JPMorgan Tech, Media and Telecom Conference

Company Participants

- Christopher C. Capossela, CMO, EVP of Marketing & Consumer Business

Other Participants

- Mark Ronald Murphy, MD, Research Division, JP Morgan Chase & Co
- Unidentified Participant, Analyst, Unknown

Presentation

Mark Ronald Murphy {BIO 17750249 <GO>}

Okay. Good morning, everyone. I am Mark Murphy, a software analyst with JPMorgan. And it is a great pleasure to be here with Chris Capossela, who is an EVP and Chief Marketing Officer with Microsoft.

Chris, thank you so much joining us.

Christopher C. Capossela {BIO 6054036 <GO>}

Yes. Thanks for having me. It's great to be here.

Mark Ronald Murphy {BIO 17750249 <GO>}

I was hoping you could -- we could maybe kick this off by listening to any opening comments you might have and maybe, more importantly, a little bit of a background or introduction of yourself.

Christopher C. Capossela {BIO 6054036 <GO>}

Okay. Great. So thanks, everyone, for -- obviously, for being here and for your support of Microsoft. My name is Chris Capossela. And I'm the Chief Marketing Officer and Executive Vice President for Microsoft. I'm on Satya's senior leadership team. So I'm a peer to Amy Hood, if many of you know her as our CFO. We get to work very closely together. And we thought it'd be fun to have me spend some time with our big investors, obviously. And I'm also from Boston. I've been at Microsoft for 25 years, joined right out of college and had a ton of different jobs. And it was three years ago that Satya became our third CEO. And a month into his tenure or so, he asked me to take on the role of Chief Marketing Officer and join his leadership team. And it's just been an unbelievable sort of three years of having a front-row seat at a massive, massive cultural transformation inside the company that, I think, people have seen outside the company as well.

Questions And Answers

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

So let's begin with that. Let's talk about the brand perception of the company. You've had this very long, very successful career at Microsoft. It sounds like Satya recognized you immediately within a month and gave you this role. You've worked in Office and productivity. You've worked in consumer and the commercial businesses. You've also been instrumental, as well, in the retail channel. And I wanted to ask you, as a marketer, what is it that you think customers get right about Microsoft's image and the understanding of Microsoft's vision? Then on the flip side, what misconceptions do you think might be lingering around where you would spend advertising, marketing dollars to try to correct them?

A - Christopher C. Capossela {BIO 6054036 <GO>}

Yes, I mean, I think, by and large, the brand health is just fantastic. If you look at the interbrand surveys or the BrandZ surveys, they'll have Microsoft on the top 3 or 4 or 5 of all brands on the planet. And that's fantastic. The competition in tech has other companies in that top list, too. So the -- we have, obviously, our work cut out for us. I would say that, for us, the most important thing is to really get people to understand that Microsoft is not really focused on trying to be a cool kid. We're not focused on some of the things that, I think, our tech competitors focus on. We're really about empowerment. And Satya spent this time crafting a new mission for the company with the senior leadership team, that's to empower every person and every organization on the planet to achieve more. And so the keyword for us is really empowerment, we're never going to worry about whether we're viewed as a cool company. We're going to be worried about making sure that the things people can do with our products are amazing. And the things they do are likely to be cool. If you look at the top 100 books on The New York Times bestseller list, those -- the people who write those and those books are amazing. The vast majority of those are written in Word. Is Word cool? Not at all. Word is not going to be a cool tool. But man, it's an empowerment tool. And so I think telling those stories of empowerment are really important to us as a company. And I think that's what you're seeing us do more and more with our marketing. Most of our marketing now has real people telling their stories of what they're doing with Microsoft technology to transform their company or transform how they spend their personal time. And if you were to just look at the advertisements we run or the videos we make, the vast majority of them now have real people onscreen saying, "Hi. I'm a New York City police officer sketch artist. And I sketch the bad guys. And here's how I use the Surface Pen to do that. And here's why I love it." Or, "I'm Temenos. And I'm bringing banking to every country that has a phone. And the Microsoft cloud is making -- allowing me to do that." So we want to really tell these empowerment stories. And if people think of us as a company that helps power commercial business, consumers, et cetera, then, I think, we're doing the right thing. But I love how people are viewing the company right now. It's very positive. And the outside perspective finally matches the inside perspective. And that hasn't been true prior to Satya taking on the CEO role. There was a real disconnect between the inside company seeing -- how we saw each other and how the outside world saw us. So that's been awesome, to see change.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

So Word isn't cool. But I will tell you, Excel is pretty cool for this audience.

A - Christopher C. Capossela {BIO 6054036 <GO>}

Yes, yes. And that's what it comes down to, like, financial people will tell you Excel is amazing. But if you talk to somebody who's an author, they wouldn't say Excel is amazing. They would say Word is amazing. It is all what is in -- what it does for you makes it very important to you. But I think, from a brand perspective where people ask me all the time, "What are you doing to make Microsoft cool?" And it's like, nothing. I mean, nothing. We're literally doing nothing to make it cool. We're trying to build great things. And if Surface, people love Surface, fantastic. I want you to love it. But am I doing some metric about cool? I'm not doing any metrics about cool. We measure: do people think Microsoft's best days are ahead? Do people -- do Microsoft -- does Microsoft build tools that matter in my life? Is -- am I proud to use Microsoft products? Would I recommend Microsoft to my friends and family? Those things, we measure. No cool factor is in any measurement that we do. And that, I think, is the right mindset for us to have. Even if someone says to me, "Minecraft is so cool." Fantastic. I love it. It's just not the goal to make it cool. It's the goal to make it awesome. And I love that my daughters spend hours in Minecraft instead of watching TV or whatever. I think that's a great -- I think it's a great thing.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

So if you go back -- so in some ways, there has been some real internal change, right?

A - Christopher C. Capossela {BIO 6054036 <GO>}

Oh, huge.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

Because if you -- so if you go back in a decade, Microsoft was viewed by this audience as being a PC-centric company. You had struggling products like the Zune player. You had the less successful Windows launch, where you had Windows Vista. Remember that one?

A - Christopher C. Capossela {BIO 6054036 <GO>}

Are you kidding? Yes, I lived through it. I look like I look today because of Windows Vista.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

I thought -- we'd thought you'd have more gray hair.

A - Christopher C. Capossela {BIO 6054036 <GO>}

It all fell out.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

But anyway -- so you look at the company today and you've got these leading-edge technologies. You got the HoloLens. And there are incredible demos of the HoloLens right now. It looks like it's a step ahead. You have strong advancements in AI. You have cognitive services. You have the Azure platform. How do you think -- how has the marketing and branding and advertising kind of evolved to keep lockstep when the technological evolution is so rapid?

A - Christopher C. Capossela {BIO 6054036 <GO>}

Yes. I mean, you obviously -- we try to market what we have as opposed to any visionary future. I'm never a huge fan of marketing stuff that people can't actually go use. And so it's one thing to do a sexy demo or give a speech that has some far-off vision that people get excited about. But it doesn't -- I don't think you market those things. I think those are used at important moments in time. The marketing has to be about telling how companies can do better than they're doing today using your stuff. So we really try to focus on what's possible today. HoloLens is far more than a demo. We have a developer edition out. We have huge companies doing amazing things with HoloLens. So the PGA is doing some cool things with HoloLens, Volvo and Japan Airlines and many, many companies. So that's actually a very real thing. And that I can market. And I want to market what they're doing. Hi. how are we reinventing learning with the HoloLens with Case Western University? How is Japan Airlines reimagining the way training happens to service a jet engine? Jet engines are huge. It's very expensive and hard to train people on how to service them if they have to actually be in front of the jet engine all the time. With HoloLens, you don't. You can actually have a regular room that you put the HoloLens on. And now you're seeing a hologram of the jet engine. And you can have fantastic training with the holograms themselves: moving around, flipping the hologram, getting to the inside components of the hologram without disassembling the jet engine. There are some amazing things there. So we want to market what's real. We want to market how we can help people digitally transform. And for me, one of the metrics of success is just how often, when I call on a customer, are we talking about licensing Office versus how often are we talking about how we can help you transform your company. And boy, if you want to know the most shocking difference of the old Microsoft versus the new Microsoft, it's how little time I spend talking about the licensing details of Office and how much time I spend helping customers understand how they can digitally transform their entire company on the Microsoft cloud, which Office is a major component of. But the dialogue isn't about pricing and packaging and skewing. It's about how do we do this cultural transformation, how do we change our business. And that's -- that means we're in a very, very good place.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

So I want to ask you what artificial intelligence is going to mean for this whole equation. We -- many of us were just at your Build Conference, great, successful conference up in Seattle. You demo-ed some incredible technologies, in my opinion. There was computer vision. There was speech. There was text understanding. You, of course, have Cortana in the portfolio. Many of us thought that the story remix was a big hit. It was a way to take -- it takes your photos and your videos. And it will kind of automatically create a movie out of them. It will put it to music. Then you click a little button. And it will remix the whole thing and kind of -- and do it all differently.

Yes. You can pick the actor you want to be the star. You pick one of the...

It -- yes, it was incredible. You can tag them and the text will follow them. You can turn a soccer ball in -- it'll be an exploding soccer ball. It was really incredible. So these things demo well. But Google is also pretty hard at work on artificial intelligence. And they're no slouch in this arena. And so I want to ask you, who do you think has the clearest vision for AI right now? And as a company, how do you think about building a sustainable advantage in that market?

A - Christopher C. Capossela {BIO 6054036 <GO>}

Yes. I mean, obviously, I'm going to say we have the best vision. And it -- that's not -- no huge surprise. I think Google is not the only one. Everybody, obviously, is jumping on sort of the AI bandwagon. One of the things that I love about Microsoft is just the deep amount of investments we've made in deep research. And so to do AI well, it's not a gimmick. Like, you have to have incredibly -- an incredible team of researchers that are dedicated to these really, really hard computer science problems of vision, or of speech-to-text, or text-to-speech or the many, many different things that we're working on. And I only think there's a handful of companies that have built the deep research talent inside the company to do this really well. And certainly, Microsoft would be at the top of the list. Harry Shum is super recognized, as many others are. He leads our AI and research team. But then the -- obviously, the magic comes into how do you figure out how to apply it. And for us, AI, I think, is broader than it is for more companies. Many companies, you take a look at, like, IBM with Watson. It's sort of one thing. And they talk about it as one thing. And they've done a ton of marketing on it, et cetera. But for Microsoft, AI actually spans so many different things we do. These cognitive services are services that developers can use right now to integrate AI into their own applications. So if you want to make a construction site safer using cameras, we demo-ed this at Build. We're just using off-the-shelf cameras on a construction site that is always under surveillance anyways for safety reasons. The cameras can do amazing things using our cognitive services and the Microsoft cloud to identify that a dangerous piece of equipment hasn't been put away correctly or there's a chemical spill that no one's attending to. And having the AI to do that, those developer services exist right now. But Microsoft also has the ability to build AI into the products that you're all using every single day. So when you use Office, more and more of Office is going to be driven by these AI models to make it incredibly easy for you to get started in Excel or get started in PowerPoint, figure out what data you should go bring into your Excel spreadsheet based on what you're doing. There's just so much that we can do that isn't just about the developer. But that's actually about the billions of people who use Windows and Office every day. So for us, there's multiple components to our AI strategy. And I think we've got the broadest view of it. And you saw a lot of the press coming out of Build saying, "Wow, we were really impressed with Microsoft's approach to AI," which was great for us to see.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

So the structural advantage for Microsoft, it'll begin with the quality of the talent that you have in the research labs, the commitment to the research labs, the Ph. Ds. that you have there. But are you trying to say that there's a structural advantage in being able to not just infuse AI into your own Microsoft technologies. But being able to appeal to the base of developers that are going to unleash their own developer toolkit?

A - Christopher C. Capossela {BIO 6054036 <GO>}

Yes. That's right. That's right. You need to make the -- you need to make AI capabilities available through the cloud platform. So that any developer can just come and bring AI to their own solutions. So Azure has to be great at giving you massive sort of supercomputing capabilities for AI. The actual AI APIs for learning and vision and speech have to be there. Then every developer can get at them. And we can integrate AI into our own first-party applications. And that's where, I think, you've got a span that's broader than what most companies will be able to do.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

Okay. Now let's transition that into a little discussion of AWS versus Azure. I want to ask you. I guess, the simple question is just, how do you position the differentiators between those platforms from a marketing perspective? When you look at the numbers, Amazon's footprint is larger if you're just looking at the Infrastructure as a service. So the compute and storage, they're run-rating a little under $15 billion. Azure is run-rating around $3.5 billion right now. But Azure is growing faster. It's growing noticeably faster. And I want to understand. How do you make sure the world doesn't get stuck in a mindset that this is just a commodity layer? It's storage and compute. There's no difference between these 2 platforms and treating them like a commodity.

A - Christopher C. Capossela {BIO 6054036 <GO>}

Got it. First, I won't confirm those numbers. So just for the record, I don't recognize that Azure number. But I'm sure you have a model behind it. I just want to make sure I don't say yes to that number or...

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

No, understood. We understand there is some wiggle room in the disclosures. Got it, got it. Okay.

A - Christopher C. Capossela {BIO 6054036 <GO>}

Big wiggle room. Anyways, I would say a couple of things. The -- one of the most important things we hear from customers, that our approach is quite different than other cloud providers, is this deep understanding of the need for hybrid. A deep understanding that the ability to write an application for the public cloud and then be able to run it in their own data center using Azure Stack is a massive advantage. If you want to do business in Russia, it's hard to find a data center or cloud provider in Russia that meets all the needs of Russia, as one example. But there are many other examples. With Azure Stack, you can buy your own hardware. You can run it yourself in whatever place you want to run it. And yet, you're building an application that works exactly on premise as it works in the Azure Cloud. So there's a major shipping and tour company that has big cruise liners that take people out into the big open ocean. And they love the notion of Azure Stack because they can write their applications for when people are connected to the Internet, the ship is connected. But they can also write their applications and run them on Azure Stack on the ship when they're not connected or when it's very expensive to be connected and they choose not to be connected. So Microsoft's really the only one who can take you from your data center to a hybrid data center to the public cloud. And that alone is a massive, massive advantage as big enterprise IT moves from holding on to everything to realizing that the world is going to be a blend. And I think that realization that the world is a blend of public and hybrid and private is something that plays to Microsoft's strength. Then you get to the actual things we offer on Azure that are incredibly differentiated. Office 365 is built on Azure. Dynamics 365 is built on Azure, these higher-level services that aren't about storage. The cloud storage business is a very uninteresting business. But running full-fledged machine learning models that help companies do predictive analytics for when they should repair their elevators. That's actually very high value that you can charge a margin for that business. And that plays to our strengths. So Infrastructure as a service may be a requirement. But it's not actually where we think the exciting and interesting part of the cloud is going. That's to higher-level services that we actually feel like we can do quite well. And you're seeing that in our growth rates. Then you can get super technical and you say, "Hi. we have a better data center footprint than anybody else. We're in more regions than Amazon and Google combined. We're the only public cloud company that legally operates in China. We're the only public cloud company that has a data center in Germany that respects the data sovereignty laws of Germany." So those are good advantages, too. But I think hybrid is critical. And the higher-level services, those are the ones that'll last, that are really differentiating over many, many years.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

So hybrid and higher-level services. If this whole war, if the cloud platforms war is starting to enter a new phase, right, if we look back on it and say, Phase 1 really was about tech first companies. It was about Uber and Netflix and Airbnb and all that. If we look forward and say, Phase 2 is going to be about enterprise IT, would you -- would it be your opinion that having these higher-level services is essentially going to allow Microsoft to catch up and surpass AWS in that market for storage and compute? Or would your answer be, "Well it doesn't really matter. It's all going to come down to the higher-level services anyway."

A - Christopher C. Capossela {BIO 6054036 <GO>}

I certainly think that the track record that we have in the enterprise plays well to Microsoft's strength. The account teams that we have calling on large enterprises, the fact that most are running their e-mail through our cloud. And e-mail, believe it or not, has become just this incredibly important line of business system. And we have many, many CEOs telling me, "Hi. I can deal with an SAP outage. I can't deal with an e-mail outage for a second." So you have to have -- five 9s isn't enough for your e-mail system. I think having that track record and that relationship where customers trust us, they know there are going to be mistakes made. But they trust us to respond to those mistakes really well. There's no doubt, as the data estate and data centers move to the cloud on the enterprise side, that we have a wonderful opportunity that's sort of ours to lose, shall we say. But I also speak to lots of companies that are on AWS. And they tell me, "Look, today, 90% of my spend in the cloud is AWS. And only 10% of it is on Azure. And I have a goal to make that 50-50." And that has actually nothing to do with they believe in us more. They literally just want balance of trade. They literally just want the ability to sort of say, "Hi. it's going to be better for my company if I use multiple vendors here." And obviously, given that Amazon is on the top spot and we're on the second spot, we have a lot of headroom from simply plain balance of trade across the cloud.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

Yes. So dual-sourcing for whether it's redundancy or backup or just having price -- or pricing right. Okay. And that's going to become common.

A - Christopher C. Capossela {BIO 6054036 <GO>}

Or pricing, exactly, negotiating power. Sure. I think that's -- without a doubt. I hear that more and more from people. And that basically says, "Hi. we've arrived." People see us as a real vendor in the space. And we're actually the clear #2. And so there's a lot of upside for us.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

Yes, okay. And we see that in our CIO survey work, by the way. It certainly backs up that a lot of progress is going to be made by Azure. We have about 13 minutes remaining. Why don't we check now for questions from the audience? We have one up here in the front. And if -- can we get a microphone up here?

Q - Unidentified Participant

I can speak loud, too, if you want.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

She's almost here. It is -- there it is.

Q - Unidentified Participant

Okay. Relative to industrial IoT, could you tell us -- talk a little bit about, because a lot of people in the room are interested in this, what role Azure is going to play in terms of providing Edge services? And what industry areas are you guys going to concentrate on? So I'm very interested in that area in terms of what you're doing.

A - Christopher C. Capossela {BIO 6054036 <GO>}

Great. Yes. So at our Build Conference, we talked about the -- sort of our world view of computing, moving to this Intelligent Cloud and Intelligent Edge, where the cloud is incredibly important. But there'll be 25 billion devices that are connected and considered smart devices in the next couple of years, according to various industry analysts. And so there's just a massive opportunity for us to have intelligence at the edge of the cloud that runs on these devices themselves. And lots of people like to think about the mobile phone as the device. But we see industrial opportunities on just an incredibly wide array of different device types. We have a wonderful opportunity at Microsoft. And IoT is one of our fastest-growing Azure services, to have a lot of these devices be powered by Windows and to have even more of these devices use our Azure IoT services that allow them to do compute on the device itself. You can imagine building a neural network on -- in Azure and then deploying it to an Edge device that's doing something super interesting. Maybe it's a robot or a snake that somebody's driving into a place that a human being can't crawl into to do some sort of security thing. And that's an amazing opportunity. We think there's going to be tons of these. I mentioned cameras getting smarter and smarter and being able to do workplace safety, where you're building a sort of neural network on Azure, deploying it to a device on the Edge. And that device on the Edge becomes incredibly valuable to a company for all the things that it can do, whether it's workplace safety, whether it's checking towers for needing to be repaired. Those things are all super interesting to us. Retail is a vertical that we think this is really interesting for. Discrete manufacturing is an industry, we think, is very -- this is very interesting for. Financial services would be another one. Health care would be another one. So 4 or 5 industries that we think IoT is particularly well suited to. And this notion of devices on the edge of the cloud are areas where we're pretty excited to go after. And hopefully, we'll see lots of great Azure growth. But also Windows-embedded growth as well. As Windows powers a lot of devices you may not know that it's powering: gas stations, vending machines, et cetera.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

Other questions from the audience? We have another one right here.

Q - Unidentified Participant

Recently, there was a New York Times article on how Google has taken over the classroom. And anecdotally, my son is in second grade. And when he does school projects, he actually does not use Word. He uses Google Docs. And it's not his choice. It's what the school, as a whole, uses. Is education and schools and classrooms an important frontier for Microsoft?

A - Christopher C. Capossela {BIO 6054036 <GO>}

Yes. It is. The education space is a really interesting space because there's -- everything is basically free when it comes to software and technology. The hardware is obviously not free. But the software is. And so from a business model perspective, you'd say, "Huh." But from a -- these are the workers of the future. These are the CEOs and the inventors of the future. And so we think it's very important for us to have today's students, particularly starting in middle school, maybe even fourth grade and up using Windows and using Office and using Minecraft in the classroom, using Skype in the classroom. We think these are really interesting opportunities for us. I know the article you're talking about. A couple of weeks ago, we had a major education event that Satya kicked off, where we introduced a new version of Windows called Windows 10 S. And we introduced a bunch of hardware from our hardware partners, including a brand-new laptop from Microsoft called the Surface Laptop that runs on Windows 10 S. And Windows 10 S has the very important capability of essentially being locked down. You can't download anything from the web on the machine. And it starts up very quickly. And it stays very clean and safe and secure 1,000 days later after you started using it. And most Macs and Windows PCs don't have that property. Because people can download anything, they sort of great cruddy over time. And you have to go back and clean them up. And this is one of the reasons that Google's had success in the education space with Chrome books that don't have that property. So we think the combination of Windows 10 S, plus low-priced hardware from our hardware partners, plus fantastic tools like OneNote, which students absolutely love, like Minecraft, which helps kids to learn how to program in the classroom, we have some real assets that Google doesn't have that, we think, we're ready to really do a phenomenal job in the education space. And I think that's super important. If you look broadly around the world, Windows and Office are still incredibly strong in education. But there are countries like the U.S. where we have a lot of room to do better. And we think Windows 10 S, great hardware, great manageability to manage these devices, Minecraft, Skype, OneNote, Office, we've got a really awesome story to tell. And we're going to go out and tell it now.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

There's one back there.

Q - Unidentified Participant

You had just an in-depth comparison between Azure and AWS. Can you talk about the differentiation you have between your AI and Google's AI, like, which one's better? And you talked about data analytics and Google also offer that. How do you differentiate your product compared to theirs?

A - Christopher C. Capossela {BIO 6054036 <GO>}

Yes. So Harry Shum would be a better person to answer this question than me. But I would say that there's a whole series of tests that these AI engines get put through in terms of who does a better job at a deeper level of understanding. And this is true computer science. These aren't like industry benchmarks run by a Gartner, this is -- now we're talking about, "Let's go visit MIT, Carnegie Mellon, et cetera, et cetera." And there are who people dedicate their lives to doing computer vision. And one of the areas that we really excel in is computer vision, being able to recognize objects in the world and not just tell you that it's a person. But actually be able to give you incredible detail about what that person is doing, the emotions that, that person has, what the person is looking at, if they're wearing glasses, if they're wearing a blouse, what color is that blouse. Like it goes -- the ability for us to recognize objects goes, I think, far beyond what anybody else has done. Now I'm sure Google is busy trying to do better than us and we'll continue to sort of leapfrog, that is the technology world. But I would say today, Harry would probably sit up here and say, "I'd happily compare our algorithms around vision, text, speech, et cetera, to anybody's. And we think they're better than anybody's in the world." You look at what we just showed with PowerPoint. And we did this demo using, what we call, Translator integrated into PowerPoint, where somebody was speaking to a PowerPoint slide in English and anybody else on their phone could essentially dial in to the presentation. And you choose the language that you want to see the subtitles in on your phone. And we support something like 60 languages. So I'm speaking in English and on this phone, it's showing what I'm saying in Chinese. On this phone, it's showing in what I'm saying in Spanish. On the screen, we're showing what I'm saying in French as subtitles. That type of speech-to-text translation at high, high levels of accuracy, we would say we're doing better than anybody else. I'm sure there's a slew of tests that Google would say they're doing better than us. We're both quite good at this. But I don't think there are 20 companies that are quite good at this. I think it's a very small number of companies that can afford to put the R&D into being really world class at AI, just like there are very few companies that can be world class at running global data centers. So we think it's a very small number of players, 1, 2 or 3, probably 2 or 3. And we're very proud to be at the top of that list. And we're going to fight every day. But there aren't going to be 20 of them. It's going to be a very small number. I thought I saw a hand way in the back with a guy in the blue sweater. But maybe he got his question answered. Any other questions?

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

There's one in the back left corner.

A - Christopher C. Capossela {BIO 6054036 <GO>}

I saw a phone waving it.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

Yes.

Q - Unidentified Participant

Can you talk a little bit more about China? Microsoft has said repeatedly, Satya and you just now, that Azure is the only public cloud to operate legally in China. Amazon would disagree with that, I think. Can you go into a little more detail about what you mean?

A - Christopher C. Capossela {BIO 6054036 <GO>}

Well having a data center actually in China run through a joint venture with a Chinese organization that the government recognizes, we're the only ones in the world that do that. Google doesn't do that. Amazon doesn't do that. There are Chinese companies that do it, of course. We're the only multinational that does that. That's specifically what I'm talking about. Any others? There he is, yes.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

That was the one.

Q - Unidentified Participant

Can you talk about gross margin progression in your cloud business? I mean, overall cloud makes 50% gross margins now, I believe. But can you comment on the individual components? And how you see that over the next couple of years?

A - Christopher C. Capossela {BIO 6054036 <GO>}

Yes. That I can't comment on, the individual components. I'll get in deep trouble. Amy will never ever let me out of the house again if I talk about the individual components. I will tell you, I think if Amy were here, she would say, "Hi. look, the progress that we're making, both on the cost of sale side, we're pleased with. And also on the cost of providing the service, the actual COGS of running Azure or Office 365," we're making very -- we're making the progress that she expects us to make, which I think is very good progress. So I think, both the cost to get a sale and the marketing cost to acquire a customer, are headed in the right direction as well as substantial improvements on the cost to run our cloud infrastructure. We want to see progress on both of those things. And we are seeing progress on both of those things. I think she'd also say, "Hi. quarter-to-quarter, you may see some lumpiness as the investments we make in CapEx might boost a little bit this quarter when we open up a new data center or what have you." But in general. I think we're very happy to be on the plan that she has laid out, both from the $20 billion cloud revenue run rate. But also from getting the gross margin to be where we want it to be. And I think there's nothing that we see structurally that makes us feel like we can't be at the scale that Amazon's at with fantastic -- or with very good gross margin. And I think that answer will allow me to keep coming back to conferences like this.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

We would like that. We would like that. And on that note, we are out of time. We will wrap up there. Chris, it's been such a great honor having you with us and thank you for joining us.

A - Christopher C. Capossela {BIO 6054036 <GO>}

Thank you. So much. Thank you, Mark. Nice to meet you.

Q - Mark Ronald Murphy {BIO 17750249 <GO>}

God bless.