Operator

Good day, ladies and gentlemen, and welcome to the Intel Corporation second quarter 2016 earnings conference call. At this time, all participants are in a listen-only mode. Later, we will conduct a question-and-answer session, and instructions will be given at that time. As a reminder, this conference call may be recorded.

I would now like to turn the conference over to Mark Henninger. You may begin.

Mark H. Henninger - Vice President-Finance & Director-IR

Thank you and welcome, everyone, to Intel's second quarter 2016 earnings conference call.

By now you should have received a copy of our earnings release and the CFO commentary that goes along with it. If you've not received both documents, they're available on our investor website, intc.com. I'm joined today by Brian Krzanich, our CEO, and Stacy Smith, our Chief Financial Officer. In a moment, we'll hear brief remarks from both of them, followed by the Q&A.

Before we begin, let me remind everyone that today's discussion contains forward-looking statements based on the environment as we currently see it, and as such, does include risks and uncertainties. Please refer to our press release for more information on the specific risk factors that could cause actual results to differ materially.

Also, if during this call we use any non-GAAP financial measures or references, we'll post the appropriate GAAP financial reconciliation to our website, intc.com.

So with that, let me hand it over to Brian.

Brian M. Krzanich - Chief Executive Officer & Director

Thanks, Mark.

Our top line results for the quarter came in right in line with outlook, and profitability this quarter exceeded our expectations. Year-over-year growth this quarter was 3% overall, as we transform Intel into a company that powers the cloud and billions of smart connected devices.

We continue to focus on growth in line with this transformation, as evidenced by results in the data center, IoT, and Programmable Solutions business this quarter. I'd like to take a few minutes to walk through these results and their implications.

I'll start with the Client Computing Group, where we saw a 3% decline in revenue year over year this quarter, while operating margin was up 19%. These results were a little better than we expected, as the PC supply chain reduced inventories at a slightly slower rate, while the 2-in-1 and enthusiast product lines continued to grow. We also started shipping our seventh generation Core microprocessor, formerly known as Kaby Lake, and our latest LTE modem, known as 7360.

Next, the data center, where revenue grew 5% year over year, cloud services providers grew 9%, comm service providers grew 10%, and enterprise was down 1%. We achieved some critical milestones in the quarter that give us confidence in our growing momentum as we enter the second half of the year.

In the data center, we're seeing an ongoing preference for performance up and down the pricing stack. Average selling prices increased year over year in every microprocessor product segment from Atom and Xeon D SOCs at the low end, up through Xeon and Xeon Phi at the high end. We continued to gain share in Network Infrastructure throughout the entire segment, as Intel architecture becomes the solution of choice for the transformation of the network to SDN, NFV, and 5G. The significant share gains at the low end of the Network Infrastructure segment resulted in an overall 1% decline in data center CPU average selling prices.

Progress in the data center extended beyond our CPU product lines. Our latest Xeon Phi accelerator, formerly known as Knights Landing, continued to ramp after shipping the first limited production units in December of last year. Xeon Phi revenue grew 8x in the first six months of this year versus all of 2015, gaining share in the supercomputing and machine learning segments.

Omni-Path, our high-performance computing fabric, was launched earlier this year and has already achieved 30% market segment share of the 100-gig fabric market. In June's Top 500 Supercomputing list, Omni-Path was deployed in half of the new 100-gig systems, pointing to the performance that this technology brings to the market.

This quarter, we also shipped our first silicon photonics products for revenue, the industry's only fully integrated solution. We expect DCG's adjacent product lines, including Omni-Path, silicon photonics, and Ethernet, to collectively grow more than 20% for the full year and this quarter make up 12% of DCG's revenue.

The Internet of Things business was up 2% over last year, coming in below our expectations. We saw growth in the industrial and video verticals, offset by an inventory burn after a very strong first quarter. We continue to see tremendous potential in this business.

A great example was demonstrated earlier this month when we announced our autonomous driving collaboration with BMW and Mobileye, marking a significant step for the auto industry as we work together to establish an industry standard open platform for autonomous driving. In addition, we are bringing Indian computing technology to power the next generation of BMW's highly autonomous and fully autonomous products, from the door locks to the data center.

Our Memory business was down 20% over last year and fell short of our expectations as a result of a more competitive pricing environment. While we acknowledge the cyclical and competitive nature of this business, we remain confident in our long-term growth prospects as a result of the new technologies we are bringing to this market.

Fab 68 in Dalian, China, started its initial 3D NAND wafers late in the second quarter, but ahead of schedule. We also remain on track to ship 3D XPoint SSDs, branded Optane, by the end of the year, and look forward to delivering this exciting new breakthrough in memory to the industry.

The Programmable Solutions Group, formerly known as Altera, delivered great results. PSG grew 12% over Altera's results last year on strength in comms, infrastructure, and the channel. PSG is on track to ship 14-nanometer Stratix 10 samples this year, and I'm very pleased with both the integration of this business and their strong execution.

Our Security business was up 10%, as the restructuring the team completed last year and their focused execution continues to deliver results.

And finally, our restructuring initiative that we began last quarter is solidly on track. This program is changing where and how we invest in everything from research and development to sales and marketing. In April, we announced some important changes to our roadmaps in areas like SOCs and perceptual computing. These changes are accelerating our transformation to a company that powers the cloud and the billions of smart connected computing devices while increasing the profitability in our client business. In total, we expect this initiative will drive net run rate OpEx savings of $1.4 billion by mid-2017.

Looking ahead, I'm very excited about the growing momentum heading into the second half of the year. While we remain cautious about the PC segment and continue to expect a decline in the high single digits this year, we're expecting our businesses outside of CCG to collectively deliver double-digit growth in the third quarter.

We are seeing clear signs that our strategy is working, laying a solid foundation for growth built on the data center and the Internet of Things business, reinforced by the combination of memory and FPGAs and bound together by connectivity.

With that, let me turn it over to Stacy.

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Thanks, Brian.

In the second quarter, we met our financial commitments and made good progress towards our restructuring goals. Our forecast reflects growing momentum as we enter the back half of 2016.

Revenue for the second quarter was $13.5 billion, in line with expectations and up 3% year over year. Gross margin for the quarter of 62% was approximately a point higher than our expectations, primarily driven by lower platform unit costs.

Spending on R&D and MG&A was $5.2 billion, in line with our expectations. We are on track to the restructuring announced on the last earnings call, with a reduction of about 6,000 employees in the second quarter.

Operating income of $3.2 billion was down 2% from a year ago. The effective tax rate for the quarter was 20%. Earnings per share at $0.59 was down $0.03 from a year ago.

The Client Computing Group had revenue of $7.3 billion, down 3% year over year. Client Computing Group operating profit was $1.9 billion, up 19% from a year ago. This improvement is driven by lower overall spending and margin improvements in our mobile products and higher ASPs in the PC segment. The worldwide PC supply chain inventory levels came down a bit in the second quarter, and as we enter the second half they are at healthy levels.

Data Center revenue was $4 billion, up 5% year over year. The Data Center Group had operating profit of $1.8 billion, down 4% year over year, primarily driven by increased costs as we ramp 14-nanometer data center products. As we enter the second half, we expect the enterprise segment of the business to stabilize and the cloud segment growth rate to accelerate. In addition, we expect increasing ASPs as we ramp our Broadwell-based server products.

Our Internet of Things segment achieved revenue of $572 million, with year-over-year growth of 2%. Our security business had revenue of $537 million, up 10% year over year. Our memory business had revenue of $554 million, down 20% year over year. This segment had an operating loss of $224 million as a result of continued pricing pressures, higher startup costs as we ramp 3D NAND in our China factory, and increased 3D XPoint spending.

The Programmable Solutions Group had revenue of $465 million, up 12% year over year when compared to Altera's results from a year ago. Operating profit was negative $62 million. This includes about $160 million in non-cash charges for inventory adjustments. Excluding these charges would result in about $100 million in positive operating profit.

Total cash balance at the end of the quarter was roughly $17.7 billion, up $2.6 billion from the first quarter. Our total debt is $28.6 billion. Our net cash balance, total cash less debt and inclusive of our other longer-term investments, is negative $5.7 billion. We are projecting to improve this net cash balance over the second half of the year.

We are generating healthy levels of free cash flow, which enable us to invest in our business and return cash to shareholders. This is demonstrated our Q2 results, as we generated $3.8 billion of cash from operations in the second quarter, purchased $2.3 billion in capital assets, and repurchased approximately $800 million of stock. In the second quarter, we also paid $1.2 billion in dividends. And as of yesterday's close of market, our dividend yield was about 3%.

As we look forward to the third quarter of 2016, we are forecasting the midpoint of the revenue range of $14.9 billion. This forecast is at the high end of the average seasonal increase for the third quarter. We are forecasting the midpoint of the gross margin range to be 62%.

Turning to the full year 2016, we expect revenue growth in the mid-single digits. We continue to expect the overall PC market to be down in the high single digits, and we expect to achieve low double-digit growth in our Data Center business. Gross margin for the full year of 2016 is expected to be 62%, consistent with our prior outlook.

You can see our strategy playing out in our first half results and our expectations for the second half. We expect above-seasonal growth in the back half of the year, led by strong growth in the Data Center, Internet of Things, and Memory businesses. And for the year we expect that growth in those businesses will offset the PC market decline, and with the addition of the Programmable Solutions Group, will result in mid-single-digit revenue growth.

Additionally, we are executing to our restructuring program, which allows us to increase investments in strategically important areas, generate financial returns for our owners, and build the foundation for future financial growth.

With that, let me turn it back over to Mark.

Mark H. Henninger - Vice President-Finance & Director-IR

Okay, thank you, Brian and Stacy. Moving on now to the Q&A, as is our normal practice, we would ask each participant to ask one question and one follow-up if you have one. Operator, please go ahead and introduce our first questioner.

Question-and-Answer Session

Operator

Our first question comes from the line of Chris Danely of Citigroup. Your line is now open.

Christopher B. Danely - Citigroup Global Markets, Inc. (Broker)

Hey, thanks, guys, just a question on the server expectations for the second half. What's giving you the confidence that things are going to bounce back so nicely?

Brian M. Krzanich - Chief Executive Officer & Director

Sure, I'll start and then Stacy can add. This is Brian, Chris. I think it's really a mix of a couple of things. One, we saw in the second quarter and we project out into the second half a bit of stabilization of the enterprise side of the market. The enterprise side was down only about 1%, which is a bit more stable than it has been. Second thing is we are ramping our Broadwell E server in the second half of the year, and so we expect strong demand. And we typically see an ASP uplift as people by up in the stack with these new server systems coming out. And we have customer signals that just indicate that there's a second half seasonal buying pattern kicking in a bit as well. So those three things are the second half keys.

And if you take a look at a broader view of this or just overall, our view of the data center and really the cloud continues to be that the cloud is going to continue to expand. It's going to be driven by the many, many machines that connect to the cloud that drive orders of magnitude more data than what the average human creates today, and that's getting to the cloud. So there's the short versus the longer-term point of view. I don't know, Stacy, if there's anything you want to add.

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Perfect.

Christopher B. Danely - Citigroup Global Markets, Inc. (Broker)

And for my follow-up, you mentioned you started shipping the 7360. Was that material to Q2 or will it be material to the second half, and any comments on profitability there?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

I'm not going to talk specifically about the 7360 because our policy is to let our customers announce any design wins that they want to announce when they want to announce them.

In terms of the overall impact on financials, when I look at the second half, you'll note that we have an above-seasonal growth rate in there. The biggest driver of that is what Brian just talked about in the data center, so that's the biggest driver. We were below the average annual growth rate in the first half. We expect to be above that, low double digits, in back half, driven by the three things he talked about, in particular the cloud buying patterns that we've identified with some of those large customers. And then behind that, we see an improvement in revenue in Memory and an improvement in revenue in IoT. And so those are the big drivers as we go into the back half.

Christopher B. Danely - Citigroup Global Markets, Inc. (Broker)

Thanks, guys.

Operator

Thank you. And our next question comes from the line of John Pitzer of Credit Suisse. Your line is now open.

John William Pitzer - Credit Suisse Securities (USA) LLC (Broker)

Good afternoon, guys. Thanks for letting me ask a question. Stacy, you did a nice job relative to the full year guidance giving us your expectation for PC demand for the year. I'm just curious. As you look into the third quarter, the guide is the high end of normal seasonality, as you talked about. How would you characterize your view of the PC business going into Q3? And to the extent that it's still a subdued view, is this really confidence in data center, or what other parts of the business would drive above-seasonal – or high end of seasonal, sorry?

Brian M. Krzanich - Chief Executive Officer & Director

Hey, John, how about if I start on just the view of the PC, especially into the third quarter, and then Stacy can get into where is the above-seasonal numbers coming from and all? I think if you look at the second half, we already said that Q2 ended up being a little bit better than what we had anticipated, and we had built the year at the high single digits. And if you take a look at Q2, it ended up coming at the mid-single-digit decline. We've tried to be relatively cautious as we look out into the rest of this year and built the year and the forecast around that high single-digit number set for decline of the PC. We are carrying momentum out of Q2, so there's still data that needs to be collected on how it looks. But right now we've maintained our cautious view of high single digits.

Stacy J. Smith - Chief Financial Officer & Executive Vice President

So just to translate that into seasonality against the backdrop of what Brian just said, which is high single-digit decline in the PC business, we're expecting that segment to play out more or less seasonally, John. We tend to do a little bit better than that because of mix and ASP, but from a unit standpoint should be fairly seasonal. And then the driver is what I just talked about. The data center growth rate as we move into the back half should be significantly higher than what we saw in the first half based on stabilization in enterprise, what we see with the cloud customers, and then some ASP uplift as we ramp Broadwell server – 14-nanometer Broadwell servers into the product mix.

John William Pitzer - Credit Suisse Securities (USA) LLC (Broker)

That's helpful, guys. And then maybe for my follow-up, just looking at the Memory businesses, as you guys characterized, tough quarter in the June quarter. If you annualize the operating loss, it's a fairly large number. I'm just curious. Have startup costs there peaked, or do we have another couple of quarters of startup costs going up in Memory? And I guess more importantly, as Dalian ramps and you think about XPoint, how should we think about your profitability goals longer term and what the fall-through on that business looks like as revenue does start to accelerate?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

So there's a short-term and a long-term component to this. So in the short term, as I think about the second half, in rough math I'd expect a consistent loss in the second half to what we saw in the first half. I think startup costs will be slightly higher. We'll see the first production costs play through on 3D XPoint, which as you know from watching us over the years, those first production costs tend to be fairly high in any factory when you're starting it up. Offset by the underlying existing NAND business, I think it's a bit better as we go into the back half. So that's the short-term answer.

To your longer-term question, and I'll turn this over to Brian to talk about the technology, but I think the combination of 3D NAND and the cost structure we're going to achieve and then the disruptive nature of 3D XPoint, we should have a very good value proposition and a very good overall profit position for the business.

Brian M. Krzanich - Chief Executive Officer & Director

Yeah, John, I would just echo what Stacy said. We're just now starting to ramp our 3D NAND. So as we go through this back half of this year and into next year, it's really starting to ramp up. We think large cost advantages and good performance position there. And then as we said, 3D XPoint SSDs start to ship at the end of this year, 3D XPoint DIMMs next year. And so these investments that we're making this year, which we've talked about, are really playing forward those two technologies. So we're still very bullish on the long-term prospects. The units and the gigabytes continue to grow. Our cost structure gets better and better as we go through the back half and into next year. And then 3D XPoint, as we said, will really in our minds change the whole memory storage architecture.

John William Pitzer - Credit Suisse Securities (USA) LLC (Broker)

Thank you.

Operator

Thank you. And our next question comes from the line of Joe Moore of Morgan Stanley. Your line is now open.

Joseph L. Moore - Morgan Stanley & Co. LLC

Great, thank you so much. I wonder if you could talk about first the data center. The growth – your mid-single-digit growth for about three consecutive quarters, and I know you had higher expectations for that a few quarters ago. Can you talk about – is that entirely an enterprise phenomenon, or is that a timing issue around cloud? Just how should we think about the last few quarters of DCG?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Yeah, I'd say – so overall, relative to the expectations we had at the beginning of the year, let's say, it's primarily enterprise driven. And then there's some – what we commonly use as lumpiness quarter on quarter. So to how you ask the question, we actually weren't surprised by the Q2 results. In fact, they came in right in line, actually just a hair above what our internal forecast was. We have I think pretty good insight into the large cloud customers, and so we had some good insight into the buying patterns as those customers went from Q1 to Q2. And now as we look at the back half, we see several purchasing cycles kicking in for some of the large guys. So we expect that the cloud piece will accelerate as we get into the back half.

Joseph L. Moore - Morgan Stanley & Co. LLC

Great, that's helpful. Thank you. And then with regards to the balance sheet, I noticed both days sales outstanding and days of inventory bumped up a little bit, and I hadn't expected that. Can you just talk about what drove that?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Yeah, those are two different things. I'll just start with the easy one, days sales outstanding. I'm not seeing anything unusual there, it's just the amount of net billing at the end of the quarter. The average day paid and all of that still looks really healthy, so I'm not seeing anything unusual there.

On the inventory side, as I talked to you last quarter, we ended Q1 higher than where I wanted to be. Our yields got better in Q1. Frankly, they got a lot better in Q2 as well. And we under-shipped a little bit in Q1 relative the units that we were expecting. So we took some actions in the second quarter to start bringing inventory levels down. What you see inside of inventory was – it was flattish, right in line with what we expected Q1 to Q2. There was a remixing, so you see some more expensive server parts and some Skylake parts going up. And then you see some of the older-generation CPUs going down. And as we get into the back half, we would expect inventory to click down and be down pretty meaningfully by the time we get to Q4.

Joseph L. Moore - Morgan Stanley & Co. LLC

Great, thanks so much.

Mark H. Henninger - Vice President-Finance & Director-IR

Thanks, Joe.

Operator

Thank you. Our next question comes from the line of Harlan Sur of JPMorgan. Your line is now open.

Harlan Sur - JPMorgan Securities LLC

Good afternoon and thanks for taking my question. PC gaming has been a bright spot for the team, with growth in the double-digits year-over-year range for the past number of quarters; your desktop ASPs were up again in Q2, maybe due to the strength here. It seems like the graphics guys are rolling out some new products. There appears to be a good pipeline of new games for the second half. So I guess the question is, did the PC gaming segment continue to drive double-digits growth for the team in Q2, and how do you see that trending into the second half?

Brian M. Krzanich - Chief Executive Officer & Director

Sure. If you take a look at it, there were three-ish, maybe four-ish major segments of the PC that did better and continue to do better than the rest of the segment and just overall. Laptops, mobile PCs continue to do better. They did better in the second quarter. 2-in-1 devices specifically are doing very well and continue to grow in double digits. And then as you said, we often call the enthusiast gaming, you see our K SKUs in there, and then you saw us also announce the X SKU, which is our new 10-core system that has been selling much, much better than what even we anticipated. And so yes, gaming and enthusiast continues to grow at a double-digit rate.

Harlan Sur - JPMorgan Securities LLC

Great, thanks for the insights there. And then on the deceleration in the IoT business in June, you talked about an inventory burn. Sorry if I missed this, but what vertical was that focused on? And does the team expect reacceleration on a year-over-year basis as you move into the second half of the year? And if so, what verticals are going to be driving the growth?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Let me take the revenue question, and I'll let Brian take what we see in the verticals part. It was not one vertical. If you just look at it, I think our customers got out a little ahead of their skis in the first quarter. If you remember, I think we had a 21% or 22% year-on-year growth rate in Q1. There was a little more inventory out there than we anticipated, and that took some of the – that was a bit of headwind as we started Q2.

To your question on the back half, we do expect a reacceleration. So I had said at the investor meeting that we expect double-digit growth in excess of what we had achieved last year. We still expect that. We had a strong Q1, an inventory burn in Q2, and we expect a strong Q3 and Q4.

Brian M. Krzanich - Chief Executive Officer & Director

And from which verticals? The verticals that have been the strongest growing for us, especially in recent, has been industrial and in the security video type applications. Those have been the two real growers. We have a lot of I'll call it longer-term growth vectors. Retail is a longer-term growth vector. And then you saw, as we mentioned on the call, the automotive ADAS section in the announcement with BMW. There are several other programs in that space as well.

Harlan Sur - JPMorgan Securities LLC

Great, thank you.

Operator

Thank you. And our next question comes from the line of Stacy Rasgon of Bernstein Research. Your line is now open.

Stacy Aaron Rasgon - Sanford C. Bernstein & Co. LLC

Hi, guys. Thanks for taking my question. I just wanted to verify. On the DCG I guess growth target into the back half, it sounds like you need enterprise to keep getting better into the second half as well as for I guess the cloud and comm side of DCG to significantly reaccelerate to get there. Cloud was up 9% year over year, and it's good but that's a significant deceleration. Can you give us a feeling for what you need for enterprise into the back half and what drove the deceleration in the high-growth parts of this business into Q2?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

So I'd say – I'd characterize enterprise in the back half consistent with what we saw in Q2. If it stabilizes at that rate, that gives us the ability to grow to the levels that we're projecting. And then for the cloud, yes, you're right. It's what I said earlier. We had actually forecasted a pause in purchasing based on what we knew of the customer – the big cloud players' ordering patterns. And based on the signals we're seeing from them, we do expect a reacceleration in the back to something more consistent with what we're seeing through the last couple years.

Stacy Aaron Rasgon - Sanford C. Bernstein & Co. LLC

So what gives you confidence that enterprise will continue to stabilize and that what we saw in Q1 is not a one-quarter blip, given it's been down pretty meaningfully for the last few years pretty consistently?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

It's what we saw in Q2.

Stacy Aaron Rasgon - Sanford C. Bernstein & Co. LLC

In Q2, I mean.

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Yes, we saw it down slightly. And again, it's just what we see of the big enterprise customers' signals to us in terms of what they want to purchase.

Mark H. Henninger - Vice President-Finance & Director-IR

Thanks, Stacy.

Operator

Thank you. And our next question comes from the line of Ross Seymore with Deutsche Bank. Your line is now open.

Ross C. Seymore - Deutsche Bank Securities, Inc.

Hi, guys. Thanks for letting me ask a question. Given that dynamic in the cloud and the enterprise side within DCG, do you still expect a crossover in the percentage of revenues that those two generate the back half of this year, or is it pulled forward a little bit – or pushed out, given the dynamics that you've described so far?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Sorry, crossover from what to what, Ross?

Ross C. Seymore - Deutsche Bank Securities, Inc.

When you said – I believe at your last analyst meeting you talked about the cloud revenue, the percentage of DCG would be somewhere in the mid-30%, and that would cross over the enterprise-generated revenue in that. And that was therefore viewed as a point of acceleration for the entire group. I'm wondering, given the slower growth year to date in that business, if that crossover is going to be achieved in the time you expected.

Stacy J. Smith - Chief Financial Officer & Executive Vice President

I'll be honest. I haven't looked at the data from that lens. But what I said – let me just take you back to the answer that I gave – I think it was to Joe's question earlier, that if you look to the expectations we had at the beginning of the year, the enterprise is a bit weaker than we thought overall for the year. And I think cloud will be in line with what we thought. So my guess is that's still true. Which quarter it happens may be a jump ball, but my guess is it's still true. But I'd like the opportunity to actually go look at the data and I can give you a crisper answer next time we talk.

Ross C. Seymore - Deutsche Bank Securities, Inc.

Okay. I guess as my follow-up question, sticking with DCG then, is on the gross margin side. It sounds like you're expecting some pretty significant growth, not only on the unit side of the equation in DCG but also on the ASP side. And then you also talked about some of the ASP benefits that might happen in CCG, at least in the PC portion of it. If I put that all together, I'm a little surprised that either mix or ASPs, neither of those are mentioned in your gross margin reconciliation for it to go to 62% in the third quarter. Can you talk a little bit about how those dynamics fit into your gross margin?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Sure, so first let me start with your question on data center. There's a lot in there. So I do expect an operating margin improvement in the data center as we work through this year. I think we were around mid-40% in the second quarter, and our historical range has been closer to 50%. As I expect it, that picks up some as we move into the back half. The big driver there is costs. And so the early production on the Broadwell server is fairly expensive. Costs come down as we get into the back half. And as you said, we do expect some ASP uplift in the back half.

Overall for the company, what we're seeing, so I'll just Q3 as the anchor point. We're seeing some good news in Q3 associated with higher volumes. And then the big offset there is we're seeing 10-nanometer startup costs going up pretty significantly in the back half. So that may be the piece that you're missing in the equation in Q3. That continues into Q4, by the way. We see a little bit more startup costs. If you do your algebra, you're probably coming up with a gross margin for Q4 that's about 62%. So think of that as some good things happen, but we have again an increase in startup costs and we have some of the Dalian costs with the first production of 3D XPoint that also kick in a bit more in Q4.

Ross C. Seymore - Deutsche Bank Securities, Inc.

Great, thank you.

Stacy J. Smith - Chief Financial Officer & Executive Vice President

You're welcome.

Mark H. Henninger - Vice President-Finance & Director-IR

Thanks, Ross.

Operator

Thank you. Our next question comes from the line of Chris Caso of CLSA. Your line is now open.

Christopher Caso - CLSA Americas LLC

Yes, thank you, just a clarification on some of your earlier comments on inventory in PC. You talked about the customers taking down the inventory a little bit less than you had expected in Q2. Can you clarify why they chose to do that? And I guess with the inventory levels right now, where do they stand relative to where you'd expect them to be into the third quarter?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

So overall we continue to see inventory levels as being very healthy. I think that the PC, the worldwide PC supply chain has moved towards a stance of being fairly lean and fairly cautious, and we see that continuing. You would typically see an inventory burn in the second quarter. It was a little bit less of an inventory burn then what we expected. I think it goes back to Brian's comments that he made at the beginning of the call that from their perspective, the PC market was a little better in Q2, so I think they probably just brought down inventory levels a little bit less.

Christopher Caso - CLSA Americas LLC

Okay. As a follow-on to that, maybe you can clarify what you consider to be normal PC seasonality in the third quarter because I think that's been changing over the past several years. Last year, the build into the third quarter was a little stronger. Obviously, there were some product launches there. How do you characterize the build this year relative to what we've seen last year and the year before?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

So I would say for the company, you would expect to see the seasonality of revenue, seasonality for us that's in the high single digits as we go from Q2 to Q3. Our guide is a little higher than that for the reasons that we've been talking about. The PC market is probably in line with that, maybe just a pinch higher in terms of the overall PC TAM.

Christopher Caso - CLSA Americas LLC

Great, thank you.

Operator

Thank you. And our next question comes from the line of Matt Ramsay of Canaccord Genuity. Your line is now open.

Matthew D. Ramsay - Canaccord Genuity, Inc.

Yes, thank you very much. Good afternoon and thanks for taking my question. I guess it's a follow-on to the DCG question that Ross had brought up in terms of margin. The DCG business is obviously going to diversify itself some going forward with some of the new products that you're introducing and the networking business taking off. The operating margin percentage is down fairly sharply year over year, and I would expect that to ramp back up some as revenue reaccelerates. But maybe, Stacy, you could talk about what the long-term margin structure looks like from an operating margin perspective in DCG as the business diversifies some. Thanks.

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Sure. So we'll talk about that in more depth at the investor meeting, but I'll give you some off-the-cuff comments here. First, to just put it in perspective, the operating margin percent decline that we saw in Q2 had nothing to do with the new products, or the new products weren't driving it. It was the 14-nanometer costs of Broadwell server. And when we get into the back half, we're going to see an ASP impact associated with that because we think that the performance of that product enables customers to get a better value proposition by buying a richer mix. So that's why I'm pretty confident when we get in the back half, we see the margins snapping back towards that 50% that we've articulated as our long-term goal.

We'll talk more about the mix of products and whatnot at the investor meeting, but the one thing I'd point you to is, remember something like networking, which is an Atom-based server product that's going in, while it does have a lower ASP than the average within DCG, it has an ASP that's actually been going up and has a very different cost structure then a Xeon does. So I wouldn't just immediately assume that because it's a lower priced segment of the market that it's a margin-hindered segment of the market because that's not the case.

Matthew D. Ramsay - Canaccord Genuity, Inc.

Great, thank you. That's really helpful. And then I guess to follow up on that, sticking on margin, maybe you could talk a little bit about how adding the third chip on 14-nanometer may affect margins going into 2017 in the PC business to offset some of the 10-nanometer ramp costs you had talked about. I think it's a little bit of a different dynamic than we've seen with the business traditionally with a tick-tock approach. So any broader comments you can give there about margins would be really helpful. I appreciate it, thanks.

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Let me take the margin side, and then I'll let Brian come in over the top to talk a little bit about the roadmap and how we think about that from the customer's perspective. So first off, we haven't forecast 2017 margins, so we'll give you the first glimpse of that when we get to the investor meeting, and then we'll put a formal stake in the ground when we get to next January. But I would say that there's nothing that I'm seeing in the overall roadmap that for me is a significant headwind as we go in 2017. So we'll give you a lot more insight on that in a few months, but I'm not seeing anything that has me worried as we go into 2017.

Brian M. Krzanich - Chief Executive Officer & Director

I guess what I would talk about is Kaby Lake. So one of the things we've learned on 14 nanometers is how to make meaningful performance improvements both in the silicon and then with the silicon combined with the architecture. So we said we already started shipping Kaby Lake to our customers and OEMs. We're seeing meaningful performance across all of the various SKUs of Kaby Lake relative to Skylake. Kaby Lake is built off a Skylake core. And as a result, the die size doesn't significantly grow. So you don't see – there's no driver in the silicon itself to shift the margin structure of this product. We're able to get the performance and feature enhancements with relatively small silicon increases but good improvement on the raw silicon technology itself. So there's not an intrinsic driver that should say die size got twice as big so margins are cut. There's nothing like that.

Stacy J. Smith - Chief Financial Officer & Executive Vice President

And it comes in on a process technology that's mature with healthy yields and a healthy cost structure. So from that perspective, you get a nice performance boost at a good cost structure.

Matthew D. Ramsay - Canaccord Genuity, Inc.

Thank you very much.

Mark H. Henninger - Vice President-Finance & Director-IR

Thanks, Matt.

Operator

Thank you. Our next question comes from the line of Romit Shah of Nomura Securities. Your line is now open.

Romit J. Shah - Nomura Securities International, Inc.

Yes, thanks. Brian, I know that you remain cautious overall in the PC market. But when you look at some of the third-party data, it definitely seems like North America was better; Asia, Latin America a little mixed. I'm wondering, has your view, at least on a regional basis, changed at all?

Brian M. Krzanich - Chief Executive Officer & Director

So my regional view would say that certain of the – so North America and Western Europe has been stronger for us for some period of time, and it continues to be the stronger segment for us. As you said, South America – Latin America continues to be weak. We see weakness in Asia, but it did get a little bit better than in the past, and that combined with North America were the two drivers that made Q2 perform better than what we had modeled in our high single digits. And as I said, I'm being relatively cautious in this and making sure that we put an estimate out there that we are very comfortable with, and that's why we have gone with – stuck with our high single-digit view of the year.

Romit J. Shah - Nomura Securities International, Inc.

The other thing that's been reported is that commercial models have seen some momentum. Windows 10 has been a catalyst. Your view on commercial enterprise, has that improved at all over the last 90 days?

Brian M. Krzanich - Chief Executive Officer & Director

Yes, and we're hearing that same thing from our customers. And as we go out and talk to CIOs, we're hearing the same thing. Those cycles, though, can sometimes take – you'll hear of them, and they sometimes can take some time to really kick in. So again, we've built that into the cautiousness of the second half and making sure that we know what we're going into the second half with. But we are hearing similar things around the enterprise conversion. It's comfort with Windows 10, ability to make that transition, and wanting to do it on new hardware.

Romit J. Shah - Nomura Securities International, Inc.

Great, thank you.

Operator

Thank you, and our next question comes from the line of C.J. Muse of Evercore ISI. Your line is now open.

C.J. Muse - Evercore Group LLC

Good afternoon. Thank you for taking my question. I guess first question on XPoint. You talked about stronger growth expectations looking out over the next couple years. I'm just curious if you could share what conversations you've had with customers, what use cases you've uncovered, and any thoughts in terms of sizing the market.

Brian M. Krzanich - Chief Executive Officer & Director

So we haven't really tried to – we have pretty widespread guesstimates and models right now on sizing the market because we're still really learning. We've actually started to ship some sample units to customers already to let them try out and start to learn. Those are to the big, call it service providers, is mostly who we're sending those to. You're going to see it enter as SSDs. You'll see those SSDs, both enterprise-class SSDs and also commercial consumer type SSDs, we demonstrated in several live demonstrations anywhere from 5x to 7x, 8x, 9x, 10x improvement in performance depending on the workload through those SSDs. So you're going to see those be the first implications.

When I think about where the big volume will come from, I think it will come in that DIMM form factor. You're going to see it in cloud applications, everything from machine learning, big data. Anyplace where you have memory-intensive and where you can do in-memory applications, the 3D XPoint is going to be nicely configured for that. It allows you to bring large amounts of storage-like data into a memory-like performance. And that's the real key here.

I also believe you'll see it in consumer devices. You'll see laptops and devices like that. Gaming machines, we think it will have gaming applications where you can preload in a cache-like environment the next level of your game, and so it loads almost instantly as you transition within the game. So there's going to be a variety of those. And actually the more we go and start to play with it, start to give it out to customers, the more types of applications and workloads we're finding that it can be used for.

C.J. Muse - Evercore Group LLC

That's very helpful. And I guess as a quick follow-up, Stacy, can you provide an update on your targeted capital structure here, and at what point with net leverage – net cash we should start to see more aggressive buybacks?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Sure. As I communicated I think at the investor meeting or in the last six months, our goal is to get back to net cash zero. At one point I predicted that that would happen in the back half of this year. The combination of business levels being lower from what we thought at the beginning of the year as well as some pretty significant restructuring charges will push that out, so that will happen sometime in 2017, although I do think we'll make good progress towards net cash zero as we move into the back half. Today, our net debt level is right around $5 billion, so we'll take a big chunk out of that as we move into the back half.

In terms of then – now that said, we're still generating excess free cash flow. You can see that even in the first half, even inclusive of the restructuring charges we did. And so you can see we did I think $1.6 billion of buybacks in the first half, and we have a dividend yield that as of yesterday was about 3%. So I think you see us executing to the priorities that we had articulated.

Mark H. Henninger - Vice President-Finance & Director-IR

Thanks, C.J. And, operator, I think we have time for two more questions.

Operator

Thank you. Our next question comes from the line of Vivek Arya of Bank of America. Your line is now open.

Vivek Arya - Bank of America Merrill Lynch

Thanks for taking my question. For my first one, Brian, I'm curious. There are expectations of Intel becoming successful with your 4G modems in the back half, and I'm curious. How's the longer-term visibility around sustaining growth in the business and just the timing as to when you can bring those products from foundry to your own fabs?

Brian M. Krzanich - Chief Executive Officer & Director

Sure, so let's just talk about modems. Really to stay on a leading-edge modem, you need to have a yearly cadence of modem technology. And so we have just that, a yearly cadence laid out. We had the 7260 last year, we have the 7360 this year. We have a series of modems out. We've got them built out and planned for the next several years. We haven't publicly stated when we'll bring it inside, but clearly we plan to. We'll do that when the right point of intercepting the roadmap and getting the right performance off the 14-nanometer is required. Right now, I'm more concerned about getting the leading-edge momentum going for us with the 7360 and then the follow-on in 2017 and really showing that we are a world-class modem company.

Vivek Arya - Bank of America Merrill Lynch

All right. And as my follow-up, staying on the DCG team, are you still comfortable this can be a double-digit growth business over the longer term? And I guess as part of that, what role does competition play into it with all the recent noise around SoftBank buying ARM and presumably putting more resources into it? I understand there are no near-term implications. But just longer term, how do you think about growth and competition in DCG? Thank you.

Brian M. Krzanich - Chief Executive Officer & Director

Sure, so let me try and talk about why I am so confident in growth. We can talk about competition, and then we'll see if that does not answer your question. When I think of the cloud, the cloud that we have today is really built on the backs of people. It's your Facebook data, it's your Salesforce data, it's your Twitter data. It's all data that is really across the devices that we pretty much handle day to day. The current estimates are, if you look out into 2020, that average person will generate about 1.5 gigabytes a day of data off those devices, and those are going to be all your posts and pictures and all that kind of information.

If you take a look at the average autonomous car in 2020, the estimates right now are it will throw off about 40 gigabytes a minute of data. If you take a look at the average autonomous drone doing some kind of scan, looking for somebody lost in the forest or scanning a mine, it's going to throw off about 20 gigabytes a minute. If you take something like our replay technology that is filming in virtual reality, a basketball game or a football game, it's throwing off 200 gigabytes a minute right now. And as we continue to refine the accuracy of that, that number will likely just grow. So it's that growth in data and the need to both process it at the edge and then through the data center and into the cloud, to be able to store it, to be able to apply machine learning to all of those applications. Those all tell me that the cloud is going to continue to grow.

It's going to be lumpy. These guys don't build out their data centers in a linear fashion. They build out a big chunk of overcapacity so that they can go and then sell that and have expansion space, and they don't build for a while. And so I know people worry about is it slowing down? But these trends in data that tell me no, it's not slowing down over the long term, and what you're really going to see is just the buying patterns and the build-outs of the various structures that are going up.

As far as competition, there's always going to be competition in this market. I expect it. That's okay. We think of ourselves as competition, in fact. We are built on a model that says we have to build a continuous improvement of our products such that we are replacing ourselves with a better cost-per-performance model over time. And so we know that just even if there was no competition, the competition is we've got to build a product that's better and drives replacement as well as growth. And so I look at the competition as it's welcome. It keeps us better. It's always been out there. There will always be somebody out there. But really what we have to do is build products that are so competitive that people want to replace our products with our new product. That then is one of the best models to use for making sure you stay ahead.

Vivek Arya - Bank of America Merrill Lynch

Great, thank you.

Mark H. Henninger - Vice President-Finance & Director-IR

Thanks, Vivek. Operator, can you please go ahead and introduce our first questioner – or last questioner, excuse me?

Operator

Thank you. Our last question comes from the line of David Wong of Wells Fargo. Your line is now open.

David M. Wong - Wells Fargo Securities LLC

Thanks very much. Just following up from the earlier round, can you give us some feel for your attitude to total amount of debt? You have a goal of net cash neutrality, but you have an upper limit on the total amount of debt you're willing to carry. Might you choose at some point to repatriate overseas cash to bring down debt or pay dividends and stock purchases?

Stacy J. Smith - Chief Financial Officer & Executive Vice President

Wow, so there certainly is a limit to the amount of overall debt that I feel comfortable with, but it's not something that we've articulated externally, and it will vary by the size of the company and the cash flow. To my philosophy, just generally I'm not a believer in taking on debt to do stock buybacks. You really have not seen us do that. Obviously, it's a board decision, but I'm just sharing with you my view of it. I wouldn't take on debt in order to do buybacks or to do a special dividend or anything like that.

David M. Wong - Wells Fargo Securities LLC

Great, thanks very much.