Q1 2020 Earnings Call

Company Participants

- George S. Davis, Executive Vice President and Chief Financial Officer
- Robert H. Swan, Chief Executive Officer
- Trey Campbell, Head of Investor Relations

Other Participants

- Blayne Curtis, Analyst
- Christopher Brett Danely, Analyst
- Christopher James Muse, Analyst
- John William Pitzer, Analyst
- Joseph Lawrence Moore, Analyst
- Pierre C. Ferragu, Analyst
- Ross Seymore, Analyst
- Srinivas Reddy Pajjuri, Analyst
- Stacy Aaron Rasgon, Analyst
- Timothy Michael Arcuri, Analyst
- Vivek Arya, Analyst

Presentation

Operator

Ladies and gentlemen, thank you for standing by and welcome to the First Quarter 2020 Intel Corporation Earnings Conference Call. At this time, all participants are in a listen-only mode. After the speakers' presentation, there will be a question-and-answer session. (Operator Instructions) As a reminder, today's program is being recorded.

I would now like to introduce your host for today's program, Trey Campbell, Head of Investor Relations. Please go ahead, sir.

Trey Campbell {BIO 20385325 <GO>}

Thank you, operator, and welcome everyone to Intel's first quarter earnings conference call. By now, you should have received a copy of our earnings release and the earnings presentation. If you've not received both documents, they're available on our investor website, intc.com. The earnings presentation is also available in the webcast window for those joining us online.

I'm joined today by our CEO, Bob Swan; and our CFO, George Davis. In a moment, we'll hear brief remarks from both of them, followed by Q&A. Before we begin, let me remind everyone, 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 the actual results to differ materially. 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 earnings presentation and earnings release available on intc.com include the full GAAP and non-GAAP reconciliations.

With that, let me hand it over to Bob.

Robert H. Swan {BIO 1972621 <GO>}

Thanks, Trey, and thank you, all for joining our call. We had an outstanding Q1 in the midst of incredibly challenging circumstances. We generated $19.8 billion in revenue, expanded operating margin by 10 points and delivered a $1.45 in earnings per share. We exceeded our guidance by $800 million on the top line, and $0.15 on the bottom line. Our data-centric businesses grew 34% and now represent approximately 51% of the company's revenue. And our PC-centric business grew 14%.

We'll talk about business trends later, but first, I want to thank and commend all the Intel employees and supply chain partners who have helped keep our business operating during this unprecedented challenge. I want to give special prayers to those in our factories and labs and other onsite personnel, who have role modeled the values of our company, every day and every shift. I am so incredibly proud of your effort and commitment.

I also want to thank the rest of our employees, who are largely working remotely to help support the social distancing requirements of those that need to work from our sites. Ensuring the safety and well-being of our global workforce has and will continue to be our number one priority. That's why we are investing more than $100 million in additional benefits to aid and support employees, including a special recognition award for employees that have been working on site.

Intel's purpose is to create world changing technology, that enriches the lives of every person on earth. Never before has our delivery of that purpose been more essential [ph]. Intel technology runs 95% of the world's Internet, communication and government digital infrastructure. And in a world where many of us are working remotely and socially distancing, the PCs and networking technologies delivered by Intel and our customers are providing a unifying fabric that's bringing us closer together, helping those directly struggling with the virus or caring for those who are enabling remote classrooms so that our children can continue to learn and connecting governments and businesses, so they can operate and deliver goods and services.

Around the world, Intel platforms that support telemedicine have also take on greater importance since the outbreak of COVID-19, as hospitals and healthcare workers scaled to meet the increasing demand for care. Our products and capabilities are also delivering vital computing power for medical research, robotics for assisted patient care and artificial intelligence and data analytics for public health. We recognize that our local and global communities need us to continue delivering technology to help overcome this COVID-19 challenge and we are fully focused on that task. Our world class safety standards have allowed our factories to continue to operate safely on a relatively normal basis, with greater than 90% on-time delivery. We only allow employees in our factories who are essential to the factories' operations. By design our clean rooms in factories are among the cleanest places in the world.

While most of our construction projects have remained operational, we have had to temporarily pause a few projects due to local government restrictions at a small number of our sites. We will we restart those projects in due course and we expect these interruptions to have minimal impact on our ramp and no impact on our process technologies' transition timelines.

We also realized that solving the enormous challenge of COVID-19 requires catalyzing the world's innovations in new ways. Intel is committed to accelerating access to technology that can combat the current pandemic and enable new technology and scientific discovery to better prepare society for future crises. To that end, we've pledged [ph] $50 million in a global pandemic response technology initiative to combat the Coronavirus to improve access to technology at the point of patient care to speed scientific research and to ensure access to online learning for students and teachers. We are also granting free access to our IP to all COVID-19 researchers and scientists.

At the same time, we also know that our communities need help right now. Between Intel and our foundation, we are providing $10 million towards Coronavirus relief in the communities where we have significant presence. This will aid community organizations focused on food, security, shelter, medical equipment and small business support. We also want to assist our communities' critically important health-care workers in any way possible. So we have committed more than 1 million items of personal protective equipment.

We have already started delivering masks, gloves, face shields and other gear that we've sourced from our supply chain and inventory on hand to local health authorities who are best positioned to determine the areas of greatest needs. Beyond Intel's donations, our employees inspire us every day with the many ways they are applying their skills, generous spirit and technical innovation to help people and communities across the globe, persevere through this crisis.

George will give more detail on what we're seeing and expect in the business, but first, I want to reiterate our strategy and priorities. Even as covered COVID-19 drive significant disruptions across the globe, our long-term strategy to deliver the world's best semiconductors for an increasingly data centric world is unchanged. The environment is uncertain, but our priorities are unwavering. We are focused on accelerating the growth of the company, improving our execution and continuing to thoughtfully deploy your capital.

Over the last several years, we've transformed the company and are now positioned to grow our share in the largest market opportunity in our history. We live in a world where everything increasingly looks like a computer, including our homes, our cars, our cities, our hospitals and our factories. Additionally, we have redefined Intel Inside to include much more than the CPU, as we have expanded our silicon offering to include ASICs, FPGAs, GPUs and Optane, among other capabilities. Our opportunity set is more and more Intel silicon inside more and more computers, so that we can have a larger impact on our customer's success. And our quarterly results demonstrate the benefits of that diversity.

Nowhere is growth accelerating more than in our cloud and networking businesses, where we are helping our customers transform the way they move, store and process data. Through this crisis, the world's cloud and network infrastructure has delivered massive scaling to support vital workloads for businesses and consumers. Cloud-delivered application seen as convenience is a quarter ago, such as online shopping and video collaborations have now become indispensable. We scaled our cloud and communication service provider businesses by 53% and 33% year-over-year respectively, to help our customers meet these growing needs. These two segments now drive 70% of our Data Center segment revenue.

New usages and market needs are also pushing compute resources closer to the data source or point of service delivery, giving rise to an increasingly intelligent edge. Our Edge business delivers a wide range of platforms including some innovative solutions that are helping the medical community tackle COVID-19. One example is Medical Informatics' Sickbay platform. Powered by Intel technology, this solution can turn beds into virtual ICU beds in minutes, helping protect critical health care workers, while expanding their care capacity significantly. Houston Methodist Hospital deployed Sickbay for its virtual ICU and was able to leverage it within one day to support remote monitoring of its COVID-19 patients without risking exposure to care providers.

We are also partnering closely with Medtronic and Dyson as they use Intel technologies to deliver much needed ventilators. We also continue to demonstrate significant progress in ADAS and autonomous driving. While auto vehicle production is largely stalled, Mobileye delivered another proof point, demonstrating its leadership position with a landmark first ever design win with a major Asian OEM.

Finally, we see AI as a significant growth opportunity and are embedding AI capability into everything we make. AI has the power to re-imagine how we solve problems across industries, including cutting edge healthcare diagnostics. For example, in China, Intel teamed with Lenovo and BGI Genomics to accelerate the analysis of genomic characteristics of COVID-19. Our combined work will further advance the capabilities that BGI sequencing tool to help scientists investigate transmission patterns of the virus and create better diagnostic methods. And in India, we are working with government labs, academia and industry to achieve faster and cheaper testing, accelerate drug discovery through virus genome sequencing and help architect a pandemic response platform.

We acquired Habana in the fourth quarter of last year to strengthen our AI portfolio and accelerate our efforts in a nascent, fast growing AI silicon market that we expect will grow to $25 billion by 2024. This quarter, we have largely completed the integration. We consolidated product roadmap, aligned software resources and are executing to our deal thesis. We're also now sampling Habana's first Deep Learning training processor to large CSPs.

I'll now take a few minutes to discuss how we're executing to our supply and roadmap objectives. Shortly after our January call, we started to see the impacts of COVID-19 in China force many of our ODM partners to extend Chinese New Year factory shutdowns. ODM partners have now returned to work and production is increasing every week. As I mentioned earlier, our factories remain operational and in Q1, we are able to mitigate most of the COVID-19 related supply chain disruptions and fulfill all of our customers' committed client CPU orders as expected. We remain on track to add sufficient wafer capacity this year, so that we meet market demand and restore our PC unit inventory to more normal levels.

Near term PC demand has increased due to work from home and online learning. But the second-half demand picture is more uncertain. We continue to assess how COVID-19 impacts to the economy will offset the immediate catalyst for more remote work and we'll balance wafer start plans accordingly. We have made strong progress on a wave of 10 nanometer based product introductions this year. This quarter, we announced the new Intel Atom P5900 SOC, Snow Ridge, a 10 nanometer based new addition to our portfolio of 5G capabilities. We are a leading silicon provider in 5G infrastructure and Snow Ridge expands our reach to the fullest edges of the network. With major design wins at Ericsson, Nokia and DTE, we expect to be the base station market segment leader by 2021, a year earlier than previously committed.

In the middle of this year, we'll debut our next generation mobile processor Tiger Lake. Using our second-generation 10-nanometer process, Tiger Lake will deliver a breakthrough performance and our customers have more than 50 fantastic Tiger Lake based notebook designs lined up for the holiday season. Finally, in the latter part of 2020, we continue to expect initial production shipments of our first 10 nanometer based Xeon Scalable product Ice Lake. While product development in a work from home environment is extremely challenging, we are largely on track for our 2020 product deliverables. We are always mindful of our role as stewards and thoughtful allocators of your capital. We generate significant cash flow and have an excellent balance sheet. We're committed to our dividend and we repurchased $4.2 billion in shares during the quarter.

In light of the uncertainty, we took some actions to dramatically strengthen our liquidity position that we felt were prudent. We raised $10.3 billion in debt to further underpin an already strong balance sheet and we suspended our share buyback. We think this level of conservatism is appropriate at this phase, and we intend to reinstate our buyback program as circumstances warrant. Our focus now is on investing in our products and process technology, and ensuring we have the capacity to meet our customer needs. We also continue to take a disciplined approach to our portfolio of investments, including an agreement to divest our Home Gateway Platform business. We have transformed our company to lead the data driven revolution, that's fueling our industry. Our belief is that opportunity is a resolute. COVID-19 has only reinforced how important it is for Intel and our customers to accelerate the power of data to fight the current pandemic and avert the next one.

To use Andy Grove's words, bad companies are destroyed by crisis. Good companies survive them. Great companies are improved by them. Guided by our cultural values, competitive advantages and financial strength, we will emerge from this situation even stronger.

I'll now hand the call over to George for more details on our Q1 results, our Q2 outlook and how we're actively managing the business through this challenge.

George S. Davis {BIO 3925391 <GO>}

Thanks, Bob, and good afternoon, everyone. Q1 marked a strong start to the year amid significant economic uncertainty, and the unexpectedly strong demand for both PCs and servers as work from home and learn from home dynamics played out globally. Revenue came in at $19.8 billion, up 23% year-on-year and $800 million higher than guide. Data centric revenue of $10.1 billion, up 34% year-on-year represented 51% of our total revenue, an all-time high. Strong server demand across segments and a richer mix of our Xeon devices, drove a significant portion of the upside.

Q1 PC-centric revenue was $9.8 billion, up 14% year-on-year, on strong notebook PC sales and increased supply resulting from capacity additions over the past year. Gross margin for the quarter was 62%, beating expectations due to strong flow through of higher platform revenue, partly offset by reserves associated with our memory business, and from the sale of our home gateway business. Operating margin of 38% in the quarter was up 10 points versus last year, on higher gross margins and disciplined spending controls, consistent with the environment.

Q1 EPS was $1.45, $0.15 above our guide on strong operational performance, partially offset by losses in our ICAP and trading asset portfolios, along with the effects of a slightly higher tax rate. The strength of these results show the remarkable talent and commitment of our global workforce in a difficult and rapidly evolving environment. In Q1, we generated $6.2 billion in operating cash flow, and invested $3.3 billion in CapEx, with $2.9 billion of free cash flow, up 76% year-over-year. We returned $5.6 billion to shareholders via dividends and share repurchases.

As Bob mentioned, we announced a pause in our share repurchase program as we felt it was prudent to do so in the current economic environment. This does not change our commitment to returning $20 billion in repurchases as outlined in October last year, and we plan to resume the program when market dynamic stabilize. With Q1 buybacks at $4.2 billion, we have already more than offset expected dilution associated with employee stock compensation for this year. In addition, our dividend policy remains unchanged, with $1.4 billion in dividends paid in Q1.

Let's move to segment performance in Q1. Data Center Group revenue of $7 billion was up 43% from the prior year, coming in higher than expectations with strength across our customer landscape. Year-over-year platform volumes and ASPs were up 27% and 13% respectively. While year-over-year comparisons benefited from a weak Q1 2019, revenue in the quarter came in at the second highest level ever for DCG. Revenue was up 53% in cloud, 34% in enterprise and government, and 33% for communication service providers. DCG adjacencies also delivered solid growth, with revenue up 35% year on year on strong adoption of networking solutions. Our other data centric businesses were up 19% year-over-year in Q1, despite more tangible COVID impact.

IOTG operating income declined 3%, primarily on lower revenue from industrial and retail. Mobileye revenue and operating income were up 22% and 29% respectively, driven by continued ADAS penetration and new IQ program launches, offset partially by eroding conditions in the automotive market. While Q1 marked a record for Mobileye revenue, we expect 2020 revenue growth will be lower than our prior expectations, as automobile production and volume ramp are being materially impacted by COVID-19. NSG revenue grew 46% on strong bit growth and improved pricing. Better market conditions versus last year along with cost reductions on strong factory performance resulted in a lower operating loss of $66 million. PSG revenue grew 7% year-on-year on cloud and enterprise strength, partially offset by weaker embedded and communications segments.

Operating income was up 9% on higher revenue. DCG revenue was $9.8 billion in Q1, up 14% year-over-year, driven by notebook market strength and higher modem sales. PC unit volumes were up 13% year-over-year on higher notebook demand and increased supply. Notebook demand strength is expected to continue into Q2, with more people working and learning from home due to COVID-19 related shelter in place orders. Operating margin was 43%, up 7 points year-on-year on higher revenue and lower spending, driven by the 5G smartphone modem exits, partially offset by higher unit costs associated with the ramp of 10-nanometer products.

Let's move to our second-quarter outlook. Given the environment in the global economy, the range of potential outcomes has a wider distribution than normal. Based on demand signals from our customers, we expect the strength in cloud and comms infrastructure to continue in Q2, while IOTG and Mobileye will see lower demand driven by COVID-19. As a result, we expect total revenue of $18.5 billion, with PC-centric approximately flat to slightly up year-over-year, and data-centric up approximately 25% year-over-year.

Operating margin is expected to be approximately 30%, down 1 point year-on-year on lower gross margin, largely offset by lower spending on higher revenue. Gross margins are expected to be approximately 56%, down 6 points sequentially due primarily to three reasons: pre-qualification reserves associated with the ramp of our next 10 nanometer client products, codenamed Tiger Lake; lower sequential revenue; and an accelerated ramp of 10-nanometer products including Ice Lake client CPUs and 5G SoCs. The Tiger Lake reserves are not expected to impact full year gross margin, as we expect to sell through the reserved inventory in the second half of the year. As a result, Q2 EPS is expected to be approximately $1.10 per share.

Moving to the full year, with limited visibility due to the uncertainty driven by COVID-19, we are not guiding the full year. However, I do want to spend a few minutes discussing the expected headwinds and tailwinds we are monitoring, and our response to the market dynamics. Tailwinds are most evident in the first half of the year on strong demand for mobile compute and related infrastructure, on the dynamics of sheltering in place. In particular, mobile PCs, cloud and network infrastructure for 5G remain above seasonal trends. Headwinds include the impact of a global recession on IOTGs and markets particularly, industrial and retail, lower automotive production impacting Mobileye, employing enterprise and government data center demand. We also expect the PC TAM to weaken in the second half as GDP effects outweigh the initial demand bump from COVID. Also given the volatility in the markets in Q1, losses in our ICAP and trading asset portfolios were negatively impacted EPS by $0.03. Given the uncertain environment, this remains a watch item for the remainder of the year.

In response to these market dynamics, we acted swiftly and strengthened liquidity. In addition to suspending repurchases, we issued $10.3 billion in debt in the quarter. Our total cash investment balance at quarter end was $20.8 billion. Our liquidity actions to-date are expected to impact full year EPS performance by approximately $0.12. The company has an exceptional balance sheet and strong cash flow to handle a very wide range of scenarios. We have positioned the company to support investment in technology transitions, our new products, and our customers' requirements across these scenarios. As you would expect, we are very focused on cash flow management, and believe our free cash flow generation this year will be resilient as impacts from COVID are tempered by first half demand strengths, OpEx savings initiatives, capital actions and tight working capital oversights.

To conclude, I'd like to join Bob in thanking our employees worldwide. We're working diligently in these challenging times to provide products essential to the world. With that, I'll hand it back to Trey, and we'll get your questions.

Trey Campbell {BIO 20385325 <GO>}

All right, thank you, George. Moving on now to the Q&A, as is our normal practice, we would ask each participant to ask just one question. Operator, please go ahead and introduce our first caller.

Questions And Answers

Operator

Certainly. Our first question comes from the line of John Pitzer from Credit Suisse, your question please.

Q - John William Pitzer {BIO 1541792 <GO>}

Yeah, good afternoon, guys. Congratulations on the solid results. I'm just wondering if you could give us a little bit more detail on the gross margin decline heading into the calendar second quarter? George, you kind of broke it up into three different categories.

I'd be interested on magnitude of Tiger Lake versus just lower volumes and then other 10 nanometer parts? And I guess, more importantly, how do we think about kind of normalized sort of gross margins, as you get past some of these start-up cost for a faster 10 nanometer ramp?

A - George S. Davis {BIO 3925391 <GO>}

Yeah, thanks, John. So the margin picture is really unchanged from what we've talked about in the past in terms of how we think our product roadmap is going to move products that we expect to introduce and their margin structure. And what you're seeing in Q2 is largely a timing issue and about half of the impact that you're seeing on gross margin in the quarter is from the Tiger Lake pre-PRQ reserves. Obviously, the fact that -- and that's both sequentially and year-over-year. And so, I think the way we would look at it, is pretty much, we're not seeing anything as if you take COVID out of the year, we're really not seeing anything different in our basic view of gross margin dynamics with the exception of, we're seeing stronger pull-in of demand for some of our 10-nanometer products.

I mean I think -- well, I think it's a very strong demand for Tiger Lake. And so, when you look at the impact that it's -- the Tiger Lake reserves are having on the quarter, it's about the same level of impact that we had on Ice Lake in Q1 of '19 and yet, we have about double the number of units in the -- being reserved and I think that gives you an indication of just how much our performance is improving in -- on 10 nanometer.

A - Robert H. Swan {BIO 1972621 <GO>}

So, John, I would just say relative to where we were 90 days ago, gross margins are stronger in the first quarter. They're in line with our expectations through the second quarter. And to George's point, despite the timing dynamics of pre-PRQ reserves that we take in the second quarter and recoup in the second half, the only other change is just that we feel confident in accelerating the ramp for 10 nanometer. So from our vantage point at or better than kind of how we started the year and we feel very good about gross margin performance. We're very excited about the Tiger Lake product ramping going into the second half and the 5G Snow Ridge product that we announced. So all in all, gross margin dynamics are pretty strong.

On the second part of your question, I'd go back to the commentary that George provided back at our Analyst Day in the spring, which is obviously, when we transition from a mature node to a new node, margins tend to come down. We indicated that we plan to get back on a 2 to 2.5 year cadence, which means in 2021, one will be ramping 10 nanometer even more, while we're investing in 7 nanometer, that we anticipate having in the fourth quarter of 2021. So, those dynamics of -- from a mature node to a new node, impacts the gross margins of the business, but we feel like it's -- we're well on track from the plans we laid out and feel pretty good about a dynamite first quarter and an outlook for the second quarter in line or better than what we expected.

Operator

Thank you. Our next question comes from the line of Blayne Curtis from Barclays, your question please.

Q - Blayne Curtis {BIO 15302785 <GO>}

Hey guys, thanks for taking my question. I will just follow-up John with the gross margin. And I know you're not guiding full year anymore, but when we look out at that trajectory that you had given us, just wondering if you can just kind of step us through with acceleration and actually, maybe looking back at last year, if you look at the improvement you saw of that low quarter, just kind of any kind of directional guidance of where this gross margin can go from here?

A - George S. Davis {BIO 3925391 <GO>}

Yeah, I mean, first off, I think you're going to see Blayne, that gross margin is going to improve all things being equal, just from the fact that starting in the third quarter, we'll start to see the chips that have been reserved this quarter coming out on a zero cost basis into the -- into gross margin. And again, it's really hard to think about the second half in terms of how demand is going to look compared to what we ultimately thought when we first gave guidance, which is because of the -- all the obvious issues related to COVID.

I'd just go back to -- as we look at what we guided, all the way back in May of 2019, the -- if anything, we're ramping 10 nanometer a little faster. We're seeing clear evidence of improved performance on 10 nanometer. And so, we feel good about the overall gross margin dynamics. You can see how our other cost initiatives are helping 5 points out of the 6 points impact that's being offset by effectively the OpEx percentage. So overall, I would go back and say, no real change to our fundamental outlook. But when you overlay COVID, it's -- we'll just have to see how that plays out.

Operator

Thank you. Our next question comes from the line of Vivek Arya from Bank of America, your question please.

Q - Vivek Arya {BIO 6781604 <GO>}

Thanks for taking my question. And I appreciate all the color in these uncertain times. I'm curious how you are directionally feeling about the CapEx guidance for the year? I think you had about a $17 billion number before. I understand the need to be responsive to the macro-dynamics and in preserving the balance sheet, but you upsided first half by quite a bit and you're also accelerating the move to 10 nanometers. Does that create some upward bias, or at least, protect the kind of capital spending plans that you had for the year, any puts and takes would be very helpful. Thank you.

A - Robert H. Swan {BIO 1972621 <GO>}

Yeah. Vivek, I'll start and then George, George will fill in. First, both our R&D and our capital spend for this year are directed towards the multi-year plan that we shared with you back last year. So both the product roadmap over the next several years, the capital required to support the growth that we anticipate over the medium to long term horizon, while adding capacity for the ramp of 10 nanometers as well. So coming into the year, we're very bullish about the medium and long-term outlook. And we're putting our capital to work to support that medium and long-term outlook. And that's not, that's not going to change. That being said in the near term, as we try to get a better read on what the demand signals will be for the second half, whether we're dealing with, being very disciplined on our spending levels, ensuring that wafer starts are in line with true demand signals and being very disciplined on the capital, that isn't directly related to more capacity and to our technology development, we are going to be very disciplined through this near-term horizon.

But I'd just go back to the first point, which is we're very bullish about the multi-year view, we had the largest TAM in the company's history. We got a great set of products that we're building and developing and we're going to invest to position ourselves well to capitalize on the current disruptions that we're wrestling with.

A - George S. Davis {BIO 3925391 <GO>}

Yeah, what I would add is, there is some natural things in addition to the discipline that will help us lower CapEx a little bit, it's part of why we said, we think our free cash flow is going to be pretty resilient in the year, because we've seen in some of the geographies where we have major construction projects underway. We're actually seeing that being pushed somewhat by regulatory requirements. And so we -- the way I would describe it is, we probably see six to eight weeks worth of capital pushing out of this year, but any capital that is important for our 10 nanometer, 7-nanometer and even the start of 5-nanometer is going to be spent in line with the timetables that we've already laid out.

Operator

Thank you. Our next question comes from the line of Joe Moore from Morgan Stanley, your question please.

Q - Joseph Lawrence Moore {BIO 17644779 <GO>}

Great, thank you. I wonder if you could talk about some of the changes to the server roadmap and like you de-emphasized Cooper Lake and are more focused on isolating the server, is that about confidence of the in -- 10 nanometer plus, is that just kind of describe what led to the -- that decision?

A - Robert H. Swan {BIO 1972621 <GO>}

Yeah. Thanks, Joe. Yeah. During the course of the year, we've been -- our product roadmap for servers, very focused on delivering workload, optimized platform foundation, that's scalable for the real world environments that our customers are operating in. So we've ramped -- Skylake was the fastest ramp in the Xeon's history followed by Cascade Lake. That was a very strong ramp. Next we have a Cascade Lake refresh, that is a relatively simple upgrade, easier upgrade for our customers because the architecture is very simple to the fastest growing Cascade Lake ramp and we're very focused on Ice Lake in the second half of the year or in the fourth quarter as we indicated. So as we step back and look at the market dynamics and the product roadmap, we feel like we got the right products at the right time as we ramp and scale. The high end of Cascade Lake and refresh while positioning for Ice Lake.

Q - Joseph Lawrence Moore {BIO 17644779 <GO>}

Okay that makes sense. And as you started to ramp 10 nanometer plus, is it possible to talk about the changes that you'll see versus 10 nanometer, is it better clock speed, better yields, is there a better transistor performance implicit in that transition?

A - Robert H. Swan {BIO 1972621 <GO>}

I presume you're talking about second gen for server product, the Sapphire Rapids product or -- oh, for client. Sorry. Yeah, the client -- the Tiger Lake product, we are extremely excited about. We -- as I think I mentioned in our prepared remarks, we have 50 designs that we expect to ramp in the holiday season this year, clock speed, battery life, AI incorporation into the core design, a platform offering that we think is a real differentiator for customers on -- in thin and light format. So this is going to be a great launch. We're very excited about it and to George's earlier point, the demand signals we're seeing and our confidence in both the product and the yield, is -- has a sort of point where we expect to accelerate the ramping adoption, a bit SaaS then we did coming into the year.

Operator

Thank you. Our next question comes from the line of Stacy Rasgon from Bernstein Research, your question please.

Q - Stacy Aaron Rasgon {BIO 16423886 <GO>}

Hi guys. Thanks for taking my questions. I wanted to ask first about the 10 nanometer mix exiting the year, just given what you're seeing a strong Tiger Lake demand signals and a potentially faster 10 nanometer, like, what do you think your product mix by node is going to be exiting the year? Do you think you'll be at crossover point on 10 nanometers?

A - George S. Davis {BIO 3925391 <GO>}

Stacy, this is George, hi. I don't think we'll see a crossover point this year and this is again, I'm just going to take COVID out of the equation, so thinking through. I do think we're going to see more demand on 10 nanometer this year than we thought going in. Again, I think Ice Lake demand was strong, it's going to be strong in the first half. We're seeing our 5G SoCs on 10 nanometer getting stronger demand as the market there just get stronger and stronger on the comm side. But Tiger Lake is really I think going to be the driver for us and being above our expectations for all the reasons that Bob just covered and -- but it won't be enough, it won't be enough to cause a crossover.

Operator

Thank you. Our next question comes from the line of Ross Seymore from Deutsche Bank, your question please.

Q - Ross Seymore {BIO 20902787 <GO>}

Hi guys, thanks. So let me ask a question. Wanted to go to the data center group, but you had the color commentary about the enterprise and government being weaker in the second half and I don't think that surprises anybody, but I wanted to see what sort of color you're getting in the other 70% of that segment, on the cloud and comm side? And specifically you had worried earlier this year that we had entered a digestion period. So I wanted to see if your views have changed on that? And then on the comm service provider side, how much of that actually acts like the enterprise and government, versus the side that benefits from the 5G ramp? Any pluses and minuses there would be helpful as well. Thank you.

A - Robert H. Swan {BIO 1972621 <GO>}

Yeah. Thanks, Ross. First on the cloud side, as you indicated, we came into the year off a very strong second half of 2019 and our expectations were that Q1 would continue that strength. But then, the cloud service providers would go through their normal digestion stage, if you will. And that was kind of what we indicated back in January. First quarter as George flagged, demand was even stronger for the CSPs. In our raised outlook for Q2, we expect that demand for the cloud folks too, the strong demand to continue. And possibly even going into the second half of the year. That's a TBD, but the trends are relatively encouraging, the demand signals there are very high. The product that's been pulled as XCC products, so ASPs, which you saw in our results were very strong. So purchasing is extending beyond what we thought a few months ago, and that drove Q1 upside, that drove Q2 upside and we think it will be relatively strong kind of going into Q3, that's a TBD.

On the comm side, a fantastic growth in the first quarter. Our expectations are as we go through the course of the year, it will stay relatively strong as we continue to gain share in that segment. And as we've expanded the 5G SOC, expanded our TAM within that sector, now with the product that we just qualified a few, a few weeks back. So we expect share gains, the infrastructure in -- share gains to continue -- infrastructure in 5G to continue, if not go faster and we're relatively well positioned in the -- with the key players of Nokia, Ericsson and DTE going into the second half of the year. So we feel good about the comm segment as well. And as you flagged, the ones that we're proud -- that we're most anxious about is just enterprise and government, and what kind of demands those will see in the second half. So the first two are as good, if not stronger enterprise and government, a big -- a bit of an unknown for us at this stage.

Operator

Thank you. Our next question comes from the line of Pierre Ferragu from New Street Research, your question please.

Q - Pierre C. Ferragu {BIO 15753665 <GO>}

Hey, thank you for taking my question. I'd like to get back to your performance in PC in the first quarter. So you're up 14% year-on-year. I was wondering, a couple of things. The first one is, how much is that really stronger demand and that's just about it? And how much is that is more, you catching up on capacity and being better able to serve the market and catching -- but catching up maybe on demand, you couldn't meet in the two, three previous quarters? And then what's your early view on market share? Are you starting to regain share in PCs and if not, when do you see that happening this year?

A - George S. Davis {BIO 3925391 <GO>}

Hey Pierre, it's George. I think what we saw is clearly some impact relative to our expectations from the work at home, learn at home dynamics, but we had expected a strong quarter in our initial forecast, which really reflected the dynamics we're talking about. We had customers who have been short of demand for a number of quarters, who are seeing a chance to finally build some -- a little bit of inventory, which gave us a seasonally strong first quarter relative to anything we might see historically. But we saw our notebook volumes up over 20% in the quarter. And I would say that, that's more than just the pent-up demand and that's at a time when some of the OEMs were really struggling in the early part of the quarter with their supply chains, which is why there is some parts in their channel that's all opened up now.

So we think that actually one of the good signs is though, even that's opened up, we're still seeing very strong demand coming in on the PC side. So -- and we had expected solid PC in the first half, but I would say, it's with COVID, it's been even stronger and heavily weighted towards the notebooks global (inaudible).

A - Robert H. Swan {BIO 1972621 <GO>}

And the only thing I would add is in our fab network, in the supply chain, was able to coming out of last year, not only able to deal with the backlog coming into the year, but also meet the higher demand signals that George flagged in the latter part of the -- at the latter part of March.

A - George S. Davis {BIO 3925391 <GO>}

Yeah. I should have mentioned that, it's really heroic work both at the supply chain level, we have a fantastic supply chain group, but also our manufacturing team is keeping the factories up and running, delivering 90% on time commit in a quarter like this, it's really remarkable.

Operator

Thank you. Our next question comes from the line of CJ Muse from Evercore, your question please.

Q - Christopher James Muse {BIO 18608702 <GO>}

Yeah, good afternoon. Thank you for taking the question. I realized that you removed your guidance for the full year. But if I look at your results and your guide for Q2, it would suggest data centric tracking may be down 2% half-on-half in the second half and PC down 14%. I'm just curious, is that directionally how you're seeing things or I guess given the positive trends on notebooks and the weakness on the enterprise and government side, perhaps, it's a bit more muted and we'd love to hear your thoughts on that.

A - George S. Davis {BIO 3925391 <GO>}

Yeah, we're -- I'm not going to be able to give you a full year guide by pieces, but I appreciate the question. I think that -- may be talking a little bit, CJ, headwinds and tailwinds which we referred to on the call, clearly cloud is a tailwind and cloud and mobile computing are tailwind for the first half for sure. I think cloud continues to be -- will probably be helpful throughout the year. But at some point, we're going to see the impact of the recession, start to impact demand on PCs. So we're -- that's certainly a headwind, that is a reasonable expectation for the second half of the year.

We're already seeing the impact of the recession on IOTG particularly in industrial and retail. We're seeing in automotive, Mobileye had a record quarter in Q1, but I think the full year is going to be certainly weaker than we had expected coming into the year. Now, not nearly as weak as automotive overall because they continue to grow. They're in a part of the automotive market that is growing substantially. And they have the leadership position in ADAS and so, it will be more subtle of an impact, but still an impact nonetheless.

And then, as Bob said, on the data center side, enterprise and governments appear to have been very strong in the first half. And so, we would expect some digestion. How those things all play up and what percentages are played up, CJ, I really can't say. But those are the things that we're watching to see how the year is going to play out.

Operator

Thank you. Our next question comes from the line of Srini Pajjuri from SMBC Nikko, your question please.

Q - Srinivas Reddy Pajjuri

Thank you. George,I want to go back to the gross margins. I think you did a great job giving us color about, about half of the impact from Tiger Lake. I'm just wondering the remaining half, is that because of reserves, which is going to reverse in the second half? Or is this something more structural or mix related, that's going to persist for the next few quarters? I would love to hear some color on that. Thank you.

A - George S. Davis {BIO 3925391 <GO>}

Well, I think the thing that it's structural as we're going to see more 10 nanometer demand in the year, than we had forecasted at the beginning of the year. And that will have a little bit of a dampening on margins, but not materially different from what we had seen coming into the year. The temporary impact is really the reserve action which will reverse. It is about half of the year-over-year effect. And so I would say the other impact again is, if you look year-over-year, we're just seeing a much larger uptake of Ice Lake and 5G SOCs year-over-year. But much of that was expected. I would say, both Ice Lake and the 5G SOCs are a little bit stronger than we would have thought coming into the year, and, which is consistent with just the demand activity that we're seeing in mobility and the infrastructure around that.

A - Robert H. Swan {BIO 1972621 <GO>}

Yeah, and just, we can end of the year, with an outlook of 59% gross margin for the year, and I would just say, through the first 90 days, we're much better. To the next 90 days, we're better or in line and the dynamics of that pre-PRQ reserves are no impact on the full year. Therefore, net-net, to the first six months of the year, we feel just as good about our gross margin performance and even better about our ability to ramp 10 nanometer. So we're feeling very good about how the first half of the year is playing out relative to where we were 90 days ago, across demand signals and gross margin performance.

Operator

Thank you. Our next question comes from the line of Timothy Arcuri from UBS, your question please.

Q - Timothy Michael Arcuri {BIO 3824613 <GO>}

Thanks a lot. I'm just wondering if you can talk about channel inventory? There is a -- customers in a lot of your end market seemed to be a little concerned about supply disruptions and they -- and selling seems to be a little bit above sell through, sell through seems to be weakening a little bit. So can you talk about the potential for some inventory correction later this year and sort of how you track that? Thanks.

A - George S. Davis {BIO 3925391 <GO>}

We're -- obviously, we're very focused on understanding that. I would say, the -- any kind of dislocation that we're looking at right now is more a function of just the supply chain challenges that some of the OEMs had, particularly in the first half of the first quarter. But we've been watching that pretty closely because we want to make sure that this kind of build up at our customer level makes its way through to the end customer. And we're seeing customers telling us that their end customer demand continues to be very strong. And their order profile reflects that they're going to clear their existing revenue.

Now when that plays out, not sure it's part of why we struggle to understand how that second half is going to play out, but we feel good about the demand signals we're seeing now and we understand the movements of our products in the system from the dynamics that we saw in the first quarter.

A - Trey Campbell {BIO 20385325 <GO>}

Thanks, Tim. Operator, I think we have time for one more question, then we'll turn the call back over to Bob to wrap things up.

Operator

Certainly. Our final question then comes from Chris Danely from Citi, your question please.

Q - Christopher Brett Danely {BIO 3509857 <GO>}

Hey, guys. Thanks for squeezing me in. Can you just run down the supply/demand sort of balance throughout the server, desktop and notebook lines? I guess, are you on track for the high-single digit unit increase and output? And then did the shortages anywhere get any worse during Q1 or it sounds like they are abating in certain areas? Any color there would be great.

A - Robert H. Swan {BIO 1972621 <GO>}

Yeah. On, as we indicated at the beginning of the year, our intention -- what we did add capacity last year and our intention this year was to add another mid-20% growth in capacity, which would generate real strong output. And we are on track, maybe even a little bit better than, than what we said at the time. Obviously in the first quarter, demand was also great, it was greater for -- across the board, server and notebook in particular. And we were able to keep pace with the accelerating demand as the quarter closed.

So we're in pretty good shape in terms of the promise we've made to our customers and that is that, we will not -- we will put the capacity in place. So we are not a constraint on their growth. And we're in very good shape despite all the challenges. That being said by, we haven't replenished inventory levels. So meaning mix dynamics across the board is, we're still not quite there yet, but we're in line a little bit better than we had hoped. We delivered more demand and we got to continue to build the inventory levels back, so we can deal with a variation by SKU mix.

A - George S. Davis {BIO 3925391 <GO>}

Thanks, Chris, oh -- So, yes. So look, thanks everybody for joining us today. I'd just kind of want to wrap with, to reiterate our purpose and that is to create world changing technology that enriches the lives of every person on earth. And that's never been more important than it is during this time. Our strategy is resolute and our business is built to withstand challenges. We have a very diversified portfolio of businesses, that are highly leveraged to major technology inflections, like cloud, 5G, intelligent, and autonomous edge computing, and artificial intelligence. We generate significant and durable free cash flows. And our team of 110,000 people is operating as one team to enable our customers' success. So guided by our cultural values, our competitive advantages and our financial strength, we're confident that we will emerge from this situation even stronger. Thanks again for joining us. We hope you all stay safe as we work together to overcome this global crisis. And we look forward to hopefully seeing you in person over the near term. Thanks again for joining us.

A - Trey Campbell {BIO 20385325 <GO>}

Thanks, Bob. And thank you all for joining us today. Operator, could you please go ahead and wrap up the call?

Operator

Certainly. Thank you, ladies and gentlemen for your participation in today's conference. This does conclude the program. You may now disconnect. Good day.