented 48.2% of net revenue
- EBITDA from continuing operations for the quarter was approximately $2.7B and represented 50.6% of net revenue

Balance Sheet Summary

- Our DSO are running on target at 45 days, a one-day decrease from the prior quarter
- Our inventory at the end of Q1 was $1.3B, a decrease of $156mm from the prior quarter as we depleted wireless inventory we had built up to support the large ramp in first quarter shipments
- We are pleased with this level of inventory going into Q2

- We generated $1.7B in operational cash flow, which reflected the impact in Q1 approximately $460mm in payments of annual employee bonuses for FY2017, $240mm of cash expended primarily on Brocade restructuring and acquisition-related activities, and an additional $129mm payment to fund a legacy pension plan
- CapEx in Q1 was $220mm or 4.1% of net revenue

FCF

- Now let me turn to FCF, which we define as operating cash flow less CapEx
- FCF in Q1 was $1.5B or 27.5% of net revenue and reflects the impacts of the items I just mentioned, including the annual bonus payout, restructuring, and pension contribution
  - Without those items, I would just note FCF as a percent of net revenue would have been 43%
- As a housekeeping matter, I would also note that CapEx was $94mm higher than depreciation in the quarter
- We expect CapEx to continue to trend down and approach our long-term target of 3% of net revenue in H2 FY2018
- We also continue to make significant progress in increasing our FCF per share
  - We calculate this metric as our FCF divided by the sum of our outstanding ordinary shares and limited partnership or LP units
- For Q1 FY2018, FCF per share was $3.39 based on 410mm outstanding ordinary shares and 22mm LP units
- More importantly, on a trailing 12-month basis, FCF per share for the period ended Q1 2018 was $13.79, an increase of 71% compared to the trailing 12-month period ended Q1 2017

Q2 FY2018 Guidance

Now let me turn to our non-GAAP guidance for Q2 FY2018

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

Guidance Summary

- This guidance is for results from continuing operations only:
- Net revenue is expected to be $5B, +/- $75mm
- Gross margin is expected to be 66%, +/- 1 percentage point
- Operating expenses are estimated to be approximately $890mm
- Tax provision is forecasted to be approximately $103mm
- Net interest expense and other is expected to be approximately $114mm
- The diluted share count forecast is for 461mm shares
- Share-based compensation expense will be approximately $305mm
- CapEx will be approximately $190mm

Revenue Mix

- Our second quarter gross margin guidance anticipates a very favorable revenue mix driven by strong high-margin networking and enterprise storage product sales and a more-than-seasonal decline in relatively lower-margin wireless product sales
- Our guidance for second quarter operating expenses includes a full quarter of Brocade expenses and anticipates our typical increase in employee payroll taxes from the annual vesting of RSUs in the quarter
    - Please note that after we complete redomiciliation to the United States, we presently expect our effective cash tax rate to be approximately 10%
- We expect to start reflecting this new rate in our non-GAAP results starting with the third fiscal quarter of 2018
- In Q2, we are anticipating very healthy FCF and expect to deliver results above our target model of 40% of revenue

Current Updates

Termination Announcement

- Before we open the call for questions, I would like to briefly address this week's events
- Yesterday, we announced that we have withdrawn and terminated our offer to acquire Qualcomm
    - We have also withdrawn our slate of independent director nominees for Qualcomm's 2018 Annual Meeting of Stockholders
- Although we are disappointed with this outcome, we will comply with the order issued on Monday, March 12, 2018, regarding the proposed transaction
- Importantly, we sincerely appreciate the overwhelming supports we received from Qualcomm and Broadcom stockholders throughout these past few months
- Indeed, I have to say we are touched by the ISS report issued just last night that continues to recommend the Broadcom independent nominees; and by our understanding that based on the vote tally as of today, the 11 Qualcomm nominees are only garnering between 15% to 16% of the outstanding shares
- Not necessarily something to celebrate down in San Diego
- In any event – back to Broadcom

Upcoming Annual Meeting of Shareholders

- Consistent with our announcement in November to redomicile the company, we continue to believe the U.S. represents the best location from which to pursue our strategy going forward
    - And we don't see this week's events putting any constraints on our ability to pursue acquisitions more broadly going forward
- To that end, we also announced that we continue to move forward with our redomiciliation to the U.S. and now expect to complete this process after the close of the market on April 4
    - This timing will allow us to hold our Annual Meeting of Shareholders on April 4, as presently scheduled
- Our Special Meeting for (sic) [of] Stockholders to vote on the redomiciliation will still be held on March 23

Shareholders Value Creation

- So with this, we know many of you are asking what's next
  - Hock and I have had the last couple of days to reflect on this
- First and most importantly, we remain focused on delivering superior return for our shareholders
- Broadcom benefits from a long history of technology innovation, engineering excellence and product leadership across our 20 franchise businesses
- We believe this will allow us to sustain mid-single-digit revenue growth and increasing operating and FCF margins
- To reflect our confidence in the sustainability of the current business, we will continue targeting aggregate dividends of approximately 50% of FCF
  - This should afford us the opportunity to provide material dividend increases in the future
  - The allocation of the remaining 50% of FCF is governed by the returns we believe that we can drive via acquisitions vs. buying AVGO stock and/or paying down debt
- As you all know, Hock and I are quite familiar with the industry landscape; and sitting here today, we do see potential targets that are consistent with our proven business model and that also can drive returns well in excess of what we would otherwise achieve buying our own stock and/or paying down debt
  - If this view changes, rest assured, we will not hesitate to change our approach
- Providing superior returns for shareholders has been and always will be our focus

Future Acquisitions

- One final point I want to make
- Qualcomm was clearly a unique and very large acquisition opportunity
- Given the maturity of the industry, the consolidation it has seen and our relative size now, our future acquisitions are much more likely to be funded with cash available on our balance sheet and without the need to flex the balance sheet much beyond our current financial policy of 2 times net leverage
- I would like to remind you that the purpose of today's call is to discuss our quarterly earnings
- Consistent with our previous call, please keep your questions focused on today's financial results
- We will not be commenting in Q&A on this week's events

QUESTION AND ANSWER SECTION

<Q - Craig M. Hettenbach>: Hock, can you talk about the strong rebound expected in the wired segment? I know you mentioned data center continues to be strong. Also, anything around kind of traditional enterprise? We're seeing some rebound in enterprise IT spending and how much that helps the segment a bit.

<A - Hock E. Tan>: We've seen strength and we saw it, obviously, in bookings in Q1 for shipments in Q2, and we saw very large, very – a lot of strength in both enterprise as well as cloud, data centers in both respects. It's just strong, and it's strong across the full range of our networking products that I commented on.

We also saw strong bookings, which will translate into revenues, obviously, in Q2, very strong revenue recovery in our broadband carrier access, which basically reflects DSL, digital subscriber lines, PON and attach enterprise and carrier Wi-Fi. And that's typical seasonality, and it came back very, very strongly.

What we don't see a sharp recovery is obviously fiber optics in networking; though fiber optics out of data centers continue to be very – not continue, but it has shown renewed strength. So basically data center, cloud that are showing – enterprise showing a lot of strength to offset what I call metro networks and, in our case too, continued flatness in set-top box.

<Q - Craig M. Hettenbach>: Got it. Thanks for all of the color there. And then just a quick follow-up for Tom just on Brocade, the integration just now that you have the business kind of how you see it performing. And then anything we should be aware of, just from a margin perspective and that should take some cost out.

<A - Thomas Krause>: Yeah, no. Well, we've been really pleased with Brocade. Obviously, that's something that's been in the works for some time, and the business we were targeting there was the SAN switching business. It's continued to sustain as we had envisioned throughout, not only the sign to close period, but obviously has a very good start as part of Broadcom going forward.

Clearly, it's a unique asset. From a financial standpoint as well, Craig, it's a margin accretive to the company. We see that continuing to contribute positively to earnings and FCF; and frankly, sort of echoes some of the comments I said in the prepared remarks, really reflects the kind of transactions we're looking to target going forward.

<Q - Ross C. Seymore>: Hock, I just wanted to talk about the wireless business. I think everybody's pretty up-to-date on why the volatility both to the upside and then to the downside in the April quarter, given what your largest customer is doing. I wanted to think a little bit longer term. As we think about the rest of this year and next year, can you talk about what you see from a content perspective across the two components of your wireless business, as well as from a market share perspective?

<A - Hock E. Tan>: Well, good point, I guess. Let's talk about content, and as I've articulated before earlier in previous calls – and that view hasn't changed. On a sustained basis over – I'll put it, over the next five years, in the multiple sockets we have, which as you know represents both RF Front End, Wi-Fi, Bluetooth combo chips in wireless connectivity and touch – basically touch – phone touch and to some extent wireless charging as well.

Combined altogether with those many sockets on a sustained basis over the next – I'll put three years, possibly five years – we see that content sustaining growth in the teens, double-digits. This has been the way it was for the last five years, and the trend towards increased content whether it's 4G, 4.5G or 5G, we do not see that changing.

<Q - Ross C. Seymore>: How about on the share side of things?

<A - Hock E. Tan>: Okay. On the share side, I mean – I'd say it this way. We position the business we are in is not just wireless, by the way; no differently in wired, enterprise storage, and industrial. The core businesses, we call them franchises that we are in, all 20 of them product lines, we picked them in – product lines, franchises to be businesses that we are very clearly out there in the lead.

Technology and market share and where we continue to invest a lot of money for further innovation for progressing technology. The bottom line to what I'm trying to get at is in those businesses, what we worry about or what we have left to worry about are really ankle-biters. And to be honest, ankle-biters' biggest problem, they cannot bite above the ankle.

<Q - Ross C. Seymore>: Okay. And I guess as my follow-up question, one for you, Tom. You've made it pretty clear about the use of cash flow on the dividend side, the 50/50 split, but your commentary about what you may do with the other 50% gave a little more detail than what we've heard in the past, and you included the phrase about paying down debt and share repurchases. Was that meant to be something that those are of increased probability? Or were you just kind of stating the obvious as far as potential uses of the other 50%?

<A - Thomas Krause>: No, I think, Ross, what it's trying to reinforce is that Hock and I are focused on doing what's in the best interest of shareholders, and we have the opportunity to reflect after this week's events on, obviously, the go-forward capital allocation strategy. And we feel looking at the landscape that the strategy we've had in place here for quite some time remains the best strategy to drive those returns. And I think we want to maintain that we continue to be very focused on shareholder returns, and if that strategy no longer presents this type of returns then we'll focus elsewhere.

<Q - Stacy Aaron Rasgon>: First, given the gross margin upset in Q2 on the heavy mix shift of the businesses, how should we be thinking about the drivers of gross margin into H2 given that mix shift that we're seeing into Q2 may be different as we move through the rest of the year? How is that going to influence that?

<A - Thomas Krause>: I'll take it. Look, I think there's a couple of things going on; both there's short term and then there's long. Let me comment on both. Short term, when you look at the seasonality in the business over the FY, obviously, H2 is typically more wireless weighted. Wireless, as everyone knows, tends to carry slightly lower than corporate gross margin. So I think I wouldn't get too excited in terms of where gross margins go from here through the end of this FY.

However, that being said, as you look longer term, consistent with the business model Hock's been driving the last 11 years, we continue to see content gains, we continue to have very good product leadership across the 20 franchise businesses. We've added Brocade, which is margin accretive, so we don't see any reason, as I've said in the prepared remarks, that as we sustain mid-single-digit revenue growth, you're not going to see leverage, not only from an operating and FCF perspective, but a lot of that's going to get driven by gross margin expansion.

<A - Hock E. Tan>: Yeah.

<A - Thomas Krause>: We don't see any reason that that can't continue.

<A - Hock E. Tan>: And we have articulated in prior calls, as far back as a couple of years ago, that this business model we have put in place is one that, on an annualized basis, think it, as Tom said, longer term, we tend to drive gross margin expansion around 100BPS each year. It may be plus/minus 25BPS, but year by year, if you look back several years, we have grown gross margin – we have expanded gross margin around 100BPS, and we believe that trend still continues.

<Q - Stacy Aaron Rasgon>: Got it. Thank you. That's helpful. For my follow-up question, I just wanted to ask about sustainability of storage. So we're seeing some upside. You admitted Brocade was a little stronger than you had expected. And I think you've talked about this business like longer term, just given the drivers of the different segments within it being maybe flattish, but in reality, it's quite volatile. We have years where it's very strong and years where it's very weak.

I know last year when we were seeing the strength in storage, you kind of warned us not to get too excited about the sustainability of that. How should we be thinking about the sustainability of that growth? And frankly, even in your other non-wireless segments as we're seeing that strong double-digit growth into Q2, how should we think about sustainability of that vs. your long-term organic growth target?

<A - Thomas Krause>: Yeah. So I think you've got to unpack it a little bit right there. So, in the enterprise storage, we've got, obviously, the LSI businesses, the SAS connectivity business, which is an absolute franchise. It is going to move from a cyclical standpoint with the Intel server platform releases, obviously, we're in – with Purley, we've had very good leadership position with the new products in that area, and so that business is doing well and we expect it to continue to do well this FY.

Contrast that with HDD; obviously, HDD we think is in a slight structural decline. We also have very good leadership position with those product lines. And so there has been more volatility than probably Hock and I would have anticipated in that business over the last several years. And I wouldn't think that would change, frankly, going forward as you look out.

And then beyond that, Brocade, frankly, Brocade's probably the one that's the most stable in our view. And of course, we've owned it the shortest period of time. But, as you look forward, that's a business that we think can sustain at the levels that we saw on a full run rate basis in Q1. So we think, when you put all that together, I'd echo kind of where I think you were going, which is this is kind of a low-single-digit type growth rate segment as we currently report it.

<A - Hock E. Tan>: And to add to that, the last few years, what Tom is saying is the only volatile part of it is the hard disk drive business and that's related – and for years, it is with the on the whole enterprise storage business we see there, the various components, are very, very stable, grow low single-digit; nothing exciting, but very, very predictable and stable. What happened probably a year or two ago was flash coming in the picture and shortages and creating impact to the extent it creates impact which is on the consumer client side of hard disk drives and that creates some level of impact.

Beyond – as client goes out as a portion of the hard disk drive market and the data center part of the business expands, what we call near line, you will see that volatility start to go away too. And what you'll end up with then in our enterprise storage business is an extremely stable business, single-digit growth, if at all, but extremely profitable.

<Q - John William Pitzer>: Congratulations on the strong results. Hock, my first question goes back to the wired segment in the January quarter. And this might be kind of a moot point just given how strong your April guidance has been, but I'm still trying to figure out that business being down 10% year-on-year. You characterized it as sort of a seasonal lull, but I'd assume a y-over-y compare would catch that and you did have the extra week this quarter that you didn't have last quarter.

So, I guess, I'm just trying to figure out what – you mentioned a bunch of factors in your prepared comments, I'm trying to figure out what was the most significant factor. And as you think about the long-term growth in this business to the extent that you have a 5% growth rate for the overall business, how does this business fit in because, arguably, with your exposure to data center and cloud, this is probably the business that investors are willing to pay the highest multiple on, but it's one that, over the last several quarters, has actually been growing much slower than the other businesses, and I know there's a lot of different businesses inside of wired, but how would you think about the long-term growth rate and the moving parts on that?

<A - Hock E. Tan>: Right. That's the best part of the question, but to try to answer your technical part, which is what the hell happened in Q1 and all that; first, for the compare year-on-year – if you compare year-on-year, which was Q1 a year-ago, don't forget, what we did a year ago, there was some exceptional item in it a year ago. What we did as part of the integration of classic Broadcom with Avago is where to dispose of certain efforts.

And as part of that, we sold manufacturing rights, which we articulated at that time when we announced the earnings to certain companies out there for – as part of the disposal process on overlapping products in the integration.

And that jacked up the revenue artificial one-time a year ago. So we have that low compare to hit on, and the amount there wasn't small. It was over $60mm – $60mm, $70mm [ph] by term (36:53). Small by total standards of $2B, but nonetheless, it does the percentage when you worry about the 10%. So that's one thing I want to say to add on.

But on Q1, to address your question on it, our wired infrastructure, our wired business is really two parts when you look at it. One is data center, very much data center, call that enterprise business, which is networking, and that's about just almost – it's roughly half. And you have the other half, which is more carrier related, operator – service provider related, which is really the set-top box business, the carrier access business and a part of our optics business, optical transceiver business, just like as a part of optical transceiver there are lines in data centers, and it's very interesting that the enterprise and data center business, which was holding up in January quarter, but the other side was all down, all down, including optical that relates to fiber-to-the home, to networks and operators, especially in China, and as well as carrier access, seasonally down, set-top box seasonally down quarter. So we have one side been dramatically down, one side holding up.

Then comes April, and we see the part that's down a lot starts to recover quite strongly, especially in carrier access, popped right up. The fiber optics in China on networks and set-top box have not, but that part of it popped up, but what we really start to see is also the other – the half of the business in data center, enterprise took on huge strength. A big part of it is some of the – we start to ramp on certain new products. I don't want to get into specifics on which they are. You probably know what they are. They are networking and they are in AI, especially, as well as various other programs all related to cloud and enterprise, been very strong, and that's what drove this April strength, and that's kind of the whole story.

<Q - John William Pitzer>: That's helpful, Hock. And then, Tom, maybe as my follow-up, I think I understand the OpEx guidance going into the April quarter relative to period costs that come in on the payroll and Brocade, but I'm just kind of curious, given that you're going from a 14-week to a 13-week, how is that impacting sequential OpEx? I would have thought just having one less extra week would have helped you on the OpEx front, and how do we think about OpEx trending from April on to H2?

<A - Thomas Krause>: Yeah, it's a good question. Look, there's a lot of things going on. You've got the payroll uptick because of RSUs, which is material. You've got Brocade transition costs, which we have the benefit of having a longer time between sign and close, so we're very much actually past day two now and on our way to being fully integrated. So that should come off and bring numbers down. So as we look at H2, look, I would be thinking you're not going to see OpEx go up anymore. It probably does trend down slightly, but we're running at or about these levels when you exclude the Brocade transition expenses.

<Q - Vivek Arya>: Congratulations on the continued strong execution. For the first one, Hock, I just wanted to go back to the prior line of question around wired segment, but maybe from a longer-term perspective, if you just set aside the seasonal aspects. What is the right way to think about a two- to three-year growth rate for the wired business? You obviously have the strength in your cloud switching and AI businesses, but is set-top box going to be a headwind longer term? Just conceptually, do you think your wired business sort of grows in line, above, or below your overall company 5% growth rate?

<A - Hock E. Tan>: That is the one that will grow around 5%, and it's because – I didn't finish the previous question totally. I do apologize, but to answer your question on that, remember, I look at our wired business as two parts; one is enterprise, data centers, which includes the switching; basically, a lot of it is the switching, the controllers, routing, even part of routing, and even fiber optics that go through data centers. That area we have been seeing is growing very, very fast.

Now, occasional hiatus, flattening out – not going down, but flattening out has happened in January as I indicated, even though demand continued to be good, but it keeps growing and it grows, I would say, close to probably – on a year-on-year basis, probably close to 10%.

Then we have the other side of business, which is more related to networks, service providers. And those are more volatile, more seasonal; but if you take it on an annualized basis, I would say, it's practically flat, and that's why I said that on an average, mid-single digits when you average out on an annual basis over a five-year period, that it'd be running at that rate.

It's very strong enterprise and cloud products or enterprise and cloud, and there continues to be a lot of innovation in that areas, which we are right in the thick of, which we drive, in fact, a lot of it, and which includes new applications and new ways to optimize data centers and cloud, less so in enterprise, but definitely in cloud and associated with it, the fiber optics that ties to cloud computing.

And against that a more traditional but nonetheless very, very stable and sticky service provider wired business in video delivery, set-top box, OTT as well and carrier access, which is gateways both on – gateways, especially for carriers. So it's a mix of the two and the dynamics of the two, but it's very clear that while a big part of the half is growing very fast, relatively speaking, and the other half doesn't grow.

<Q - Vivek Arya>: Got it. And for my follow-up, I appreciate that you want to talk about the earnings, but acquisitions have been a key part of your strategy longer term. And if I look at most of your targets, they have been sort of digital and logic companies. Are you open to also looking outside at perhaps analog or microcontroller assets? So without being specific about the targets, are there any pros and cons you can think of of looking at analog vs. digital assets in the future?

<A - Thomas Krause>: Well, look, Vivek, obviously, we don't want to get into specifics. And I think what I would say to this is, we're open – we're open to looking at anything that helps; one that is consistent with our business model, and then two, helps us drive the kind of returns well in excess of our alternatives. So we've obviously shown openness. We obviously did Brocade, which is more of an appliance systems business, but very consistent with our strategy, and will remain that way going forward.

<Q - Amit Daryanani>: I guess, two questions for me as well. On the wireless side, Hock, I think you talked about mid-teens content growth and not too worried about competition there. Wondering, do you think pricing dynamics could be different in the industry as you go forward, because two of your largest players – two of the biggest players in the industry are really struggling to, I would say, drive unit growth at this point. So, do you think pricing could be different as you go forward in this industry vs. what you're seeing?

<A - Hock E. Tan>: Well, you look in the phone dynamics as actually at the high-end flagship status, and you could take the key assumption, which we do, subscribe to, that that flagship status remains and continues to remain in the flagship status. Those phone makers, particular phone makers, have to innovate, have to offer features that continue to push the envelope. They're probably more mindful as they will be about costs, overall costs. But a lot of our components are not gimmicks, you realize, right? They are like basic, basic fundamentals to a phone working in various bandwidths.

Give you an example, 5G. 5G adds on a lot more spectral bandwidth, which means you need more content, just simple basic fundamentals as that – that going to 5G means you have to find new spectral bandwidth to operate in and every spectrum you'll find, you need more components in that direction. You need more bandwidth in wireless connectivity. You push in that direction, too. So yeah, there will be.

Now, not necessarily every place, for instance, touchscreen, people might be cheaper and not push as much into it; we understand that. So that's a mix of both, which is why I say on a long term five-year trend, the fundamental feature requirements will be what drive growth because you are running with more – higher, more requirements in terms of performance, even it's as basic as operating in more spectral bandwidth as you go from 4G to 5G and on and on. And that alone by itself would drive, if you compute, that low – at least low double-digit growth in content. There's no getting around that.

<Q - Amit Daryanani>: Got it. That's really helpful. And, I guess, Tom, [ph] I had (48:08) follow up with you. You guys are doing 43%, 44% net income margins today. I think the FCF margin is about 1,600BPS or so below that number. Structurally, at what point do you see these two things converging? And ideally, I would hope FCF margins improve, not that other way around. So when do you see that happening? When do you see all these one-off things kind of abating away for you guys?

<A - Thomas Krause>: Well, I think it's happening. I mean, that was the point I was sort of spelling it out for Q2, right? I mean, in Q1, you do have something that happens every year, which is we pay out our annual performance bonuses and, hopefully, we'll be able to continue to pay out the bonuses we've been paying out over the past many years going forward. So I'd expect that.

But beyond that, the one-time items around the Brocade acquisition and the restructuring activities there, as well as paying down – actually one of the last legacy pensions we have where there's a liability, those are one-time items. So if you took those away, we're already running well above 40%, which is actually very much in line with non-GAAP net income. So we feel pretty good you're already seeing that convergence, especially as you look into Q2.

<Q - Harlan Sur>: Yes. Thank you for taking my question and great to see the diversification in the business playing out. Hock, you provided a longer-term view on wired. Kind of more near-term, it looks like the double-digits quarter-on-quarter growth in April is going to take you guys back to y-over-y growth. Given the trends that you're seeing, strong data center and cloud, you're ramping several new big ASIC programs, hopefully, kind of normal seasonal trends in broadband to the end of the year. H2, you'll be ramping Tomahawk 3, Jericho 2, but maybe still some headwinds on service provider. Net-net, do you expect full-year FY2018 that your wired business is going to grow?

<A - Hock E. Tan>: Oh, yeah, oh, yeah, for sure. Our FY2018 compared to FY2017, we see our wired business growing, and we articulate that our mid-single-digits, there's quarterly ups, quarterly down, cut through all that, take it on an annual basis. It's just the trend from enterprise, but more than that, data centers and especially from the cloud in pushing very hard for a lot more silicon products in those data centers.

Bandwidth, they need more bandwidth, they need set-up pipes; they need offloading. I hate to use that word, but that is – which means chips, controller chips that are getting very smart and things that do things beyond what a standard CPU would do. I get all these opportunities that drive this silicon growth in this area. Bandwidth alone is driving us to keep coming up with newer and newer generation, faster and faster bandwidth.

<Q - Harlan Sur>: Great. Thanks for the insights there. And then, the strength in the ASIC business has been highlighted over the past few calls, switching, routing, AI, deep learning. These are big complex digital chips. But you also have a pretty strong ASIC franchise in mixed-signal analog ASICs, things like human interface, that's touch, 3D sensing, wireless power, power management. I hear that you [ph] guys' forward (51:43) design win pipeline in this segment continues to be quite strong. Can you just talk about the differentiators that the team brings to the table here in mixed-signal analog ASICs that is keeping the pipeline pretty strong?

<A - Hock E. Tan>: The core of it is, yeah, our mixed-signal team or you call it the analog team in a digital age, we have one of the strongest, I call it, analog team in terms of DSP and converting analog, which is real-world signals, to digital in order for it to do all kind of stuff. Basically, ADCs, analog-to-digital converters, which is one of our key strengths, though we don't publicize this very much because that's what we do.

We have people see us as a very strong digital company, but you can't just do digital alone. What we have is actually one of the strongest analog-to-digital conversion capability in the world, and that has enabled us to do a lot of things very well hidden, in many ways, from the public eye.

We can do a digital front-end ADC for even things like base stations, as an example, and we do that for human interface as part of our capability, and we do it for coherent receivers in DSP on a DSP basis. Yeah, we do have a strong capability of people who, best way to describe it, virtually walk on water from the viewpoint of many of our customers, and that has enabled us to keep getting that strong backlog of programs that we are actively engaging in the various core business franchises we're in.

This doesn't deviate us from our core franchises, I should say that. It just enables us to drive those core franchises deeper and deeper into performance, whether it be next-generation technology, whether it's driving 100 gigabit per second SerDes or driving ADCs that push the boundaries of where standard products, technology driving standard products and touchscreen controllers and various other things.

So we see that as very useful to capability, towards continuing to sustain our leadership in those various core franchises we are in.

<Q - Edward F. Snyder>: Thanks a lot. Hock, the comment you just made here was actually in line with what I was going to ask you about your core franchises. You've got these franchise, you've been articulate about where you're going to go, where you don't go, but there seems to be this other area, the custom ASIC area, you did routers for Cisco years ago, and then you've got into AI, and then, when your largest customer, when you got Broadcom, you obviously moved into connectivity, but you also jumped into areas that would be considered unnormal for Broadcom, Avago even, like wireless charging, which the market itself is really way below where your margin profile exists, but you've done a really good job of that.

So I know it's not a franchise, but isn't it the case that your custom ASIC business is becoming kind of a franchise onto itself with a select groups of customers where you can go in and do things they can't do and offer them service? If that's the case, what are the boundaries in terms of what you can and can't do in that kind of a franchise? Thanks.

<A - Hock E. Tan>: Ed, that's very, very insightful and perceptive question. You're right, we are starting to see that, and we are very careful, but we have been asked by – I mean, some of it, of course, we go dig it out ourselves, but in some cases, certain customers who need technology that pushes the envelope like the accuracy and speeds of ADCs, for instance, we've been asked by certain customers into areas beyond what we have touched on.

And I also mentioned that on the ADC, on the front end of DFE or base stations as an example, where we've been approached by customers to design in CMOS silicon what used to take non-CMOS processes to do and be able to achieve the same performance with much lower power and potential integration possibility.

All that comes in. And you're right, we don't know where the limits are, but we're very careful that we do not expand resources in the wrong manner, back to ROI [ph] responses (56:58). Every dollar or every resource we put into a program, we are very conservative, very risk adverse, you might say, about ensuring we get a very good ROI. And that comes in making sure customers put skin in the game together with us when they ask us to do programs, where we are expected to, as I keep saying, walk on water literally. We want to make sure that we get a high probability of a good ROI in doing that, but it goes to enhance our overall business model of franchises in business in the various end markets, we are very, very good at.

<Q - Edward F. Snyder>: So is it safe to say...

<A - Hock E. Tan>: All right?

<Q - Edward F. Snyder>: So is it safe to say in that kind of context then, because the feedback we've gotten was that, believe it or not, it does sound like you guys do an exceptional job in terms of delivering on time and performance they didn't think they could get, but it leads to a puzzle then, because I would have never expected you to get into some areas that you moved in to like wireless charging, for example. It's much more analog, much more lower margin.

Is it the case that once you start engaging with these customers like the internal custom ASIC group that they'll start throwing problems to you and say can you do this? And so it opens up a much wider swath of technologies that you could go into, if the agreement is cast correctly, so that we may be seeing you do stuff that maybe you've been more uncharacteristic if you hadn't had the custom ASIC group?

<A - Hock E. Tan>: Ed, again, very insightful and we see that, and I'd just say we're very disciplined, extremely disciplined, just like the way we do our acquisitions. Recent example excepted; just kidding. But typically we are very, very disciplined. And here in the use of resources in developing a program that is outside what we considered to be franchise areas, core areas, we will be very, very careful, very, very disciplined. We don't take everything thrown in our direction.

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