Morgan Stanley Technology, Media & Telecom Conference

Company Participants

- David M. O'Hara, CFO of Cloud and Enterprise, Office, Dynamics, Artificial Intelligence and Research

Other Participants

- Keith Weiss, Equity Analyst, Morgan Stanley, Research Division
- Unidentified Participant, Analyst, Unknown

Presentation

Keith Weiss {BIO 6993337 <GO>}

Thank you, everyone, for joining us today for the introduction. And thank you to Dave O'Hara from Microsoft for joining us. Before we get to the good stuff, please note that all important disclosures, including personal holdings disclosures and Morgan Stanley disclosures, here on the Morgan Stanley public website at www.morganstanley.com/researchdisclosures or at the registration desk.

And from Microsoft, a safe harbor before we begin. Microsoft may make some forward-looking statements during this presentation. Be sure to refer to their SEC filings for risk factors relating to their business. And that's true whether you're here in person or listening on the web.

All right, that's out of the way. So Dave, thank you for joining us. Maybe for the benefit of everyone in the room, can you give us a little bit of an introduction about sort of who you are, your role at Microsoft, what you have purview over and a little bit about your sort of history and tenure at Microsoft?

David M. O'Hara

Sure, thanks for having me. CFO for the commercial business in Microsoft. And commercial business, people are very familiar with what that is. My role is working with the field in terms of field finance and how we expand our field footprint as well as Scott Guthrie on the C&AI side and Harry Shum on the AI side.

Questions And Answers

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. And maybe just before we like get into the product divisions themselves, one of the things Dave talked about was the fundamentals behind our research. We do a lot of primary work, a lot of survey work. And one of the things that got me excited about Microsoft and was part of that $1 trillion is in their CIO surveys over the past couple of years, really starting three years ago, you saw a real turn in the way that CIOs are seeing Microsoft. It went from legacy tech to something that people are increasingly looking to invest in and they're looking to increase the wallet share of Microsoft in their IT budgets. What do you think happened over that past 3 to four years that's really changed that perception among CIOs that now Microsoft is a vendor you want to push more dollars to?

A - David M. O'Hara

Well one is I think they understand that we have a big focus on the enterprise and that we do all the things that enterprises are looking for. We provide great security. We're a trusted provider. I think we have a breadth of software that they're interested in. And so they look at Microsoft as being more of a one-stop shop. One of the things we hear from a lot of customers is, "I don't want all these one-off solutions. I just want a person I can go to." And I think that Microsoft represents the closest they're going to get to that. And so we see that. I think that we really started seeing a pickup in our cloud when we came out with our hybrid strategy and thought it was -- we have all these customers that have big Microsoft footprints plus they also want to move to the cloud. But they want to do it on their time frame and they want to do it in a way that works for them. And how do we best help them do that? And that's when we came out with a hybrid strategy that you can be on-prem, you can be cloud, you can be a mix of both and you can do it on your timeline. And I think that just really resonated with a lot of customers.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. Then that hybrid strategy is pretty differentiated from the other big cloud vendors, like an Amazon or a Google in the cloud...

A - David M. O'Hara

Yes, I think it's something that Microsoft uniquely can do and others can't make the same offer. There are companies out there that are partnering together and trying to come up with sort of a mocked-up hybrid strategy. But I feel like we literally have a lot of the on-prem footprint and a lot of the cloud footprint. And we can just help them make a smoother transition. And so that is uniquely a Microsoft value proposition.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. Before we dive into the hybrid side of the equation, I want to start with Azure. Azure is probably the part of the portfolio I get the most questions about. And the fundamental question that people are trying to understand is the durability of that growth in Azure. How long could these really impressive growth rates continue? Now we're beginning to use really big scales in terms of how big that business is. Can you talk to us about how you think about the growth trajectory of Azure? And what are some of the key customer drivers at this point? What's driving more and more customer demand to that platform?

A - David M. O'Hara

Sure. And if you start at the meta level, every decision we make generally starts out with how do we think about total adjustable market? And every year, our total addressable market for the cloud gets bigger. I remember when we first started doing this, it was -- we had a certain number. And each year, we just keep growing that number. And from my perspective, the total addressable cloud market is going to continue to grow for the foreseeable future. And so I look at the opportunity and say every year, it gets a little bigger. And every year, we seem to be able to expand our footprint. And so we feel good about the -- having a lot of runway in the cloud for starters. The one -- the messages that are really resonating, at first, it was we heard a lot of customers say, "Should I go to the cloud? Should I not go to the cloud?" They're well past that. Every customer needs a cloud strategy. Then they're saying, "How should I think about the cloud? And what workload should I move over?" And they're doing some basic things like storage and compute and just trying to get aligned on how they think about the cloud. And now they're much deeper. We see them much more interested in things like security. With our EMS offering, we see them interested in. How do we think about AI? How do I think about IoT? They're just much more advanced. And I think before, it's safe to say that we were really selling and encouraging folks to move to the cloud. And now in some ways, they're pulling us. They have a lot of innovative ideas. And even when you see a lot of the disruption in the industry, I think some of the newer companies are coming in and disrupting some of the old players and older players. And so we see them coming to us and saying, "Help me develop a cloud strategy. Help me get modern and current." And so I think it's sort of -- I don't know if I can go as far as to say limitless. But there is a lot of runway. One of the things about the cloud, if you're selling an offering that is sold per seat, there is effectively a limit on the number of people in the world. And so there's a sort of, for lack of a better word, a cap on sort of a per seat offering. But on a cloud offering, there's literally no cap. You can take any workload you want and move it to the cloud. And so I think it's just really hard for anybody to say how big it's going to get, other than I'm confident it's going to get bigger.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. Can we dig in a little bit in terms of what workloads are running in Azure right now? Any kind of visibility you could give us into? Is it net new workloads that people are building up natively onto Azure? Are people moving on-premise workloads into the public cloud environment and into the Azure environment? Any kind of visibility you could give us to what people are doing in that Azure environment?

A - David M. O'Hara

Yes. We would divide it into a couple of huge categories. One is just migration, migration of existing workloads over to the cloud. And we see a lot of people doing that, again storage, compute but even some of the heavier biz apps moving over into the cloud. And so a lot of the stuff that they're doing on-prem now, they can run more efficiently in the cloud and get more scale. And so we do see a lot of the migration work going on. We also see a lot of innovation work on both migration and innovation. Databases are a big thing. So our Cosmos DB offering, our SQL database offering, those are pretty popular. So it's both. A lot of times, people just want to migrate, get going and then start innovating from there. But increasingly, we're seeing folks saying, "Wait a minute, if I'm going to move all this stuff to the cloud, that's a great opportunity for me to optimize. And so let's optimize and migrate at the same time." Then they can innovate from there. So it's both. Those are the 2 major categories that we see.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. And when a customer is going to migrate an existing workload into the public cloud environment, they're using compute, they're using storage, do you still see the up-sell of the additional higher-value solutions around that? Or do those workloads tend to cap out at just compute and storage?

A - David M. O'Hara

So we definitely see a lot of up-sell. And one of the things that we're finding, even in the sales environment as we transform our field, is you need to be able to create that 3-year arc, that story that says, "Here's how you ought to think about moving to the cloud as a company." And they really want to know, "Give me some sense of what the end game is." So it's not just moving workloads over and trying to save money. It's like, "What are we really trying to accomplish? And where are we really trying to get?" And so we work with them on, "Here are different ways you could transform your business and here's how that could work in the cloud and here's how it could all be connected and here's how you would get better data and here's how you could then use that data to serve customers better." And so you need to have that holistic story and they need to know where they're going. Then I think once they get a better sense of where they're going, it's easier for them to say, "Okay, now I get it. Now I have a roadmap and we can start moving that stuff over." And there is an end state in mind. So for us, it's really important to be able to tell that story and paint that vision of what the end state could be. Then as I said, I think it's sort of interesting that we -- before, it was a lot of us doing educating and selling. And now oftentimes, it's customers pulling us forward and saying, "Hi. how about this? How about if I try that?" And so they're just being much more innovative, I think so.

Q - Keith Weiss {BIO 6993337 <GO>}

So it just looks like a lot of the guys on my side of the fence, when we're thinking about that sort of where we are in the transition of public cloud. And maybe oversimplifying it, because we look a lot at sort of percentage of workloads that run in different environments. What percentage are people running on on-premise of environments? And what percentage are people running on sort of public cloud environments? And we judge growth by kind of net new workload growth plus the migration to the public cloud. But it sounds like there's like a third vector we've got to be thinking about of when those workloads get there, there's additional monetization of those workloads in the public cloud of sort of -- that have migrated. There's a functionality vector that we should be thinking about.

A - David M. O'Hara

Yes, I think even if you were -- if you're going to pick a category, IoT, for example, I think IoT is still very undefined and how we think about the Edge and how we think about all the devices out there that could benefit from being connected to the cloud is almost literally limitless. I mean, any of the devices in this room are all connected to the cloud already. But even just devices, if you walk out into any retail outlet, I think all of those are potential cloud opportunities whereas before, they were just devices. And all of that, in addition to compute, that can get into data analysis and how you think about better serving customers. And so it's just really hard to put a finger on how big it's going to get because I think there are untapped opportunities out there that people haven't even thought of yet. So I do think there are additional monetization opportunities that just haven't been identified or aren't being monetized yet.

Q - Keith Weiss {BIO 6993337 <GO>}

Right. You talked a little bit about some of higher-value services, like Cosmos DB on the data side. You talked about security. Where are we with the sort of AI, machine learning functionalities? Are those actually being utilized in any big way today? Are they being sort of woven into sort of new application development or older applications? Or is it really too early for that to get into real mainstream adoption?

A - David M. O'Hara

Yes. When I think about something like AI, from my perspective, there's a few different ways you could monetize that. One is you build AI into all the existing apps that you have and it makes them better. And people are feeling like they're getting new additional value for the apps that they're already consuming and paying you for. And so I think there is a piece of that. And we'll see that with a lot of the integration between the products that we have today. Two is a lot of companies just want to understand like, "What is possible, what can I do?" And so either through our own MCS or through a partner organization, you basically get into a consultant contract, where you're helping them drive the innovation and build out the business. And so I think there's a big services component because it isn't just the tech, it's also the thinking around the tech and how do you evolve your business. And so I think for partners and for us, there's a big services component. And that's going to help drive some revenue. Then there's just folks who want to consume stuff on a sort of a per byte basis. And we have services available, where they can just pay as you go and consume what you want. And that can be a monetization strategy as well. So I think it's all of those. And all of those just add up to an expanding TAM.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. I think the biggest investor concern when it comes to sort of Azure and in the public cloud in general is the risk of commoditization, that you have these big vendors putting a lot of capital to work. Are they going to be able to differentiate their solutions over time? Is there going to be a differentiation that Microsoft brings to the market in their Infrastructure as a Service and Platform as a Service that can sustain that price? Or are we going to have a race to the bottom in terms of cheap compute, cheap storage but just run in the cloud-based environment? How do you think about differentiation for Infrastructure as a Service and Platform as a Service and maintaining those price points for Microsoft longer term?

A - David M. O'Hara

Yes, I think for us as a company, it's our obligation to keep delivering value on top of the core storage and compute. And I think we're doing a good job of that. I think AI is one of the examples. IoT is another example. But even EMS and security, we continue to expand our security offerings. All of that is both on top of the cloud dynamics. People are always asking about how do we think about our dynamic strategy. Office is a great SaaS offering. And so if we -- I would agree that you ought to be in more than just the storage and compute business. You have to be adding value on top of that. And PaaS typically has better margins than IaaS and the SaaS stuff has much better margins and is really sticky. And so I think it's incumbent on us to make sure that we're driving that value-added service on top. And I think as long as we're doing that, people will pay us for it.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. Then just one last one on Azure. In terms of sort of the gross margin profile, overall, cloud gross margins have been trending up really nicely over the past couple of years. Most recent quarter is ahead of our expectations. Amy was here two years ago. And she talked about sort of Azure gross margin scaling in line with what we've seen from like AWS at similar scale. Does that still hold true? Do you still think you could sort of align to sort of what we've seen with AWS over time?

A - David M. O'Hara

Yes, I think it still holds true that we've already said that we'll have -- we believe we could have the same gross margin profile as AWS did at that point in time. The reality is both businesses are getting really big. And I think that you reach a point where you sort of hit the (chronicle) gross margin number. We don't think we're there yet. We still think we have some room for improvement. But I do think that eventually, you get to a point to where you say, "Gross margins are going to start to at least moderate. The gross margin growth is going to start to moderate." But we still feel like we have some good runway on that.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. Shifting back to the hybrid discussion, how well do you think sort of that hybrid positioning can help you guys differentiate against an AWS and a Google? And are you seeing that differentiation actually win you guys deals today?

A - David M. O'Hara

We certainly see the differentiation and we see the hybrid message landing. I think for us, the primary benefit for customers -- there's 2 primary benefits for customers. One is it's cheaper that way because they don't have to pay for stuff twice. And so if we have the hybrid offering and they're paying on-prem and they want to move to the cloud, they can move their Windows Server licenses to the cloud and they're covered. And so it's certainly a cheaper option for them. Two is I think that from their timeline perspective, it gives them a lot more flexibility. And one of the things that companies said to us all along is, "Hi. we made this big investment in the current infrastructure and we don't want to just throw that out and move. How do we think about that?" And so I think being able to allow them to continue to run in the current infrastructure and get a cloud, be able to expand in the cloud is what they really like about it. But it's on their time frame, not our time frame. And that's the good news for them.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. And I think that flexibility has been expressed -- or at least Satya and Amy talked to us a lot about it in terms of the Azure hybrid use benefit, which is a contracting methodology for customers. Can you talk to us about exactly what that is, how it sort of gives that flexibility to the customer? And any sort of financial impacts we should be thinking about as investors looking at the results on how sort of the rise of those hybrid use benefits show up on the income statement?

A - David M. O'Hara

Sure. So basically, hybrid use benefit says if you have licensed Windows Server or SQL Server and if you're current on your contract, then you can run those licenses in the cloud. And if they're going run those licenses in AWS, for example, they're going to -- AWS, they're going to pay us for additional license to run those in an AWS environment. What we said is, "Look, if you've already paid Microsoft, then you could run them in Azure for no additional cost." And so that's why it's cheaper. That shows up in our income statement largely on the on-prem revenue. The question we keep getting asked a lot is how we should be think about Windows Server growth and Windows Server on-prem growth? And I think there's a perception that for a while, that that was going to start decreasing materially. And we have obviously seen decent growth in our on-prem number. And part of it is because the hybrid offering, just the way we structured, will show up as on-prem revenue when, in fact, it's tied to a cloud offering. But we try to stay pretty pure in terms of how we account for it. And so that stays on the on-prem side for the most part.

Q - Keith Weiss {BIO 6993337 <GO>}

So if the customer eventually shifts SQL Server licenses into the cloud, does it still stay on-prem? Or do you have to shift that revenue?

A - David M. O'Hara

Right now, the way that we're accounting for those is on-prem revenue. And I think that's how we would continue to account for them. I'm looking at my IR person to make sure I don't script that answer. But yes, that would be on-prem revenue.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. And you mentioned the concerns that people have around Server & Tools. Part of it comes from sort of an expectation that sort of on-premise server shipments are going to be slowing down, go negative. And Windows Server is tied to server shipments, right? How concerned should we be about sort of declining server shipments into on-premise environments negatively impacting the broader Server & Tools business for Microsoft?

A - David M. O'Hara

Well our Server & Tools business is very healthy as people have seen in some of the numbers. We reported a good, solid Q2 and we feel good about the outlook for the Intelligent Cloud business. And so we're -- we still feel like the demand is there. We're still confident that customers are going to continue to purchase those products. The way that we look at it, going back to the gross margin question for a second, it's obviously in our former world, gross margin was very high simply because we were shipping CDs and the cost of that is lower than building a data center, for example. But we also feel like that's much more than offset by the expanding cloud opportunity. And so the way that we look at it, yes, gross margin percentage is important. But really what we also think is at least equally important is the gross margin dollars that are driven by the business. Because as we continue to expand in the cloud, the gross margin opportunity from an absolute dollar perspective is much more material. And so we feel like the gross margin shifts will settle out and we'll end up with good dollar gross margin growth as well as continue to drive up the percentage of gross margin in the cloud.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. So really asking the question a little bit of a different way, like what has been the drivers? Like you mentioned hybrid cloud. But hybrid use advantages, you guys started talking about it a lot last year. That business has been growing mid-single digits for quite some time. What's been the core driver of that on-premise Server & Tools business?

A - David M. O'Hara

Yes. Well I think the core driver for on-prem has been the continued build-out of data centers and how people think about using Windows Server in the data centers. And one of the things we said all along is that we were continuing to do our own geographic footprint build-out of data centers. But others have as well. And so Windows Server is a pretty popular product. And as people license that for the data centers, you know that's going to continue to drive the growth of the business. The question we get is how long will that continue? And I don't see the cloud's role getting any smaller anytime soon. And I do think there is some efficiencies to be gained. But I generally think growth will continue.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. Can you talk a little bit about Azure Stack and sort of what's the problem for the customer that Azure Stack is looking to solve in particular? And what kind of traction have you guys seen in Azure Stack? I think it really first rolled out last year. What kind of traction have we seen with that solution thus far?

A - David M. O'Hara

Yes, Azure Stack really is intended for customers that, one, maybe they want a little bit more control and so they want Azure Stack in their environment, where they have more control over it. And it has some access to the cloud. But it's sort of intermittent. The other one is that there are -- the example -- there are examples where folks just don't always connected. So for example, if you take a cruise ship that maybe connected or not connected, you still need to be able to run that environment, whether you're connected to the cloud or not. And so what we're trying to do is give people the comfort that they will both be in control of their environment and they'll be able to continue to run their environment, whether they're connected or not. And so for some industries, that means a lot. They need to be able to have those features. And so it's early days for Azure Stack. We've had good customer demand. If anything, the one thing we -- the one thing customers like is they have choice. So they don't feel like they're forced into one decision or another. And so Azure Stack is just a choice that they can make. A lot of times, they'll look at it and say, "You know what, I'm comfortable going to the cloud anyhow. And let's just see that." But they like the fact that they have that option if they want it.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. Is this something that we should think about in terms of impacting the financials from what we see yet? Or is it still too early days?

A - David M. O'Hara

I think it's too early to really see any material impact. We just look at it as part of our broader cloud offering. Plus the important thing is to be able to give customers that choice across a range of options for the cloud. And Azure Stack is just one of those choices.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. In terms of just looking at sort of the financials, you have the end of support for SQL Server 2008 and Windows Server 2008. Did those end of supports have a significant impact on -- do you expect another significant impact on the financials?

A - David M. O'Hara

So I wouldn't say there's a significant impact. I just think that for us, the key is to make that a smooth transition for customers. And so we're working with all of the customers on that now. And I don't expect to see material financial growth from it. But we do want to make sure that as they transition, that, that's a good experience for them and they continue the path. So I think it's more about just taking care of existing customers.

Q - Keith Weiss {BIO 6993337 <GO>}

Okay. So it just sounds like -- and you guys talk about a percentage of commercial revenue coming from recurring sources. It bounces around between like 85% and 90%. Since so much is on recurring. So much is tied up in these over-time contracts that these individual product life cycles just aren't going to have as much of an impact on the financials. Is that...

A - David M. O'Hara

Yes, I think that's right. I mean, our recurring number, the last one was pretty close to 90%, plus or minus. And so it's just continuing to migrate customers as they move through their cloud transition. So I just think it's more of the recurring revenue than any of net new.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. I want to talk about the competitive environment in hybrid. We touched on this a little bit. But it seems like there's been a lot of motion in that over the past year as I think more and more people are starting to realize that these hybrid architectures are going to be the mainstay for most large enterprises. So you've seen responses to sort of Microsoft's strong positioning. AWS came out with their Outposts offering. Is that anything that you're seeing in the marketplace today? Or is it too early to see Outposts?

A - David M. O'Hara

Well we see it in some sales environments. But I would say it's early days for that as well. I think the benefit for us on the hybrid offer is we have big share and a big presence in on-prem already. And so as we come out with a new offering, a lot of times, they're cloud versions of the old offerings. And so the transition is just much smoother, it's not something anybody needs to ramp up or get going on. And so for us, having that existing footprint as well as the new footprint and having them, in many cases, near each other is super helpful because it's just an easier experience for the customers. Then we come in and add on all the new stuff and so that's a growth opportunity for us. And I think some of the other cloud vendors just don't have that existing footprint. And so they're trying to come out with offerings that, in some way, mimic or mirror that. But we feel like that -- those are our customers already and they're using our stuff already and so we can make that a better experience for them.

Q - Keith Weiss {BIO 6993337 <GO>}

But I guess, one could argue that the AWS relationship with VMware is trying to do that. They've got VMware and your on-premise environments already, something you're comfortable with. Now you could run VMware in a public cloud environment on AWS. So you have that kind of a familiar interface, a familiar solution portfolio just running in a public cloud environment. Is that more of a credible threat for the hybrid cloud storage from Microsoft?

A - David M. O'Hara

Well I think AWS is a very -- obviously a very formidable competitor. And we have a lot of respect for AWS. And that's exactly what that's intended to do. I just think it's still 2 companies, we're 1.

Q - Keith Weiss {BIO 6993337 <GO>}

Okay. So 2 companies that are looking to become 1, IBM plus Red Hat. So a similar -- at least in terms of sort of how they're positioning that acquisition to investors, IBM bought Red Hat, they think it's going to sort of improve their hybrid cloud strategy. As you guys compete with Red Hat a lot on the operating system side of the equation, there's a lot of different areas that you compete with IBM, do you think that's really going to change the competitive dynamic for you, seeing that 2 of those vendors get together?

A - David M. O'Hara

Well we -- a few years ago, we really started developing a much better relationship with Red Hat. And right now, half of our VMs are Linux. And so we feel like we do have a very open source presence. And a lot of customers again want a mixed environment. They don't -- they want both open source and more of an existing vendor mix. So we want to continue our relationship with Red Hat. We think it's been very beneficial. And I think we're confident that we can continue to make that work for customers. I think it's in our interest, I think it's in Red Hat and IBM's interest to continue to work closely together. And so I see that continuing.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. I want to switch back to broader cloud gross margins again. One of the ways that we think about sort of cloud gross margins is kind of there's a two-step function that we do in our model of we have this view over how much CapEx investment is in sort of expanding the footprint, expanding that global footprint now for cloud (investing). How much is spent on filling up the data centers? Then within that, there's a utilization function of how effectively are you utilizing that CapEx within the data center? Is that a fair kind of framework to think about the cloud gross margin story?

A - David M. O'Hara

Yes, I think that's a fair framework. And we did, a point in time, a couple of years ago, when we were getting a lot more questions about cloud gross margin, we said, "Hi. we were playing catch-up. We got started in the game a little late. We had to expand our geographic footprint in a pretty accelerated way." We went and did that. There's a lot of money that goes into that land and data centers and networking and all the other things that go into building out a data center. We do feel like we have good geographic presence now. We feel like we have the best global presence as a cloud provider. And so I think that's when we started seeing some of the growth in our cloud gross margins is when we were focused on driving efficiencies. Rather than driving a geographic expansion, we were more focused on, "Okay, we've built out a lot of the cloud. Now how can we get more efficient at it?" And we started more of VMs per server and we're doing all kinds of good stuff that was really driving improvement in gross margins. At the same time, it's a very competitive market. And AWS and Google are both very -- we're all very focused on delivering the best price for the customers. So at the same time that prices are coming down, we're driving efficiencies. And the key for us is to make sure that you're driving efficiencies faster than gross margin or faster than prices coming down. So you can still expand gross margin. And we feel like that's where we're at in the game.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. And how should we think about the potential to drive further efficiencies? I'm assuming that this is tech, this is your tech or your software running on top of your hardware. So there's still probably a lot of efficiencies that you could grind out of that plan.

A - David M. O'Hara

Yes, I think there's still some to be had. And I also think there's a lot of expansive growth that we've talked about. The other thing I would say is you eventually hit the law of large numbers, which is they're going to be pretty big numbers. Now I don't see that abating anytime soon. But ultimately, we'll get to a point to where I think that will all start to moderate. But right now, we feel like there's still good growth and still good efficiencies to be had.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. One of the things that came up over the last quarter, there was -- it seemed like a disconnect between there's a lot of data points that investors are getting out of component suppliers and OEMs that ship into hyperscale cloud vendors like yourself, talking about sort of weakness in demand trends and sort of those shipments coming down. But all of the cloud vendors, including Microsoft, saw really good demand trends in terms of sort of Azure growth was dead stable in terms of 76% growth. Your CapEx numbers are still really strong. What's the disconnect? Why are we getting -- I don't want to say a bad read. But why is there sort of this timing difference between what we see from the component suppliers versus kind of what we see in your demand trends and your revenue trends?

A - David M. O'Hara

Well I think part of it is that as we move through time, there is efficiencies that we drive in our core fabric, for example, where we can get more utilization out of a server or more utilization out of our networking or bandwidth. And so we -- if you look at it over a series of quarters or even years and our core fabric gets better, we can do more with the same amount of hardware. And so I think that maybe even though the cloud market continues to expand as fast or faster than it has, I think from the equipment perspective, we're just getting smarter about how we use it and how we -- what that utilization looks like. And so I don't know if I'd call it a disconnect, I would just say that I'm not sure the growth rates are the same for those industries simply because we get better utilization out of the hardware than we used to. So it's not linear.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. Shifting gears to developers, one of the -- actually, I always had a very fond relationship with developers and a good relationship with developers. But one of the biggest news items of 2018 was the acquisition of GitHub, which is squarely aimed at sort of that developer community and further fostering that relationship. Can you talk to us for a little bit about why GitHub? Why was that such an important acquisition for Microsoft and how that impacts for the Azure side of the house, if you will, as sort of an environment where you want these developers to be building their stuff?

A - David M. O'Hara

That's right. So we're very happy with the GitHub acquisition. In the same spirit of even when we talked about the Red Hat partnership, we started developing a good relationship with GitHub years ago. And Satya and Scott Guthrie, for example, both were very involved and were frequently meeting with the GitHub management team. So when the opportunity came up to acquire GitHub, it's not like it was brand-new to us. We clearly had an existing relationship. And customers were seeing benefits from it. The management teams knew each other. And we had -- so we had that strength there. And so when the opportunity came up, we said exactly what you said, which is, "Hi. 30 million developers, 30 million-plus developers." Lots of good news for how we think about Azure. But mostly, it was about how do we really embrace that developer community. And I think Satya has been clear in articulating that when we look at acquisitions, we really look at it from a community perspective, like is there a community we can serve? Is there a community that could benefit from our cloud? But even with GitHub, we're very committed to making sure that GitHub is a presence on all major clouds, not just Microsoft Cloud. Now I do think that as we -- as the companies work together even more, there's an opportunity to educate them on Azure and how they should think about developing apps on top of Azure. And so we will certainly be promoting Azure to the GitHub community, to the GitHub developers. But really, it's whatever cloud they want to build on, we're going to support that. And so I think for us, it's more about having that community and growing that community. And if there's benefit to Azure, that's great. But GitHub is its own -- has its own strength among its developers.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. Shifting gears again to Office 365. The commercial sort of move to Office 365 has been, I'd say, one of the big successes for Microsoft over the past three years from our work from the outside in. And I think you guys would agree that more than half of the kind of units out there, the seats out there that were in Office on-premise have moved over to Office 365. How should we be thinking about the world trajectory on Office 365 on a going-forward basis? You're past the peak in terms of units. Is there enough pricing on the other side of the hill, if you will, to sort of sustain the type of growth that we've been seeing in that Office 365 business?

A - David M. O'Hara

So I think there's a few vectors in terms of how we think about Office 365 growth. One is we have said we're sort at the halfway point or a little past that in terms of moving customers over. But that's still a big growth opportunity for us even though we're sort of at that point. Two is with our E5 offerings, for example, we think there's technology and services that we can provide that maybe replace some of their existing services or maybe augment their existing services. And so as we look at E5 as a new SKU, I think there's some ARPU opportunity to really go benefit from customers taking advantage of that stack. Then third is we continue to push into the SMB space. And I still think there's more seat penetration there. The ARPU may not be the same. But it's still strong and solid. And so we look at it as the existing customer base, how do we think about new SKUs like E5 and then how do we think about SMB. All of those are growth vectors for Office.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. So if we think about pushing ARPU higher over time, what should we think is more likely, that we're going to see an E7 SKU coming out than corporate given more functionality that we're not thinking about today, maybe we drop an E1 SKUs to push guys further up-market and force them onto the E3 or E5 or just price increases start to roll through on the Office 365 days?

A - David M. O'Hara

Yes. We're -- I would say that taking those in sort of random order, we feel like customers benefit from the E1 SKU. And so as long as customers benefit from that, we're still going to continue to have that offering. I do think there's always new functionality that we can add to Office. Teams is a great example. We have a great adoption of Teams as a tech. And we personally all use it internally and are very happy with how we think about Teams. And so I do think if we're going to say which of those is most likely, it's more likely that we're going to add new tech to the current Office offering and then we'll just figure out the best strategy for that for customers and for monetization. And so we don't look at Office and say, "We should be taking prices up that side." That's not a focus for us. We're more focused on adding value to the customers -- to the existing offering for customers, both new and current. So I would say if those are the 3 choices, we're more likely to add offerings in tech.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. Then on the -- you mentioned further expansion in terms of a potential user base. And I'm assuming you're talking about the F1 SKU.

A - David M. O'Hara

Yes.

Q - Keith Weiss {BIO 6993337 <GO>}

And can you talk to us a little bit about where that's let you take Office 365, the value proposition you're giving to these front-line workers and, I mean, your perspective about sort of the number of users? That's a huge expansion of potential number of users outside of just the core information workers.

A - David M. O'Hara

It's a big expansion in terms of number of users. The monetization is obviously very different. But we do think that it's the whole different users that we maybe haven't had before because, for whatever reason in the old world, Office was seen as being tied to a PC. And now it doesn't need to be tied to a PC, it can be any simple mobile device. It can be any type of user. And I think the more users that we get in an organization that are using Office in some way, shape or form, the more loyal they're going to be to Microsoft. And so that really what that's about is getting an expanded presence in the customer base.

Q - Keith Weiss {BIO 6993337 <GO>}

So I have a couple more questions. But I want to take the chance to get questions from the audience if we have any questions from the audience.

Q - Unidentified Participant

You've signed a lot of recent deals with some large companies. ExxonMobil was last week but also Walmart, Kroger, Walgreens, Gap, et cetera. Do you view this as an evolution of relationships with existing customers or more moving, transformative, large deals?

A - David M. O'Hara

Yes, I would say that the good news for Microsoft is almost any company is a customer in some way, shape or form. And so a lot of times, it's an existing customer. But it's an existing customer going through a whole new opportunity. So we need to basically reframe the conversation. I personally get to spend a lot of time on those deals, on the bigger deals. And they're super exciting for both the customer and for us. But they're also looking to us to sort of lead the way. And so there's -- for us, there's an existing customer that renews and goes through the process of just continuing to be a customer. And there is the existing customer that says, "I need to think about things completely differently. And how should I do that? And how should I think about that?" So it's both. It's like, "Hi. we want you to continue to be a customer. But we're here to help you drive through that transformation." In addition to Exxon, we announced our deal with Walgreens and we have the deal with Walmart. And we have lots of big companies out there that want to move into the new world. But it also means that they're continuing with our existing relationships. So it's both in those cases.

Q - Unidentified Participant

Could you just talk about how the gaming business will integrate with the cloud going forward and where you see the opportunities there?

A - David M. O'Hara

Yes, I'm sorry, you said which business?

Q - Unidentified Participant

The gaming business, the video gaming business.

A - David M. O'Hara

The game business? For us, we've been in gaming for a long time. And we've watched gaming evolve into more of a cloud business and sort of away from hardware and more into how we think about cloud. The good news is that while the percentage of users that are in gaming is small, the ones that are there are intense. And so we see gaming as being a growth business for us. And how would I describe it? We're in the unique position of sort of like with SaaS software and running IaaS and PaaS in gaming, we also have the core offerings as well as the infrastructure. And so I think that puts us in a unique position to optimize that and also to give a lot of choice to the gamers. But having said all that, a lot of the gaming companies that have the most popular titles are all running with us because they know that we can get them distribution. We can also help drive efficiencies. So we look at gaming certainly as an expansive business for us.

Q - Keith Weiss {BIO 6993337 <GO>}

Got it. And unfortunately, it takes us right through the end of our allotted time. But thank you very much for joining us, Dave.

A - David M. O'Hara

Yes. Thanks, Keith.