

Q1 2019 Earnings Call

Company Participants

- Devinder Kumar, Chief Financial Officer, Treasurer & Senior Vice President
- Laura Graves, Corporate Vice President, Investor Relations
- Lisa T. Su, Director, President & Chief Executive Officer

Other Participants

- Aaron Rakers, Analyst
- Blayne Curtis, Analyst
- David M. Wong, Analyst
- Hans Mosesmann, Analyst
- Joseph Moore, Analyst
- Kevin Edward Cassidy, Analyst
- Mark Lipacis, Analyst
- Matthew D. Ramsay, Analyst
- Mitch Steves, Analyst
- Stacy Aaron Rasgon, Analyst
- Toshiya Hari, Analyst
- Vivek Arya, Analyst

MANAGEMENT DISCUSSION SECTION

Operator

Greetings, and welcome to the Advanced Micro Devices' First Quarter 2019 Earnings Conference Call. At this time, all participants are in a listen-only mode. A question-and-answer session will follow the formal presentation. As a reminder, this conference is being recorded.

It is now my pleasure to introduce your host, Laura Graves. Please go ahead.

Laura Graves {BIO 15126067 <GO>}

Thank you, and welcome to AMD's First Quarter 2019 Conference Call. By now, you should have had the opportunity to review a copy of our earnings release and slides. If you have not reviewed these documents, they can be found on the Investor Relations page of AMD's website, amd.com.

Participants on today's conference call are Dr. Lisa Su, our President and Chief Executive Officer; and Devinder Kumar, our Senior Vice President, Chief Financial Officer and Treasurer. This is a live call and will be replayed via webcast on our website.

I would like to highlight some important dates for you. In celebration of AMD's 50th anniversary on May 1, 2019, Dr. Lisa Su and members of AMD's executive leadership team will host a panel discussion reflecting on 50 years of innovation by AMD. This will be held at the Nasdaq MarketSite in New York City. Dr. Lisa Su, President and Chief Executive Officer, will also be delivering a keynote address at COMPUTEX in Taiwan on Monday, May 27.

Ruth Cotter, Senior Vice President of Worldwide Marketing, HR and Investor Relations, will present at the Bank of America Global Technology Conference on Tuesday, June 4, and our 2019 second quarter quiet time will begin at the close of business on Friday, June 14, 2019.

Today's discussion contains forward-looking statements based on the environment as we currently see it. Those statements are based on current beliefs, assumptions and expectations, speak only as of this current date and as such, involve risks and uncertainties that could cause actual results to differ materially from our current expectations.

We will refer primarily to non-GAAP financial measures during this call except for revenue, and segment operational results, which are on a GAAP basis. The non-GAAP financial measures referenced on this call are reconciled to their most directly comparable GAAP financial measure in today's press release which is posted on our website.

Please refer to the cautionary statements in our press release for more information. You will also find detailed discussions about our risk factors in our filings with the SEC and in particular, AMD's Annual Report on Form 10-K for the fiscal year ended December 29, 2018.

Now with that, I would like to hand the call over to Lisa. Lisa?

Lisa T. Su {BIO 5791223 <GO>}

Thank you, Laura, and good afternoon to all those listening in today. We had a solid first quarter. Revenue was in line with our expectations at \$1.27 billion, down 23% year-over-year. Ryzen and EPYC processor and datacenter GPU revenue more than doubled year-over-year helping expand gross margin by 5 percentage points and partially offsetting graphics channel softness and lower Semi-Custom revenue.

Looking at our Computing and Graphics segment, revenue declined year-over-year as higher client processor sales were offset by lower graphic sales to the channel. Client processor sales increased by a strong double-digit percentage from the year-ago period as unit shipments increased significantly and our new products drove a higher client ASP. As a result, we believe we gained unit market share by for the sixth straight quarter.

In the desktop channel, demand for our highest end Ryzen 7 and Ryzen 5 CPUs was strong with sales increasing sequentially and outperforming seasonality. Ryzen mobile processor adoption continues to accelerate. Acer, ASUS, Dell, HP, Lenovo and other OEMs have launched more than a dozen new Ryzen mobile notebooks so far in 2019, helping us deliver our fifth straight quarter of year-over-year mobile processor growth.

Our customers are on track to increase the number of Ryzen notebook models by more than 50% from 2018. The majority of these new systems are planned to launch in the second quarter in advance of the seasonally-stronger second half of the year.

In Graphics, revenue decreased year-over-year driven largely by lower channel sales, partially offset by a significant increase in datacenter GPU sales.

Radeon Vega GPU shipments grew by a strong double-digit percentage both year-over-year and sequentially based on increased adoption across OEM, gaming, and datacenter customers. Apple introduced two new iMac systems featuring upgraded Radeon Pro Vega GPUs that deliver up to 80% faster graphics performance than the previous generation.

We believe we made good progress improving channel inventory levels. Sell through accelerated sequentially, driven by sales of both our mainstream Radeon RX GPUs and new high-end Radeon VII gaming GPUs. We are well positioned to grow GPU revenue in the second quarter and through the second half of the year as we expect to introduce our first 7-nanometer Navi gaming GPUs in the third quarter.

We delivered another quarter of strong datacenter GPU sales based on increased adoption across large customers. Our progress was highlighted by Google's announcement that they selected high performance Radeon GPUs and AMD software development tools to power their upcoming Stadia game streaming platform. Stadia is a great example of how we are expanding the depth and breadth of our datacenter customer engagements. We are seeing growing customer interest in our differentiated platforms for game streaming, machine learning and HPC workloads that combine our high performance GPUs with open source software tools.

Turning to our Enterprise, Embedded and Semi-Custom segment, revenue decreased from a year ago as expected due to lower Semi-Custom revenue as we enter the seventh year of the current game console cycle. Our Semi-Custom business model continues to play an important role in our long-term growth as our strong IP portfolio enables the industry's biggest brands to create differentiated solutions.

The latest example is Sony. We are honored that Sony has selected a custom AMD SoC based on our Zen 2 CPU and Navi GPU architectures to power its next generation PlayStation console. Our server CPU revenue grew significantly from the year-ago period as EPYC processor adoption across cloud, HPC and enterprise customers continued to grow.

Overall, in the datacenter, our CPU and GPU sales accounted for a mid-teens percentage of quarterly revenue. Our work with cloud leader Amazon continues to expand as they

rolled out AMD-based offerings to additional regions and launched three new EPYC processor-powered EC2 instance families including the first T3 series instance. Growing (07:43) HPC and regional cloud service provider deployments resulted in EPYC processor channel sales increasing sequentially.

In the Enterprise, we added dozens of new customers across the aerospace, health care, automotive and telecom industries based on the superior performance of EPYC processors in big data and general purpose virtualized workloads.

Turning to our next generation Rome processor, we made excellent progress in the quarter, achieving key production milestones with our largest OEM and cloud customers. We are very excited about the performance of Rome, which is on track to deliver four times the floating point performance and double the compute performance per socket compared to our current generation EPYC processors. We are on track to begin Rome production shipments in the second quarter, to support a third quarter launch.

In summary, I am pleased with our first quarter financial results, based on the strong execution engine we have built across the company. Tomorrow is an important day in AMD's history as we celebrate our 50th anniversary. This is a significant milestone for any company, but especially significant for a technology company. 2019 is arguably the most important year in our history, as the \$75 billion market for our high performance computing and graphics product has never been larger. And our product portfolio has never been stronger. We are right where we plan to be with our multiyear roadmap including our upcoming 7-nanometer Ryzen, Radeon and EPYC processors that can drive our next wave of revenue growth and share gains. We remain confident in our ability to continue delivering on our ambitious leadership roadmap for the PC, gaming and datacenter markets.

Now I'd like to turn the call over to Devinder to provide some additional color on our first quarter financial performance. Devinder?

Devinder Kumar {BIO 17763436 <GO>}

Thank you, Lisa, and good afternoon, everyone. The first quarter of 2019 was a good start to the new year. Revenue was \$1.27 billion, and gross margin of 41% was up almost 5 points from the prior year. This was the eighth consecutive quarter of year-over-year gross margin expansion, driven by the ramp of our strong portfolio of high performance products.

Quarterly revenue was down 23% from a year ago. Strong sales of Ryzen and EPYC processors and datacenter GPUs were more than offset by lower graphics channel sales, and lower Semi-Custom revenue.

Gross margin was 41%, up 470 basis points from a year ago, primarily driven by Ryzen and EPYC processor sales as well as datacenter GPU sales. Operating expenses grew 12% year-over-year to \$498 million primarily driven by go-to-market activities and investments in our product roadmap.

Operating income was \$84 million, down from \$152 million a year ago, primarily due to lower revenue and higher operating expenses, partially offset by a \$60 million licensing gain from the joint venture with THATIC. Operating margin was 7%, down from 9% last year. Net income was \$62 million compared to \$121 million a year ago, and diluted earnings per share was \$0.06 per share compared to \$0.11 per share a year ago.

Now turning to the business segment results, Computing and Graphics segment revenue was \$831 million, down 26% year-over-year as strong client processor and datacenter GPU sales were more than offset by lower graphics channel sales.

Ryzen products continued to ramp driven by strong growth across both desktop and mobile processors. In Graphics, sales were down year-over-year, due to lower graphics channel sales and negligible blockchain-related revenue in the quarter partially offset by strong Radeon datacenter GPU sales. Computing and Graphics segment operating income was \$16 million compared to \$138 million a year ago. The decrease was due primarily to lower revenue and higher OpEx.

In the Enterprise, Embedded and Semi-Custom segment, revenue was \$441 million, down 17% from the prior year. Server revenue growth was more than offset by anticipated lower Semi-Custom revenue.

EESC segment operating profit was \$68 million compared to \$14 million a year ago. The improvement was largely due to an IP licensing gain of \$60 million associated with the joint venture with THATIC.

Turning to the balance sheet, our cash, cash equivalents and marketable securities total \$1.2 billion at the end of the quarter. During the quarter, we received \$448 million of cash related to Mubadala's warrant exercise. We used \$64 million of cash to fully extinguish the 2019 term debt, and \$100 million of cash to retire other term debt. The principal debt balance as of the end of the quarter was \$1.4 billion as compared to \$1.7 billion a year ago, and we have no long-term debt maturities until 2022.

Free cash flow was negative \$275 million in the quarter primarily due to higher inventory and the timing of collections. We expect to be free cash flow positive for the full year.

Inventory was \$955 million, up \$110 million sequentially primarily due to an increase in inventory of new products in anticipation of higher revenue. Adjusted EBITDA was \$130 million compared to \$196 million a year ago, due to lower quarterly earnings and on a trailing 12 month basis, adjusted EBITDA was \$737 million. Gross leverage at the end of the quarter was 1.8 times.

Turning to the outlook for the second quarter of 2019, we expect revenue to be approximately \$1.52 billion, plus or minus \$50 million, an increase of approximately 19% sequentially and a decrease of approximately 13% year-over-year. Sequentially, the increase is expected to be driven by growth across all businesses. The year-over-year decrease is expected to be primarily driven by lower graphics channels space - sales (15:00), negligible blockchain related GPU revenue and lower Semi-Custom revenue.

In addition, for Q2 2019, we expect non-GAAP gross margin to be approximately 41%, non-GAAP operating expenses to be approximately \$510 million as we invest in our new products and upcoming product launches. Non-GAAP interest expense, taxes and other to be approximately \$25 million.

For the full year 2019, AMD continues to expect high single-digit percentage revenue growth and non-GAAP gross margin to be greater than 41%.

In closing, the first quarter was a good start to the year. We remain focused on executing our plans for the remainder of the year and look forward to unveiling a strong portfolio of next generation products to drive financial growth and customer momentum throughout 2019.

With that, I'll turn it back to Laura for the question-and-answer session. Laura?

Laura Graves {BIO 15126067 <GO>}

Thank you, Devinder. Operator, we're ready for our first call.

Q&A

Operator

Thank you. One moment, please, while we pull for questions. Our first question today is coming from Matt Ramsay from Cowen. Your line is now live.

Q - Matthew D. Ramsay {BIO 17978411 <GO>}

Good afternoon. Thank you very much. Congratulations, Lisa, to your new team on the 50th anniversary. I guess the first question from me is it was encouraging to see you guys reiterate the full year growth expectation. Obviously, one of your large server competitors had a bit of a hiccup on some of the outlook and talked about maybe a bit of a softer server market for the full year. Maybe you could give an update on what you guys are seeing for the server macro (17:14) environment and the confidence that you might have in your products ramping. Thank you.

A - Lisa T. Su {BIO 5791223 <GO>}

Sure, Matt. Thank you for the question. So yes, as it relates to how the year's developing, it's developing largely as we expected when we started the year. So relative to our Q2 guidance, we are guiding up 19% sequentially and every business is growing. That's coming from - if you look across the businesses, our client business is growing due to new platforms that are launching. Our Graphics business, the channel inventory has improved since we started the year. And we have our server business, which is really starting some early shipments of Rome in the second quarter going into the second half of the year.

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As it relates to the full year guidance and how we will get it, again, it's largely as we expected, as we're laying out the year. There certainly is some discussion with our customers about some inventory in the datacenter especially here in the first half. When we developed our plan, our datacenter business was always more second half weighted and continues to be so because much of that is dependent on platforms that are launching around our Rome product portfolio.

So we're going to continue to watch the datacenter overall environment but at this point, we're focused on our products and our customers continue to have a very strong pull. There's a lot of interest in Rome. We're doing well on our qualifications. And so we feel good about how that's developing.

Q - Matthew D. Ramsay {BIO 17978411 <GO>}

Got it. Thank you. And as a follow-up, you mentioned the 19% sequential guidance for Q2, it seems like a bit of a transitional quarter for the company with a lot of things going on towards product launches that will happen to feed the back half of the year. So maybe you could talk a little bit more granularly about the drivers of Q2 just given it's a bit of a transition for a whole new portfolio rolling out and if there's any kind of color on contributions from older or newer products in the second quarter guidance, that would be helpful. Thank you.

A - Lisa T. Su {BIO 5791223 <GO>}

Sure, Matt. So, yeah, as we look at Q2, it is a bit of a transition in the product portfolio. It's an important quarter for us as we are preparing to launch our 7-nanometer products. In terms of the overall business, as I stated earlier, each of the businesses is growing for different reasons. I think starting with server, again, it's the greatest percentage of growth and it really is the start of some shipments of Rome. We expect that Rome will launch here in the third quarter and there's some preparations that need to be done for that. As we look at the Graphics business, again, the channel inventory situation has improved and so that we expect that the channel will be up here in the second quarter and then into the second half, as we launch Navi. And in the client business, we have a large number of platforms with our OEM customers that are launching here in the second quarter around our second generation Ryzen mobile processors and we're also in preparations for our third generation Ryzen desktop as well.

A - Laura Graves {BIO 15126067 <GO>}

Thank you, Matt. Operator, next question, please.

Operator

Certainly. Our next question is coming from Aaron Rakers from Wells Fargo. Your line is now live.

Q - Aaron Rakers {BIO 6649630 <GO>}

Yeah. Thanks for taking the question. I'm just, I guess, first question, and I do have a quick follow-up is, when you kind of lay out Rome and the expectation of a ramp going forward,

can you just remind us of how you currently see the setup with regard to market share opportunities or market share gains that you would expect? And where do you think you fell out this last quarter in terms of market share in the overall server space?

A - Lisa T. Su {BIO 5791223 <GO>}

Sure, Aaron, thanks for the question. So look, as we looked at the server market, we know very well that the datacenter market takes time to ramp with any new product. And so that's the way we have sort of built our plans. What we have previously stated is that from, let's call it the beginning of this year, we'd expect that over the next four to six quarters, we would continue to ramp our server market share with the goal of getting to double digit percentage share.

As it relates to the Q1 quarter, again, we'll have to wait to see how the numbers come out. The datacenter business for us on the CPU side behaved as expected in Q1 but we did see some product mix shift. So Q4 was a large quarter for us in the cloud business for our EPYC processors. And Q1 the mix shift did more to enterprise and channel. And from that, the ASPs were higher, the units were lower and so again, largely as we would have expected.

Q - Aaron Rakers {BIO 6649630 <GO>}

Okay. And then as a quick follow-up, congratulations on the announcement with Sony. I'm just curious, I think last quarter you had suggested that you expected that Semi-Custom business to decline by 20% plus this year. Assuming that that's still the case, number one. Number two, how do we now start to think about the growth profile of that looking into next year? Thank you.

A - Lisa T. Su {BIO 5791223 <GO>}

Yes. Sure. So, yes, we are very pleased with our partnership and expanding our partnership with Sony on their next generation consoles. As we see the Semi-Custom business at this point, we still believe that it's going to be down substantially in 2019. Let's call it approximately 20% plus. And then as we go into 2020, without talking about any specific customer, we believe that Semi-Custom will return to a growth business for us in 2020 and beyond.

Q - Aaron Rakers {BIO 6649630 <GO>}

Okay. Thank you.

A - Laura Graves {BIO 15126067 <GO>}

Thank you, Aaron.

Operator

Thank you. Our next question is coming from Toshiya Hari from Goldman Sachs. Your line is now live.

Q - Toshiya Hari {BIO 6770302 <GO>}

Good afternoon, and thank you for taking the question. Lisa, we continue to hear about the CPU shortage, which is obviously primarily caused by your competitor. Curious, are you seeing any impact on your business in the near term? And more importantly, as we go into the second half and they ramp capacity, are you concerned at all that that could disrupt your business whether it be market share swings or pricing pressure? And I have a follow-up.

A - Lisa T. Su {BIO 5791223 <GO>}

Sure. So as it relates to CPU shortages in the market, look, we see a little bit of that. I would say there are pockets of shortage mostly at the low end of the market frankly. So from our standpoint, I don't believe it's a huge contributor to our business. As we look at the PC business both in the first half and the second half of the year, we believe that the PC business can be a growth business for us. From a market environment standpoint, we believe the market is not too bad. We call it flat to slightly down.

When we look at our product portfolio in the notebook space, with our second generation Ryzen platforms, we believe we have much stronger platforms that are ramping through this year. And then in the desktop space, we believe we'll be very competitive as we launch the third generation of Ryzen desktop. So I view the PC business as an important growth driver for us in 2019 and we see it as a good market for us.

Q - Toshiya Hari {BIO 6770302 <GO>}

Thank you. And then as a follow-up, in your prepared remarks you mentioned that datacenter CPUs and GPUs accounted for about mid-teens percentage of your revenue in the quarter. Like last quarter, can you give us a rough split between the two? And related to that, I was hoping you could help us size the game streaming opportunity long-term. Obviously, you're involved with Google today. How does that business with them evolve over the next 12 to 18 months and what's your opportunity elsewhere in terms of broadening your customer base? Thank you.

A - Lisa T. Su {BIO 5791223 <GO>}

Sure. So as we stated, the datacenter CPU and GPU business was about mid-teens percentage of revenue for us. Both businesses were down as expected in Q1 and much of that was the strength of the Q4 quarter especially around the cloud. We mentioned in Q4 that the split between CPUs and GPUs was close, so they were close. As we look longer term, for datacenter GPUs and your question about the cloud streaming opportunity, we're very pleased with our partnership with Google. It's the result of several years of effort where we were optimizing both hardware and software together. And so we think it's an important vertical for us. We are working with other customers in the cloud streaming area as well. So again I think it's an interesting and important market over the next couple of years.

We also have a number of other workloads that we feel good about as it relates to datacenter GPU including HPC. Especially when you combine our CPU and GPU portfolio together, we think HPC is a great workload for us and as well as machine learning. And

we're working in machine learning, with a couple of leading cloud customers to again optimize our software to their needs.

So again, the datacenter GPU market will continue to be a important driver for us over the next couple of years.

Q - Toshiya Hari {BIO 6770302 <GO>}

Thank you.

Operator

Thank you. Our next question is coming from Stacy Rasgon from Bernstein Research. Your line is now live.

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

Hi, guys. Thanks for taking my question. I had a question on your gross margin guide. I'm a little confused why it's flat sequentially into Q2 on a pretty meaningful revenue lift. I mean, you talked about all businesses growing and you mentioned a number, but you didn't (27:29) mention Semi-Custom. I mean is this just a matter of mix with Semi-Custom driving a lot of the growth or is there something else going around on about intra-business mix or pricing or something like what's going on with the gross margins?

A - Lisa T. Su {BIO 5791223 <GO>}

Yeah, Stacy, let me start and I'll let Devinder comment. I should have mentioned Semi-Custom in that list as well. So Semi-Custom is going through a seasonal build. So although it will be down substantially year-over-year, it's still a seasonal build for us as we go from Q2 - from Q1 into Q2. Devinder, maybe you want to comment as well?

A - Devinder Kumar {BIO 17763436 <GO>}

Yeah, so, Stacy...

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

Can (28:05) you rank order maybe the growth by business?

A - Lisa T. Su {BIO 5791223 <GO>}

Can I rank order the growth by business? That's probably a bit more granular than I would like to get but I think it's fair to say that all businesses have to grow a decent amount to get to 19% sequential growth.

A - Devinder Kumar {BIO 17763436 <GO>}

That's right, Lisa. So fundamentally, Stacy, the product mix in the quarter that is driving the flat gross margin. I have the 41% guide and it's an improvement of 4 points year-on-year. Now as you know very well, we have businesses that are higher than corporate average

gross margin and lower than corporate average and the mix of the businesses with Semi-Custom that we just talked about lower than corporate average is driving the 41% guide for Q2.

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

Okay.

A - Lisa T. Su {BIO 5791223 <GO>}

And then you would also - I'm sorry, Stacy. I would just add you would also expect (28:53) Graphics is also a bit lower than corporate average on the consumer side.

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

Okay. So it's fair to say that a good amount of growth is coming from Graphics and Semi-Custom as well as the other stuff?

A - Lisa T. Su {BIO 5791223 <GO>}

Yeah, it's really across all of the businesses. Yeah.

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

Okay. Thank you. For my follow-up I had a question on OpEx. You're guiding 29% for the year and you're at \$510 million in Q2 and, obviously, high single-digits growth for the full revenue. So if I had revenue up (29:18) 8% for the full year, that would imply OpEx in Q3 and Q4 of \$510 million flat to Q2 levels. Do you think that's realistic? Does OpEx actually stay flat for the rest of the year from Q2 levels or does it need to go higher? If it goes higher, does that imply that the revenue growth embedded in your guide for the year has to be above 8%?

A - Devinder Kumar {BIO 17763436 <GO>}

I think, Stacy, the way you want to look at it is the first part of 2019 we do have incremental R&D and go-to-market activities in the first quarter and even in the second. As you know, we are preparing for a strong series of significant 7-nanometer product launches this year and also share gains as we get to the back half of the year. And that's obviously driving the OpEx. All in all for the year, we are comfortable with the 29% for the year of overall revenue from an OpEx standpoint. And as you have seen us in the past, we do have a way of modulating the OpEx if needed. But right now, we are investing in the roadmaps, we're investing in product launches and the go-to-market activities and very focused to make sure that we are well positioned in the first half going into the second half where we see the revenue lift compared to the first half of 2019.

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

Does that imply OpEx - you see OpEx going up from current levels for the rest of the year then or does it go down or does it stay flat?

A - Devinder Kumar {BIO 17763436 <GO>}

\$510 million is the guide for Q2 and 29% for the year is the way I would do the model.

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

Got it. Thank you, guys. Appreciate it.

A - Laura Graves {BIO 15126067 <GO>}

Thanks Stacy. Next question, please.

Operator

Our next question is coming from David Wong from Nomura Instinet. Your line is now live.

Q - David M. Wong {BIO 6109216 <GO>}

Thanks very much. Devinder, can you give us some idea of what gross margins are currently running at for the client and datacenter processors and what direction these gross margins are moving in?

A - Devinder Kumar {BIO 17763436 <GO>}

The client and datacenter businesses are higher than corporate average. And the Semi-Custom business and Graphics as we just said on the last question are lower than corporate average especially on the Graphics consumer side. The datacenter GPU side obviously is better.

Q - David M. Wong {BIO 6109216 <GO>}

Great. And are gross margins rising for your microprocessor businesses at the moment?

A - Devinder Kumar {BIO 17763436 <GO>}

I think it's early in the year, the second quarter. We are getting the second quarter at (31:29) 41% guide. And our guidance for the year is greater than 41% on an annual basis is what we have said so far.

Q - David M. Wong {BIO 6109216 <GO>}

Okay. Great. And, Lisa, my last question, in 2020, do you expect meaningful Semi-Custom revenues outside the game console space? And if so, what types of applications will these Semi-Custom chips be used in?

A - Lisa T. Su {BIO 5791223 <GO>}

Yes, David. So as it relates to the Semi-Custom business as we go out in time, we do expect additional applications other than consoles but consoles are a large piece of the business. And so you would expect that they would continue to be a large piece of the business.

Q - David M. Wong {BIO 6109216 <GO>}

Great. Thanks.

Operator

Thank you. Our next question today is coming from Mitch Steves from RBC Capital Markets. Your line is now live.

Q - Mitch Steves {BIO 19155169 <GO>}

Just one quick historical one. I've got two but the first one on the historical side, for March of 2018, did you guys provide a rough breakout of how much your revenue was server-related?

A - Lisa T. Su {BIO 5791223 <GO>}

No.

A - Devinder Kumar {BIO 17763436 <GO>}

No.

A - Lisa T. Su {BIO 5791223 <GO>}

No, we wouldn't have done that.

A - Devinder Kumar {BIO 17763436 <GO>}

No, we haven't done that. Not that specific. I think server is - if you're referring to the CPU side is within the EESC segment.

Q - Mitch Steves {BIO 19155169 <GO>}

Okay. And then - yes. And then if I look at the second half of the year, you guys kind of talked about like from around 41%, 42% kind of gross margin, rough level. So is it safe to assume that we should see a pretty big step function in September quarter on the gross margin or is that - I guess, is that incorrect or is that aggressive?

A - Devinder Kumar {BIO 17763436 <GO>}

I think yeah, we (33:06) look at it from a viewpoint of the product. As I said, we are shipping, like Lisa said, Rome in preparation of our launch in Q3. We have a couple of other new products that will start shipping in Q3, and we'll see how the margin comes out, when we come in and talk about Q3 about 90 days from now.

Q - Mitch Steves {BIO 19155169 <GO>}

Got it. Thank you.

Operator

Thank you. Our next question is coming from Joe Moore from Morgan Stanley. Your line is now live.

Q - Joseph Moore {BIO 17644779 <GO>}

Great. Thank you. I wonder if you could talk about gross margins in the console segment. Obviously, that's been pretty low historically. You also have customers funding the R&D. But as you look to the next generation of consoles, do you see opportunity to improve the gross margin in that space?

A - Lisa T. Su {BIO 5791223 <GO>}

Yeah, Joe. I think it's a bit early to talk about margins for the next generation. As you stated, the gross margins of the console business are below corporate average. The operating margins are quite good, because the customers are paying the engineering expenses for it. But I think the gross margins are below corporate average. We would expect, though, and I think you would expect this, as the company continues to grow, the percentage of the company that is Semi-Custom is lower than it has historically been.

Q - Joseph Moore {BIO 17644779 <GO>}

Yeah, that makes sense. And then, if you look at GPU datacenter opportunities, the gross margin there, how does that compare to, say, your - the discrete graphics portion of your business and how does it compare to corporate average? Things like that.

A - Lisa T. Su {BIO 5791223 <GO>}

Yeah, the GPU datacenter business would be above corporate average and above our consumer graphics business.

Q - Joseph Moore {BIO 17644779 <GO>}

Great. Thank you.

A - Laura Graves {BIO 15126067 <GO>}

Thank you, Joe.

Operator

Thank you. Our next...

A - Laura Graves {BIO 15126067 <GO>}

Next question (34:56).

Operator

Certainly. Our next question is coming from Mark Lipacis from Jefferies. Your line is now live.

FINAL

Bloomberg Transcript

Q - Mark Lipacis {BIO 2380059 <GO>}

Hi. Thanks for taking my question. I had a couple of questions on the server strategy longer term. Can you help us understand ultimately what percentage of the workloads in the cloud do you expect to target? And that's the first part of the question.

The second part of the question is, I was hoping you could provide some color on the customization strategy. I think Intel might argue that they are embedding IP blocks for their customers. Is that something that you do or you think about doing? Or to what extent does your customization strategy fall under your Semi-Custom model?

And I was wondering are your customers on the server side asking you for like an APU kind of a product, where the microprocessor and graphics processor capability is integrated together. Thank you.

A - Lisa T. Su {BIO 5791223 <GO>}

Yeah, absolutely, Mark. So, look, when we think about our server strategy and maybe our - let me generalize it to our datacenter strategy overall. It is a multiyear, multigenerational roadmap. In terms of the workloads that we plan to address, we are - in addition to the workload that we do very, very well on like big data, data analytics, virtualization, high-performance computing, cloud workloads, I think we do quite well with general purpose workloads too as we move generations. So as we look at, for example, the Rome generation, the second generation of EPYC, we would expect to address well 80%-plus of the workloads.

As it relates to customization for server CPUs, there are varying degrees of customization that customers want, especially as you go through a number of the different cloud workloads that are out there. There are specific requirements that are there.

We're very comfortable doing that. I think the customers have been deeply engaged with us since the first generation of EPYC. There is both software customization, as well as some hardware customization that we go through. So we feel very comfortable with our ability to address that across the cloud and the Enterprise businesses.

And then, as we go forward, I think we are also very excited about what we can do when we put our CPU and GPU portfolio together, and really do system-level optimization for the datacenter. So we view that as a early opportunity for us, but one where there is a lot of opportunity to help customers really optimize our very high performance computing applications.

Q - Mark Lipacis {BIO 2380059 <GO>}

Thank you .

Operator

Thank you. Our next question today is coming from Vivek Arya from Bank of America Merrill Lynch. Your line is now live.

Q - Vivek Arya {BIO 6781604 <GO>}

Thanks for taking my question and congratulations on the strong results and the pipeline. Lisa, two questions from me as well. First, you have Naples now and Rome server shipping soon. Intel has Cascade Lake with Optane. What are you hearing from customers on a pricing versus feature comparison? And where I'm going with that is how well is AMD prepared if your competitor decides to perhaps become a little more aggressive on the pricing side? At what point does pricing matter and at what point do your feature list - does your feature list matter more?

A - Lisa T. Su {BIO 5791223 <GO>}

Yes. So Vivek, look, we understand that it's a very competitive market out there. It's always been very competitive and we are prepared for it to get even more competitive. When you look at our roadmap, I think we feel very comfortable with sort of our positioning. And the way I think about it when it comes to the datacenter market, price is only one factor. And it's probably not the most important factor when people are choosing their next generation products. The most important factor is really total cost of ownership. And the advantages that we have with our chiplet architecture and our 7-nanometer sort of process capabilities really have a great sort of power performance benefit. So we are, as you say, we're prepared for a competitive environment, but we also feel that our product from a performance standpoint and a positioning standpoint we'll be positioned quite well in the marketplace.

Q - Vivek Arya {BIO 6781604 <GO>}

Got it. And as a follow-up, Lisa, you mentioned your goal of getting to double digit market shares in servers over the next four to six quarters. I assume that will require a greater contribution from enterprise customers. And if that is right, what push backs are you seeing from them now? Is it just a matter of time that you increase your enterprise traction (40:09)? In general, what do you need to do anything extra to attract enterprise customers? Thank you.

A - Lisa T. Su {BIO 5791223 <GO>}

Yeah, no it's a great point. We certainly have deep engagements with both cloud and the OEMs. On the enterprise customers, we sell through our OEM partners. The pushback that we get - I don't know if I would call it pushback. I would just say that enterprise tends to move a bit more slowly than cloud. There are longer qualification cycles because there are qualification cycles on both the OEM side as well as the end customer side. We are continuing to build out our direct sales force as it relates to facing the Fortune 1000 customers and CIOs in that area. And I believe we will make progress in enterprise certainly as we go forward from the Naples generation into Rome we'll have more platform coverage with our OEMs. And I think there will be more familiarity with our architecture, as well as more software optimized to our architecture. So yes, we're very committed to the enterprise market and expect that we will make progress with time.

FINAL

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Q - Vivek Arya {BIO 6781604 <GO>}

Thank you.

A - Laura Graves {BIO 15126067 <GO>}

Thank you Vivek.

Operator

Thank you. Our next question today is coming from Blayne Curtis from Barclays. Your line is now live.

Q - Blayne Curtis {BIO 15302785 <GO>}

Thanks for taking my question. Lisa, just curious on the server product you mentioned enterprise was a bigger contributor in Q1, I'm just trying to think about the life cycle of EPYC 1, enterprise takes longer to qual. So I'm just kind of curious where you are in terms of roll out of that product. Obviously, Rome's going to come in at the end of the year, I'm just kind of curious how you see the tail (41:50) on EPYC 1 throughout the year.

A - Lisa T. Su {BIO 5791223 <GO>}

Yeah, so, Blayne, I think as I stated a little earlier, I think the datacenter business does tend to move slowly. So we would expect that there will be a good amount of time where we will have both Naples and Rome in market at the same point in time. And that just depends on qualification cycles, platform needs and some platforms are being refreshed right away, some platforms are going to take a little bit longer to be refreshed. And so from my standpoint, I think that Naples will continue to be important for us in 2019 even as we ramp Rome with our launch in the second half of the year.

Q - Blayne Curtis {BIO 15302785 <GO>}

Got you. And then if I could just ask on the datacenter GPU product you had. The Google ramp I think it started in Q4, just kind of curious your pipeline for that product and how you think about the slope of that business and the lumpiness of - given that large customer.

A - Lisa T. Su {BIO 5791223 <GO>}

Yeah, so we do expect the datacenter GPU business to be a bit lumpy. We do have several sort of large customers that are ramping product with us. And there will be some ebb and flow as we go on a quarterly basis.

But on an annual basis, I think 2019 will certainly be - we expect it to be significantly up from 2018. And the pipeline is good. So when we look at the pipeline, as I mentioned, cloud streaming is a good workload for us. Google is one customer, but we're working with other customers as well. And we also see HPC and machine learning as additional workloads that will be good for us in that business.

Q - Blayne Curtis {BIO 15302785 <GO>}

Got you. Thanks.

A - Laura Graves {BIO 15126067 <GO>}

Operator, we have time for two more questions, please.

Operator

Certainly. Our next question is coming from Hans Mosesmann from Rosenblatt Securities. Your line is now live.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Hey. Thanks. Lisa, regarding Navi, if you can comment on it, what is the positioning of that particular product relative to your current 7-nanometer GPU? And regarding Navi, can you tell us if it's going to include ray-tracing?

A - Lisa T. Su {BIO 5791223 <GO>}

Yes. So, Hans, we are excited about Navi. Navi is a new architecture for us in gaming. It has a lot of new features across the Navi architecture. Things are progressing well. We expect it to launch in the third quarter.

From a positioning standpoint, I probably won't go through it in great detail right now other than to stay that it is 7-nanometer Navi, but it will be positioned below where, for example, our Radeon VII is positioned today from a price point standpoint.

And then in terms of ray-tracing, again, we will talk more about our overall Navi roadmap as we get closer to the launch.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Okay. Great. Thank you.

Operator

Thank you. Our final question today is coming from Kevin Cassidy from Stifel. Your line is now live.

Q - Kevin Edward Cassidy {BIO 15420688 <GO>}

Thanks for taking my question, and congratulations. As you're introducing the new generations of Ryzen, should we assume that ASPs will continue to go up or are some of these purpose-built for lower price points?

A - Lisa T. Su {BIO 5791223 <GO>}

Yes, Kevin. So as we look at the new generations of Ryzen, our goal is certainly to improve the mix of the product. And so we think as we improve the performance of the product that we can improve that mix.

Now the actual mix will vary of course depending on a number of things as we go through quarter-by-quarter, but certainly as – our goal is to continue to improve our penetration at the higher end of the PC processors.

Q - Kevin Edward Cassidy {BIO 15420688 <GO>}

Okay. Great. Thank you.

A - Laura Graves {BIO 15126067 <GO>}

Thank you, Kevin.

A - Devinder Kumar {BIO 17763436 <GO>}

Thank you.

A - Laura Graves {BIO 15126067 <GO>}

Thank you, everyone, for joining us today. This concludes our call. We appreciate your time and attention to this earnings call and certainly your support of our company. Have a nice evening.

Operator

Thank you. That does conclude today's teleconference. You may disconnect your line at this time, and have a wonderful day. We thank you for your participation today.

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