Company Name: Intel
Company Ticker: INTC US
Date: 2017-07-27
Event Description: Q2 2017 Earnings Call

Market Cap: 164,324.03
Current PX: 34.97
YTD Change($): -1.30
YTD Change(%): -3.584

Bloomberg Estimates - EPS
Current Quarter: 0.752
Current Year: 2.891
Bloomberg Estimates - Sales
Current Quarter: 15368.647
Current Year: 60413.389

Q2 2017 Earnings Call

Company Participants

- Brian M. Krzanich
- Robert H. Swan

Other Participants

- Blayne Curtis
- Ross C. Seymore
- Vivek Arya
- Stacy Aaron Rasgon
- John W. Pitzer
- Romit Shah
- Harlan Sur

MANAGEMENT DISCUSSION SECTION

GAAP and Non-GAAP Financial Measures

A brief reminder that this quarter, we have provided both GAAP and non-GAAP financial measures

Today, we will be speaking to the non-GAAP financial measures when describing our consolidated results

The CFO earnings presentation and earnings release available on intc.com include the full GAAP and non-GAAP reconciliations

Brian M. Krzanich

Business Highlights

Opening Remarks

- Q2 was an outstanding quarter in which we set a number of records
- We beat the expectations we set in April, primarily as a result of stronger desktop and notebook microprocessor volume, and set a second quarter revenue record
- We're executing well to our priorities, and after adjusting for the McAfee transaction, revenue grew 14% y-over-y while non-GAAP operating margin grew 30%
- Our data-centric businesses were up 16% y-over-y
- Technology and performance leadership are fueling our results
- And in Q2, we extended our leadership with new breakthrough products in client computing, the data center and memory

- With industry-leading products and strong H1 results, we're on a clear path for another record year
- As we shared in February and reinforced in April, our strategy is to make Intel the driving force of the data revolution across technologies and industries

Priorities

I outlined our top four priorities for the year in support of that strategy: growing the data center and adjacencies, ensuring a strong and healthy PC business, growing IoT and devices and executing flawlessly in memory and FPGAs

I'd like to take a few minutes to highlight our progress in Q2

DCG

- First, DCG
- The Data Center business grew 9% in Q2 and remains on track to high single digit growth for the year
- Strong public cloud growth continued, with revenue up 35%
- Enterprise was down 11%, as workloads continued to migrate to the cloud and memory and solid-state drive constraints impacted server deployments
- Comm service provider revenue was up 17%, while adjacencies, which serve all customer segments, rose 12%
- Cloud and comm service provider together are the growth engine in the data center, and together now make up nearly 60% of DCG's revenue
- In 5G we're demonstrating end to end leadership in client and infrastructure
- We have five ongoing trials with leading global service providers and 15 more in the pipeline
- And we're on track with our development of IA, FPGA and ASIC silicon platforms based on new radio standards

Xeon Scalable Launch

- Earlier this month, we launched Xeon Scalable, formerly known as Skylake and with it, the industry's biggest platform advancement in a decade
- Using Xeon Scalable, our customers have already achieved over 50 third-party verified performance world records and are seeing more than 1.6x performance increase over our prior generation product across a wide range of real world workloads
- For example, the new AVX-512 instructions double floating point performance, benefiting use cases like HPC, VR and AI
- In fact, artificial intelligence inference throughput improves by 2.4x gen to gen
  - And when this silicon innovation is combined with our AI software frameworks optimizations, customers like Amazon Web Services are seeing inference performance improvements of more than 100x
- The enthusiasm for Xeon Scalable resulted in our largest early ship program ever
- We delivered more than 500,000 units to over 30 customers who appreciate outright performance leadership
- The data center is central to our strategy and is a remarkable opportunity

- By 2021 we expect the data center to be $65B silicon opportunity, and we're less than 40% of the total available segment today
- As we build out the adjacencies like Ethernet, Silicon Photonics and 3D XPoint memory and pull them all together with rack scale design, we'll be positioned to deliver even higher levels of performance and efficiency to our customers and increase our percentage of the total TAM

Client Computing Group

Revenue

- The Client Computing Group also delivered fantastic results
- Revenue was up 12% over last year as product leadership combined with a disciplined segmentation strategy led to rising Core mix
- We along with our customers and partners in the PC supply chain are driving the evolution of the PC experience, as users seek out high performance and new form factors

Intel Core X-Series Processor

- We launched the powerful new Intel Core X-series processor family including a new Core i9 Extreme Edition processor, extending our performance leadership
- And we'll be shipping our first 10-nanometer products near the end of the year beginning with a lower volume SKU and followed by multiple SKUs and a volume ramp in H1 2018
- We've seen some modest improvements in the PC consumption but we continue to expect a mid single digit TAM decline for the full year
- We also began shipping our next generation 4G LTE modem known as the 7480 to customers
- As I mentioned earlier, we're continuing to make great progress with our wireless ecosystem, laying the groundwork for 5G, and starting in 2018, Intel will partner on what is expected to be the first 5G showcase at the Olympic games

Internet of Things Business

- In our Internet of Things business, we're focused on four key verticals, retail, video, industrial and transportation
- We saw strong growth across all four, leading to a 26% increase in revenue
- We're specifically excited to see the ramp of our IVI designs with both Jaguar Land Rover and Toyota

Mobileye Acquisition

- We're also about to mark a very important milestone in our transformation
- We expect to close the acquisition of Mobileye in Q3, several months earlier than expected
- Autonomous driving is a massive compute workload that will disrupt industries and save lives and we are investing to win in this important segment
- I'm excited to welcome the Mobileye team to Intel

- Together, we expect to be the global leader in the $70B autonomous driving systems, data and services market opportunity by accelerating auto industry innovation and delivering cloud to car solutions faster and at a lower cost
- And we're looking forward to talking with you in more detail about our plans and the progress we're making in this segment later this quarter

Memory Business

- Memory and FPGAs round out our priorities for the year
- Our memory business grew 58% over last year, setting an all-time revenue record
- A cornerstone for our strategy in this segment is differentiated technology
  - And that differentiation was on display earlier this month when we announced availability of the industry's first, and to date only, 64-layer 3D NAND SSDs
- Our floating gate architecture already enabled industry-leading density at 32 layers
- And we believe our density lead is even greater at 64
- We also shipped more than 200,000 units of our revolutionary Optane memory for clients, which are available via our OEM partners and channel partners and have more than 50 data center customers testing Optane SSDs currently which will ship for revenue this year, Optane DIMMs remaining on track for availability next year
- Our memory factory, Fab 68, continues to exceed expectations, ramping ahead of schedule in terms of both output and yield
  - This will be a big part of our overall supply growth in H2, which we expect to be greater than 20%
- The combination of strong execution and favorable market conditions is accelerating our path to profitability
- Core NAND returned to profitability this quarter ahead of our earlier estimate and we expect it to remain profitable for the balance of the year
- We also now expect the entire NSG segment to be profitable for the full year of 2018 vs. our prior end of 2018 target

FPGA Business

- Lastly, our FPGA business was down 5% over last year on weaker data center and comms sectors, but remains on track to our mid single digit growth target for the full year, with broad reacceleration in H2 across markets, including the Data Center segment
- At their Build Conference in May, Microsoft disclosed a major advancement in the deployment of Intel FPGAs resulting in the industry's fastest public cloud network and new technology for acceleration of deep neural networks
- Audi selected Intel for the Level 3 autonomous driving system in its upcoming A8 where our Cyclone V SoC FPGA technology will perform object and map fusion as well as parking pilot and sensor data pre-processing
- We're also seeing strong adoption of our 14-nanometer Stratix 10 FPGAs
- We continue to gain key design wins in our focus segments, and we're on track to production later this year
- To sum it up, I'm very pleased with our progress, and I'm more confident than ever in Intel's future and growth

Outlook

Revenue and EPS

- Based on our strong H1 and higher expectations for the PC business and the expected close of Mobileye, we're raising our full-year revenue forecast from $60B to $61.3B and our non-GAAP EPS forecast from $2.85 to $3.00
- We continue to see intense competition across our businesses
  - That's the reality of the attractive markets in which we participate
- The competition makes us stronger, and we're ready for it
- We're executing well to our strategy to transform from a PC-centric company to a data-centric company that powers the cloud and billions of smart and connected devices
- The PC TAM is down more than 15% vs. four years ago
  - Despite that headwind, our revenue is up more than 15% and our operating profit has grown more than 30%
- More than 40% of our revenue now comes from our data-centric businesses outside the PC sector
  - And those businesses together are growing at double-digit rates
- And while we're growing the top line, we're intensely focused on operating efficiency
- We now expect spending as a percent of revenue to decline about 160BPS vs. last year, bringing it below 34%, on track to the 30% goal we're committed to, to hit by 2020

Robert H. Swan

Financial Highlights

Revenue, Operating Income and EPS

- Like Brian said, we had an outstanding quarter and executed on several important milestones
- Revenue was $14.8B, up 14% y-over-y excluding the Intel Security Group
- From an earnings perspective, operating income was $4.2B, up 30% y-over-y, and EPS of $0.72 was up 22% y-over-y
- Our EPS performance was the result of strong top line growth, good gross margin improvement, and excellent spending leverage

Cash Flow from Operations, Shareholders Returns and Mobileye Acquisition

- From a capital allocation perspective, we generated $4.7B in cash flow from operations, returned $2.6B to shareholders, and have capital in place to fund the Mobileye acquisition
- The planned acquisition of Mobileye, which will fuel our growth in the automotive segment, is expected to close in Q3, well ahead of our schedule

Data Centric Transformation

- At our Analyst Day in February, we talked about our strategy to transform from a PC-centric company to a data-centric company, a company well positioned to power the cloud and the billions of smart and connected devices
- Our Q2 results demonstrate its continued momentum in our transformation, with the data-centric businesses, those outside of the PC segment, up 16% y-over-y
- Our PC-centric business executed extremely well in a declining market and was up 12%
- Our data-centric businesses are more than 40% of the company's overall revenue

Operating Margin Leverage and EPS Growth

- Moving to earnings, we are seeing broad growth across the business, driving 4 points of operating margin leverage and 22% EPS growth y-over-y
- Earnings growth is driven by strong top line growth for both the PC and data-centric businesses, improving unit costs with 14-nanometer ramp, and gains from a sale of a portion of our equity investment in ASML.
- On our Q1 earnings call, Brian and I talked about our commitment to achieving spending target of approximately 30% of revenue no later than 2020

Investments

- We made great progress in Q2, as total spending was down 330BPS y-over-y
- We've continued investments in our key priorities, including artificial intelligence, autonomous driving, and Moore's Law, while at the same time capturing benefits of our previously announced restructuring program and significant leverage from strong top line growth
- R&D spending was down 1 point, and our SG&A costs were down 2.2 points
- On a full-year basis, we expect direct spending to be below 34%, approximately 0.5 point better than our prior guidance

Client Computing Group

Revenue and Client ASPs

- Let me touch briefly on our segment performance on slide 5
- The Client Computing Group had another outstanding quarter
- Revenue of $8.2B was up 12% y-over-y
- Client ASPs were up 8% y-over-y, as we continue to see strength in our gaming segment and strong Core mix
- We also continue to see the worldwide supply chain operate at healthy levels
  - This segment had another quarter of significant profit growth, with operating profit growing 58% from a year ago
- And the business continues to execute and benefit from continued improvements in 14-nanometer unit costs, richer product mix, and lower spending

Data Center Group

Revenue and Operating Profit

- Moving to slide 6, the Data Center Group had revenue of $4.4B, up 9% y-over-y
- The Data Center Group had operating profit of $1.7B, down 6% y-over-y
- As Brian mentioned earlier, we had strong growth in both the comms and cloud service provider segments, which are nearly 60% of our DCG revenue

Operating Margin

- Operating margin percent was impacted by increased technology development costs and higher artificial intelligence and adjacency spending. Vs Q1, our revenue accelerated 3% and our operating margin improved by 3 points
- We are on track to our full-year guide of revenue growth in the high single digits and operating margin of over 40% for the full year

IoT, NSG, and PSG

- The IoT, NSG, and PSG business segments are well positioned to capitalize on the explosion of data and are becoming a larger component of our overall business, growing 28% y-over-y
- Our Internet of Things business achieved revenue of $720mm, growing 26% y-over-y, driven by strength in industrial and video and continued momentum in our automotive business
- Operating profit was $139mm, up 56% y-over-y on higher volume and ASPs offset by continued investment in automotive

Memory and Core NAND

- Our memory business had record revenue of $874mm, up 58% y-over-y, with strong demand from data center SSD solutions and demand signals outpacing supply
- This segment had an operating loss of $110mm, largely driven by costs associated with 3D XPoint and start-up costs for our memory capacity
- Our memory fab in Dalian continues to make great progress and is ramping several weeks ahead of schedule
- Yields continue to improve and unit costs are well ahead of expectations
- The core NAND business returned to profitability in Q2, and we expect the core NAND business to be profitable for the full year and the memory business as a whole to be profitable in 2018, both ahead of our prior estimates

Programmable Solutions Group

- The Programmable Solutions Group had revenue of $440mm, down 5% y-over-y
- Operating profit was $97mm, flat y-over-y after acquisition-related impacts
- We’re making good progress in realizing cost synergies with the integration of this business

Capital Allocation Priorities

- Moving to slide 8, let me remind you of our capital allocation priorities and progress
- Our priorities, first, invest in the business; second, strategic acquisitions; and third, return cash to our shareholders through dividends and buybacks
- As I mentioned earlier, in the quarter, we generated $4.7B of cash from operations
- We purchased $2.8B in capital assets, paid $1.3B in dividends and repurchased about $1.3B of stock
- In addition, we received cash of approximately $900mm as a portion of our Intel Security divestiture
- And we generated approximately $1.3B from the sales of some of our interest in ASML, which generated $796mm of pre-tax gains

Cash & Long-Term Investments and Debt

- At quarter end, cash and long-term investments was $34B, up $11B, and total debt was $32B.
- Offshore cash investments and proceeds from the sale of our ASML investments are being used to fund the Mobileye acquisition

Guidance

Now, let me turn to guidance on slide 9

Some context

First, while we see slightly higher PC TAM and supply chain inventory replenishment contributing to higher expectations for annual revenue, we continue to take a more cautious view of PC consumption vs. third-party analysts

Second, we continue to see strong demand signals in our memory business through the year, and we expect memory fab in Dalian to support higher H2 demand levels

And third, as I mentioned earlier, we expect to close the acquisition of Mobileye in Q3, and as such, are including expectations for this business into our guidance

Full Year

- Based on these factors, we are raising our full year revenue guidance by $1.3B to $61.3B, operating income guidance by $600mm to $17.9B, and EPS guidance by $0.15 to $3 per share
- The improvement in revenue outlook is driven by a strong H1, higher expectations of the PC business and the inclusion of Mobileye
- The improvement in operating margin is primarily driven by our increased revenue outlook
- Our outlook for full year spending is $20.7B as we expect modest increases related to revenue growth and the integration of Mobileye
- The increase in EPS is driven by higher expectations of revenue, coupled with gains on sale of our equity investments and the inclusion of Mobileye
- We expect Mobileye to contribute approximately $200mm of revenue, $100mm of operating income, and $0.02 of EPS in H2

Q3 2017

- And on slide 11 (sic) [10], as we look to Q3 2017, we are forecasting the midpoint of the revenue range at $15.7B, up 3% y-over-y excluding Intel Security Group
- And we expect operating income of $4.8B and EPS to be approximately $0.80
- 2017 is shaping up to be another record year for Intel
- We feel great about where we are six months into our three-year transformation
- We exceeded our EPS expectations for Q2, and increased our profit expectations for the full year
- At the same time, we are investing to compete and win in an expanding market fueled by the growth of data
- We are already seeing an impact from our data-centric oriented businesses, up double digits collectively, as we continue to transform the company from a PC-centric company to a company of smart and connected devices that power the cloud

QUESTION AND ANSWER SECTION

<Q - Blayne Curtis>: I was curious on the data center business, maybe you can talk about the growth you they sequentially in the back half to get to that high single digits for the year. Maybe you can just talk about it by segment. I know cloud was up a lot in Q2, enterprise down. Talk about it by segment as well as the contribution from Scalable into those segments. What's the right timing to think about as those ramp in?

<A - Brian M. Krzanich>: So I'll start and Bob can add some comments at the end. We think the data center continues to be just a great growth engine for the company. And you saw the 9% growth this quarter. What we have really been also focusing on at the same time is really increasing operating margin, and I want to make that point. You saw our operating margin increase to 38% this quarter. You'll see us continue to raise that operating margin so that we're back at the 40% plus operating margin for the back half and for the year.

So first wanted to lay that groundwork. What we've projected for H2 is quarters that are pretty much in line. We continue to expect enterprise to continue to decline. It declined a bit more in Q2 than I think we had really projected. It declined at about 11%. But if you look at Q1, it declined a little less than we expected at 3%. But we still expect it to decline in those high single digit numbers. Cloud though, and grew greater than we what expected at 36%. We expect it to be in the mid 20s, probably more likely. And then networking and comms, 17% and the adjacencies at 12%.

So we expect that trend to continue. We don't need any big shifts in those trends to really get to that high single digit growth rate for the data center. We talked about Xeon Scalable. The initial reaction has been extremely positive. You see the largest number of prequalification samples sent out to customers. You see the cloud applications. We try to talk about it's the largest performance improvement in a decade, gen to gen. So we're seeing a very large ramp in H2 as we move on with the Xeon Scalable. And so I think that's what's going to fuel H2 2017, and then but it's going to continue on into 2018 as well. So I think that's how we see H2 playing out.

<A - Robert H. Swan>: The only thing I would add, Brian, is we came into the year looking at high single digit growth for the business and margins expanding quarter by quarter throughout the year, and two months in we see nice acceleration on both top and bottom line. And as we go into H2, we're comfortable with the full year outlook that we've given. And the only dynamic other than the things Brian highlighted is Q3 comps are a little tougher as we go into H2, but we feel good about the mix of the business as we go through 2017 and beyond.

Just to reiterate a point Brian said, with the strong cloud growth and the strong performance in the comms and networking space, we now generate 60% of our revenues from the higher growth aspects of the business. So we think that bears well for us in 2017 but also going into 2018 and beyond.

<Q - Blayne Curtis>: And then I did want to ask you on the memory side, you looking for breakeven next year. What is driving that? Obviously, memory pricing has been strong, but I was just wondering if there's any other factors you're now adding into that outlook?

<A - Brian M. Krzanich>: So let's make sure we clarify, right, so on traditional NAND, we are breakeven this year. And we broke even actually this quarter, and we expect to remain there the rest of the year. When we talk about for next year, that's inclusive of 3D XPoint. And so the difference is really as we ramp products on through the XPoint and as we ramp out the rest of Fab 68, both of those. Whenever you're ramping a factory, because you have a certain amount of underutilization of the equipment just as you start to get it going, you tend to have slightly higher costs. And so that's what you see as the driver for the rest of the profitability growth as we go into next year.

I want to also say that the 64-tier NAND products gives us a cost and performance advantage just because they're leading edge products as well that is going to play into as we move through the remainder of this year and next year. So it's 64-tier products on traditional NAND, the ramp-out of Fab 68, and then the real startup and continuation in getting the rest of the products qualified on 3D XPoint is what gets us – everything profitable next year.

<Q - Ross C. Seymore>: Brian, I wanted to follow up the data center side that Blayne just asked about and get a little bit more color about the acceleration on the cloud side and the deceleration on the enterprise side. If you could give any more color on why you think those were at the extremes and why do you think they normalize going forward, it would be helpful.

<A - Brian M. Krzanich>: I don't want to say that they're going to "normalize". In fact, there's not going to be a major shift. The trend of – look, enterprise is going to continue to decline. We estimate, and again, this is just based on what we get from our customers, talking to the industry. It's going be in the high single-digit decline. I think you'll see quarters like Q2 that was 11%. You'll see quarters like Q1 that were 3% or 4%. We've seen quarters higher than the 11% over the last couple years. So it's going be lumpy as we see this shift, but the overall macro shift of enterprise to cloud or traditional on-prem systems to cloud is going to continue.

I think we'll also see, we still again, talking to our partners, thinking that mid-20% for cloud growth, but I think we'll see quarters like this quarter that was a little bit high. Other quarters we've had in the past have been more in line. So I don't think we're talking about something going normalizing. I'd say it's still going to stay relatively lumpy like this. But if you look at it over the long haul, even when you look at H1, 11% down this quarter, 3% down last quarter, you take a look at those on average and you get to that high single-digit number. So I still feel like that's going to be roughly about where it goes down, and then the cloud will continue to grow at that rate plus additional as more of the growth goes into the cloud.

<A - Robert H. Swan>: The only thing I'd add, Brian, is the supply/demand imbalance of SSDs in the quarter we believe had an impact on the enterprise sector. And as that supply/demand imbalance normals out, we think that will help. But all that being said, the trends Brian highlighted is still how we see the workloads playing out over time.

<Q - Ross C. Seymore>: I guess for my follow-up if I can shift gears over to the margin side of things, and specifically the fall-through. It was great to see that you guys beat your OpEx guidance for Q2. As we think about the full year with revenues going up, why isn't gross margin changing at all? And then the OpEx increase ex-Mobileye, is that just the variable comp that comes in with bonuses et cetera, or is there something else in that roughly $150mm increase to your spending line?

<A - Robert H. Swan>: Just on the second one first, the short answer is yes. The combination of the incremental growth and the addition of Mobileye are the primary drivers for the slightly higher spend.

Your initial comment on flow-through, to put it into context, from where we were in January, our full-year outlook, the revenue is up roughly $1.8B. And with that $1.8B, there will be roughly $200mm of costs, primarily Mobileye. So in context, we feel like we're managing the cost and spending side of the business effectively as we position to a 30% spending of revenue by 2020 at the latest.

In terms of the gross margin dynamics, I think the trends that you've seen over the last couple quarters we expect to continue through the year. And it's really ASP improvements, good unit cost performance, volume leverage through the fab working in our favor. And on the flip side, the strong growth of the memory and the modem business and the ramp costs for 10-nanometer are partial offsets. Those dynamics are what has driven the strong gross margins in the 63% range in H1, and we expect those same dynamics to play out in H2 as well.

<Q - Vivek Arya>: Brian, for my first one, my question is on the competitive landscape in the data center. There's been a lot of discussion about AMD perhaps posing more competition than it has in the last several years. And I appreciate it's early days and you have a very strong product out, but are you hearing about them more in your customer conversations? Is that a more real threat than it has been in the past? Because they did have an event, they did show up with 10-plus potential customers. And in some of the benchmark data, they are showing some performance that is perhaps better at a lower price. So how real is that competition and how are you reacting to it?

<A - Brian M. Krzanich>: I think in general, we see competition across almost every one of our platforms, whether it be in the data center or in the client business, and it's come from a variety of sources.

You're right, AMD has raised up a bit with their more recent products, but you see us responding. This is a traditional performance battle that we're very accustomed to, and we're comfortable in reacting and competing very aggressively in. And so you see us coming out with our Xeon Scalable. You'll see us make maneuvers like we accelerate our Core i9 products, which are all the way up to 18 thread systems on the client based products. So I'd tell you that yes, we're seeing increased competitive pressure from a variety of places. But that actually will just drive us even harder, make us better in the end. And we're comfortable that we can make the right products to deliver the right performance against those.

<Q - Vivek Arya>: And as my follow-up, Brian, if you could give us a little bit more color on your 10-nanometer progress. What is the timing of products around that node? And as part of that, if Bob could remind us how the CapEx and depreciation and OpEx for that node are flowing through the financials. Thank you.

<A - Brian M. Krzanich>: Sure, so on 10-nanometers we are sampling, engineering samples to customers currently. The yields on 10-nanometers are continuing to improve pretty much right in line with the forecasted ramp rates. It's a new technology, so you always have some problems to get solved but we're pretty comfortable with where we're at right now. Like we said in the earnings script, we are set to qualify the first production products right towards the end of the year. You'll see those start to ship in H1 next year and you'll see a ramp of SKUs.

One of the things we're seeing is each one of these technologies, and actually products that we generate, we're generating quite a few more SKUs, Vivek. And so you'll see a variety of SKUs progressing through 2018 as we ramp the 10-nanometer products, starting with the, I'll call it, more simpler SKUs at the beginning, going all the way through the high performance, high complexity SKUs towards the middle and back half of the year. Which is it's a traditional ramp like you see us push out on a new product ramp.

<A - Robert H. Swan>: And then just in terms of the capital, yes, just as a reminder, our full year outlook for CapEx is roughly $12B. We did indicate that approximately $2.5B of that would be for memory. So underlying that, you have $9.5B dollars CapEx for the logic business. For 10-nanometer and specifically you have TD lines and pilot lines going in this year and beginning to scale as we match the capacity with the production that scales in H1 and H2 next year. So that's reflected in the CapEx guide and the depreciation guide that we gave you earlier in the year and that hasn't really changed.

<Q - Stacy Aaron Rasgon>: I had a question on the trajectory of data center growth into H2. And to be honest, I'm still wondering why you don't think you can do better than high single digits. I mean I know you're calling out the tough comp in Q3 but it's only like 10%, right, which is roughly in line with full year guide and it's below the longer-term CAGR. So you're going to see comps at that level or higher kind of into perpetuity. I guess why call that out as an excuse? And what are the issues in terms of hoping and driving for a bigger lift in H2 vs. what you're still currently guiding for with the Skylake-SP launch on its way?

<A - Brian M. Krzanich>: So I think, Stacy, first, we're quite proud of the growth rate we're seeing and especially the growth rates in the growth segments. We're forecasting mid 20s for the cloud business, the networking and storage business and adjacencies on down. What we're having to counter is not only the comps that Bob talked about, but the declining function of the enterprise, right. And so those two things counter those growth rates. Now, as the enterprise continues to shrink, it will become less and less moving forward. So we agree that over time, this will become a smaller and smaller impact to the growth rates. But right now, it's still a large enough percentage. It weighs on our ability to get the growth rate higher.

<A - Robert H. Swan>: Yes, and I would, if I sounded like I was giving an excuse, I maybe should just correct that. We feel great about where we are, H1 up 7%, full year up high single digits, profit expanded during the course of the year and continuing to win in those segments of the market that have differentiated growth rates. So six months into the year, we feel good about where we are and we're excited about the new product that we launched.

<Q - Stacy Aaron Rasgon>: For my follow-up, on the PC side of things, I know you said that the channel's healthy, but it sounds like you also had channel fill in the quarter and it's also included in the guide going forward. So, I guess if the channel's healthy, why is there inventory filling up and what does that imply as we kind of get through the year and look into next year for the likely trajectory of your products' sales into that market?

<A - Robert H. Swan>: I think as we look at kind of the quarter performance – well, I should start with kind of the TAM overall, and Brian highlighted this in the prepared remarks. We have assumed that PC TAM will continue to decline in the mid single digits for the full year, and on the margin, that might be a little better today than it was six months ago. But we're not counting on a dramatic change in the PC TAM consumption for the year.

That being said, we've taken up our guidance quite a bit. So in that, there's a stronger Q2 performance with a little bit of more healthy inventory channels as we go into H2. So, if the inventory was maybe a little bit leaner over the last three to four quarters, I think we'd characterize them in the healthy level now. And we think the ecosystem is building for a H2 that's consistent with our outlook for PC TAM.

<Q - Stacy Aaron Rasgon>: And it needs to build inventory to do that?

<A - Robert H. Swan>: I think the inventory levels, as we see it in the channel, is slightly higher than the lean levels they've been for the last couple quarters, but no dramatic difference from our perspective on how we see PC TAM for the full year.

<Q - John W. Pitzer>: Brian, I apologize if I missed this in your prepared comments. My first question is just around pricing in DCG. It was down about 1% sequentially. There's always a lot of mix things there. You usually have some commentary about ASPs per bucket. Were they still strong? And I guess more importantly, as you think about the product launches in the back half of the year, at least some of our initial checks are suggesting that the customers are kind of chomping at the bit to buy higher up into the stack, which could drive some good ASPs. Can you talk about your expectations around ASPs and/or attach rates for adjacency data center businesses with the launch of the Xeon Scalable?

<A - Brian M. Krzanich>: John. So we expect H2 2017, from an ASP perspective, to be pretty much what you've seen in the past, where ASPs continue to increase on the various platforms of Xeon, right. So looking at each one, you'll see ASPs overall increasing. What you're seeing on this is a little bit of mix, right, so as you saw, networking and storage grow at 17%, the adjacencies at 12%. Those are starting to become a little bit more a percentage of that business and those draw down the overall ASPs a little bit. But if you look within just the Xeon core function, those ASPs continue to increase at about the normal rates that you'd expect, especially as you move into a new architecture like Xeon Scalable.

<Q - John W. Pitzer>: And then for my follow-on, just turning to the Client Compute Group, your ability to sort of segment that market and drive higher mix has been sort of a multiyear endeavor with a lot of success. What inning do you think you guys are in in that process, especially with AMD coming to market with new products? Is there still a mix, a potential story here, and what would drive that?

<A - Brian M. Krzanich>: I actually think there is. So I think if you take a look at this, John, what's driven this has not been clever segmentation necessarily. It's been the ability to segment into specific markets and specific performance. And so things like Core i9 are a good example where you're really targeting performance. And so what I believe is that what the growth areas in the client space, gaming, virtual reality, thin and light, they're requiring performance and power. And remember those are always somewhat tradeable as you take a look at this.

And so those trends are going to continue, and that's why that's as we talked about, how do you feel about competition, where do you see competition playing. We believe our leadership and performance will continue to allow that trend to continue and continue to allow the trend within CCG to continue as well. And that's part of what drove the forecast for H2.

<Q - Romit Shah>: It looks like this is the fifth consecutive quarter that CCG beat expectations. Revenues were up 12%, and I think there's a debate out there as to whether or not you deserve credit for this performance with skeptics really pointing to sustainability more than anything else. And when you break down that 12% as you guys mentioned, ASPs are a big part of the increase. My question is, as you look at the mix in that business overall, is there room to drive ASPs higher and effectively capture more value inside of the PC TAM?

<A - Brian M. Krzanich>: So, yes is the simple answer, Romit. Remember this isn't necessarily us raising prices. So it's not we're out there going and saying okay, I'm going to charge $10 more for the next Core i7. It's actually the percentage of units that are being bought at those higher units, and we continue to deliver higher performance at the same price with each one of these generations.

So what you're seeing is actually an overall trend that, yes, units are down. We talked about that, both I and Bob, around TAM being down somewhere in that low to mid-single-digit range. And that's pretty much in line with what I'm seeing third parties here. Some third parties are a little bit better than that. But for the most part, we're within a couple of percent.

But yes, we believe that there is room for continued demand, for movement upwards. So the number of Core i7s. the number of Core i9s, the number of people buying the performance thin and light laptops, those are going to continue. And you see it in our OEM partners and the type of systems they are producing and the type of systems they're bringing to market. Now they are targeting that more and more as well.

<A - Robert H. Swan>: The only thing I would add is, again, we have a business that has a declining market. It's growing not by raising prices, but to Brian's point by a market that increasingly values performance. And the operating margins of the business for H1 were up over 50%. So this team through its segmentation is executing extremely well.

And then as we mentioned earlier, with that great margin performance, we are redeploying our resources to invest in these data-centric set of businesses that have high growth characteristics that collectively were up 16% again in the quarter. And through this journey of a PC TAM decline, we have a bigger business, a stronger business, and a more profitable business with an increasing portion, over 40%, coming from high-growth oriented businesses, so great performance in a declining market. Continuing to invest in it and reallocate across our portfolio, and feel good about the portfolio we have, and with the addition of Mobileye as we head into H2.

<Q - Romit Shah>: And in terms like, you obviously provide ASPs for CCG, but is the Core mix as a percentage of units a metric that we should be focusing on? And if I remember correctly, that percentage was close to 70%. I'm curious where it is today.

<A - Brian M. Krzanich>: It's continuing to climb. It is, but don't forget even within that Core mix, Romit, you have the ability to continue to scale up. So Core i3 vs. Core i5 vs. Core i7 and now we've introduced the Core i9, which is even higher performance.

<A - Brian M. Krzanich>: So we saw early on people choosing Core over Pentium or Atom, for example, and you saw the Core mix move up. You're now seeing not only that continue to climb, but you're going to see within Core the amount of Core i7s, Core i9s, Core i5s continue to climb as well.

<A - Brian M. Krzanich>: And that's why we continue to see that there are legs behind this. And you said are we getting credit for this, so we don't think when you look overall this business, last year's performance with great growth in all of the segments. You look at this year's performance so far in H1 and our projections now in H2, we think that our ability to segment, to drive better operating margin, and to continue to drive performance into the PC and keep it more and more profitable while we invest and grow these other businesses, we think that there's an option around Intel that is quite good.

<Q - Harlan Sur>: In DCG, you guys are probably full throttle from a manufacturing perspective for Xeon Scalable or Skylake in the June quarter. But my question is how much of the data center growth in June was the initial production revenue shipments of Xeon Scalable to your customers, or did that contribute just very little to the June quarter mix?

<A - Brian M. Krzanich>: Yes, it's very little. We don't give out exact percentages by SKU like that. But I can genuinely tell you that it is really just the beginning of the ramp of the Xeon Scalable. And so its impact into Q2 was minimal at best. What you'll see is, as it ramps into H2, it becomes a higher and higher percentage, and really the big volume is going be 2018. So that's when it really takes over from the way the data center looks from a revenue and profit standpoint.

What we're excited about is we talked about the 500,000 units that are out there. That was the highest number of pre-samples. That shows you the demand by the big infrastructure guys around the performance. They were willing to take the product even before, quote, we were ready to start shipping it. And then the number of records we've broken already in performance, we talked about 50 records worldwide already. Those are laying the groundwork for how this ramp is going look and feel as we move into H2 and into 2018.

<Q - Harlan Sur>: And good to see the profitability in the NAND segment. In enterprise SSD, I think you guys are still number two global market share leader there. And it looks like based on H1 performance, you guys are outpacing the market. So I guess the question is where is the team winning. Is it high capacity? Is it high performance for these enterprise and cloud drives? And similar to maybe some of your peers, is the team currently capacity constrained?

<A - Brian M. Krzanich>: So our whole strategy around the memory is that we are focused on differentiation and performance and specifically around supporting the data center. We do sell into client as well but that's not the main focus of this business. And so I'd tell you when we talk about our growth and when we talk about our projections for the rest of this year and why we're investing in the future, that 64-tier NAND gives us the ability to be a better cost but the high performance end. So we're not going after commodity SSDs that you're going to see even in high-end workstations necessarily. It's really focused towards the data center products.

Even still, there's not all SSDs and data centers are high-end performance. So we're comfortable with where we are in a market share. We want to balance those investments against the demand for these high performance areas and make sure we keep that in balance. And our real goal is then to move more and more of the business towards the 3D XPoint as we move into next year because that really differentiates us again as we really change the hierarchy between memory and storage as the data center DIMM memory systems come out