

Microsoft Corp Financial Analyst Briefing 2017

Company Participants

- Amy E. Hood, CFO and EVP
- Chris Suh, General Manager of IR
- Judson Althoff, EVP of Worldwide Commercial Business
- Phil Spencer, Head of Xbox Business
- Satya Nadella, CEO and Non

Other Participants

- Karl Emil Keirstead, Director and Senior Equity Research Analyst, Deutsche Bank AG, Research Division
- Kasthuri Gopalan Rangan, MD and Head of Software, BofA Merrill Lynch, Research Division
- Keith Weiss, Equity Analyst, Morgan Stanley, Research Division
- Mark L. Moerdler, Senior Research Analyst, Sanford C. Bernstein & Co., LLC., Research Division
- Michael Turits, MD of Equity Research and Infrastructure Software Analyst, Raymond James & Associates, Inc., Research Division
- Philip Alan Winslow, Senior Analyst, Wells Fargo Securities, LLC, Research Division
- Ross Stuart MacMillan, Co, RBC Capital Markets, LLC, Research Division
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- Walter H Pritchard, MD and U.S. Software Analyst, Citigroup Inc, Research Division

Presentation

Operator

Hello. Welcome to the Microsoft Financial Analyst Briefing.

Today's presentation may contain forward-looking statements, which are predictions, projections or other statements about future events. These statements are based on current expectations and assumptions that are subject to risks and uncertainties. Actual results could materially differ because of factors discussed today or described in the Risk Factors section of our Form 10-K, Forms 10-Q and other reports and filings with the Securities and Exchange Commission. We do not undertake any duty to update any forward-looking statement.

Please welcome Chris Suh, General Manager of Investor Relations.

Chris Suh {BIO 17955231 <GO>}

Good afternoon. Welcome to the 2017 Microsoft Financial Analyst Briefing. It's great to see so many of you here in Seattle. And a special welcome to those joining us online. I hope you had a chance to watch Satya, Scott and Harry this morning at the Build opening keynotes where they shared a lot of the exciting innovation happening at Microsoft. And we have a really great agenda here today for you.

We'll start with Satya. Satya will come out and share his perspective on the growth and innovation happening at Microsoft. Then Judson Althoff, who's the head of our Worldwide Commercial Business, will come out and talk about how our customers are transforming. Next, Phil Spencer, who's the head of Xbox, will come talk about the opportunities that we see in the gaming space. And of course, finally, Amy Hood will come and talk about how Microsoft continues our transformation journey.

So without further ado, let's go ahead and get the show on the road. Thank you, all. And I'll see you back at our Q&A.

Operator

Please welcome Satya Nadella, Chief Executive Officer.

Satya Nadella {BIO 3224315 <GO>}

Thank you, Chris. Thank you, all for being here in Seattle and coming and spending time with us. Hope you had a chance this morning to see the keynote. And also tomorrow, we have a lot more to cover in terms of our innovation agenda. And I hope you get a chance to see the keynotes tomorrow as well.

So what I thought I'll do is set some context. We get the chance to talk to all of you every quarter. But we thought we'll take this opportunity using our developer conference to talk more about where is technology going and what Microsoft is planning to do with all the secular shifts and what does that mean for our business.

One of the things I hope is clear to you. And we've done a good job of communicating it. And more importantly, staying consistent with it is: we've spent a lot of energy and time building connected tissue between our sense of purpose and in the enduring mission; having a real first-class world view as to where is technology going and being able to make sure that we're placing bets on the products we build; having a high ambition. But the ability to back it up with execution; and then ultimately, having a culture that allows you to do all of it.

I always think of that sense of purpose and mission and culture as the 2 book ends. They are enduring. But they need constant work. You have to use it to guide the choices you make. Pretty much, you can't just say, just given the sense of identity you have, you can't just go to every market and talk about that being a market that you can enter. You've got to have a real capability, something that you can uniquely

contribute. So using that as a filter. But at the same time, not falling in love with any current generation of technology that we may have even achieved success with. To be able to question that status quo, that's, to me, is what it's all about, especially in the tech business. But pretty much I would say in any business that's got strong network effects through digital technology. I would sort of posit to say that getting that balance and connection right between these 4 elements is probably more important than any temporal strategy. I always say that, look, every business has a growth phase. And then it flattens and it declines. The question is what are you doing right after. If you are going to be a business that's going to be there after one core hit is done, which although it happened to every business, that has had lots of growth.

And in our case, at Microsoft, we've had that. Over 42 years, we've been able to hit the right markets. And here we are on Techmeme 42 years after, duking it out with a lot of new players and a lot of new context and a lot of new competition. So there must be something we're getting right. That customer relevance and business growth, to me, is the ultimate test. But you've got to do a lot of work on these 4 elements to be able to relevant with customers in business growth.

So I spent, quite honestly, more time thinking about this, reflecting on it and making sure we're greater getting this right. I know this much more so now than even three years ago as to how important that balance and keeping that balance and getting that balance right is.

Now for me, this mission, as I've always said, is more than a set of words. It's a real living guide. Everything that we do will always have that question of is it relevant for people, can we then also make it relevant in the organizational context for us. When we think about software, one thing that comes naturally, given our DNA, is to think of organizations as a first-class construct in the software we build. Sometimes we've got that balance to a point where it's more about the organization, less about the people. Those are big mistakes. But again, doing the right thing for people at the same time for the organization is really what we seek in all of the products that we build.

We definitely think of this as a global business. We operate in 190-plus countries. And it's complicated. But that complicated business and staying there over the long run has huge ramifications in terms of our overall long-term growth, because there will always be changes in macro in different parts of the world. You've got to adjust to those. But that footprint of being a multinational company that operates across the globe, especially in a time like this and having that wherewithal to be able to create local opportunity in every country, because that's perhaps something that's missed. When I go meet even a head of state anywhere, every head of state only cares about one thing. It's about their country first. It's America, America. You're in the U.S., it's about the America first. And in the Britain, it's about Britain first.

And what you're talking to that head of state, what they care about is what have you done in terms of local taxes, what have you done in terms of local small business productivity, local large business competitiveness, their educational outcomes, their

entrepreneurial work. That's what matters. And when I look at what Microsoft does, that's where I get -- I feel that we have real long-term prospects in those countries. Any company that just collects rent internationally and think that, that's a long-term stable business I think will be in trouble. Whereas in our case, it's always about creating local opportunity in all of those countries. And I believe it matters for building a global multinational company, even in tech, long term.

Now perhaps the more salient point, which will be reflected throughout, is that ultimately, our business model asks for this as well as our customers care about this, which is: it's not about our platforms, our technologies, our products; it's what they can do on top of it. So that notion of we build technology so that others can build technology, super-important aspect.

One of the examples I'll give is what happened in the auto industry is fascinating, because as soon as the car has become the most exciting high-tech product, one of the key things that automakers needed to decide is who is going to be their trusted partner when it comes to something like the cloud or even some of the AI technology. And in the world where there is confusion as to who is competing, who is partnering, Microsoft being clear about what our intent is, what our capability is and then being able to make sure that we can deliver on it has created tremendous amount of trust. And obviously, that's why all the American companies, the Japanese and German companies, we have fairly big, big design wins across the board when it comes to the cloud and auto.

We are well and truly on our way on this mobile-first, cloud-first world. And as I sort of talked about it this morning, we have this profound shift going on. And one thing that I've learned over the years at Microsoft tracking all our platform shifts is the feedback loop between the apps that are getting built. And if you closely listen, you closely watch what they're doing and how they're pushing, you really can define what that next platform shift is. And when I look at whether it's the IoT applications, what's happening in the home with even around the Xbox or what's happening in meeting rooms at work, it's clear as day that the cloud and the edge are both getting infused with AI and intelligence. The user experience itself, as I described it, is getting distributed across multiple devices. And this is not just a dumb shell. It is user experience with very rich state in it with very rich natural user interface in it, whether it's speech or vision or gestures. But it's multi-device. It's even aware of how you want to perhaps complete one task going from one device to the other device. So when you say that it's going to be multi-device experiences, then the next logical thing is the data and the AI that's making those experiences rich itself is getting distributed.

In fact, you see this very clearly today in the cloud where people who will train in the cloud were using, say, GPUs, take that model, deploy it in the edge to be able to recognize people, places, things, using even commodity cameras, for example. But ultimately though, you want to be able to make inferences on the edge. So you want to take the same model that you trained and you want to deploy it. But you -- if you want to make inferences at the edge without latency, you will need to perhaps even train in the edge. So we can clearly see -- I mean, if you're generating 100 gigabytes

a second in an autonomous car, the chances that you will rendezvous everything in the car are going to be low. So you need compute where data is getting generated so that you can create intelligence.

So distribution of intelligence, our AI and data. And that ultimately leads to I think a pretty profound shift in what is, as I described it, the inner and outer loops of how one writes the logic. You start writing logic using these server-less constructs that get triggered by events. They just don't run in one place. They have to migrate to where the event is happening. Then the complexity of distribute computing we've just introduced by that one statement needs to be managed. Just saying it's a Docker Container means nothing if you can't manage the complexity of all of these containers and think about a compliant application, model drift. So these AI models that you built in. And if there's going to be drift and you've got to be held accountable, the inner and outer loops of what you do as a developer and the computing infrastructure needs to support these new types of workflow.

So it's a pretty profound shift and clearly builds on what has come before, like all technology, the mobile-first, cloud-first world evolving to this intelligent cloud and intelligent edge world, we think, is definitely what we're going to be talking for years to come. And we have a fantastic structural position here. The -- I've always had those -- that we never should think about our servers or even our end device operating system as somehow legacy. But we've got to modernize it. So this shift of Windows to Windows as a service, the shift of servers as the edge to the cloud is not new news. It's something that we've been working towards. So the fact that we now have Azure Stack or the Azure IoT Edge or even Windows IoT, think about what's the biggest, most pressing concern of any IoT deployment. It is the security of the end node. And when you say security, that means someone standing up to patch those devices.

So to me, having these runtimes that are cloud-managed. But are running on the edge can give local intelligence is a big structural position. Even the way we think about the multi-device app model, you'll hear more about it tomorrow even in the keynote, is what we want is one device in a person's life to be a Microsoft device for us to be able to in fact improve things on all devices. That's a very different way to think about even, silicon-up, for sure, there's a programming model and an abstraction. But there's a cloud-down abstraction.

So I feel that where the world is going is better suited for what we, as a company, do well and even the structural position that we have. And we definitely plan to keep building on this worldview.

The opportunity, one of the things that as I look back, the key has been from from whether seeing the PC market for what it was possible for us to do, seeing the client server market, the cloud market, those are all good things that we were able to capitalize on, build good technology, build for share positions. One of the fascinating things that's happening right in front of our eyes is what we thought was a massive marketplace of \$2.5 trillion of IT spend all moving to cloud is, in fact, not the limit. The reason why we think of this, this \$4.5 trillion is for the first time, going

back to my auto example, Azure is not just getting built in to power the back-office applications or back-end applications of the client-server era. Autonomous cars and connected cars didn't exist in the client-server era. Connected elevators didn't exist. Precision farming or precision medicine didn't exist. So we're suddenly becoming -- the cloud is getting built into the COGS of the world. So it's not just the OpEx. But the COGS that's all being digitized. And that's the opportunity that's in front of us in this massive digital transformation that we see in pretty much every sector of the economy. And there's example after example that we can go. In fact, Judson, who will come up next after me, will just take a couple of examples to kind of give even the tenor of the conversation we're having with these customers that whom we've worked with historically over the years with PCs and client-server. But I must tell you that the qualitative change of the depth of our conversation now, when you're suddenly not just powering their offices system or an ERP system or what have you. But you're built into their COGS, is very different and that's we're evolving to.

Now one of the things that Amy and I spend a lot of time along with all of the other senior leaders, especially in R&D, is to think about how do we bring these 3 segments as you think of them or the 3 ambitions that we have, 3 R&D lines that we have together. Because quite frankly, over the last three years, you've seen us both set markers and deliver on those markers and make continuous progress across these 3 ambitions. And each quarter, we obviously even talk about segment progress. But the real trick is to be able to make sure that your cost of customer acquisition as well as your lifetime value are really optimized by doing the right things across all 3 ambitions. Otherwise, why have all these 3 things in one company? I mean, at some level, the theory the firm dictates that we be great at this. And to me, that's a place which we've not talked much. But I want to give you a view of how I think about that, because to me, that connective tissue between these 3 things, which by the way, Steve and Bill and others did a fantastic job of construction it during the client-server era.

Most people thought of it, we had a Windows business and server business. We had one business. They were all connected into one cycle. And so now in this world, we want to do the same. And I just want to give you a little bit of peek at it.

Now ultimately, it's about people and organizations straight from our mission and digital transformation. So let's take something like gaming. It's one of the first places where we have brought a lot of our assets together to say, let -- what can we do. Most of you view gaming as, well, Microsoft does have an Xbox business. And I think you understand the console economics and you have measured us by it. It's a much broader thing for us. We took the position we have with Xbox LIVE. The number of subscribers of -- it's the biggest gaming social network, which monetizes far superior to any other gaming social network. And that now spans both the Xbox as well as the PC, right? That was the first change. I mean, you could say, why is it that we didn't do it? But guess what, PC gaming is a growth market that. So is the console. So if you attach the same gamers across them using one social network, that's powerful.

Now we have all these new business models, whether it's subscriptions -- and now with our Beam acquisition, this is another phenomenal thing that's happening. It's no

longer anymore about just the people who are playing the game, it's also the people who are watching the game. So when do you do Windows+ G on any PC, you're broadcasting immediately. And the broadcast is being seen not just on PCs and consoles. But on phones even. And so to me, turning every Windows machine, every PC essentially into a broadcast station and increasing the reach of what people are doing is tremendous. In fact, most streaming happens on the PC, us and Twitch.

And in fact, what's happening is not just games streaming; in fact, devs streaming. Bill Was on -- today on Beam. And so it's not long -- just not about gaming. But even as soon as we launch the 3D Paint, we had people, artists who were using Surface Studio and streaming their art. So to me, being able to connect the dots around gaming, stretching it to these new forms of expression like creation, using the same social network to bootstrap that and not even stopping there. In fact, one of the things that Phil Spencer will come and talk about is how can we even take some of that and put some of the back-end services on Azure for gaming. After all, gaming is a big driver of consumption in the cloud. So those are the optimizations that we're doing. And those are the innovations that we're doing and the connections we're making with gaming. And Phil will come and talk more about that.

Similarly, we're doing this with even the professional worker. LinkedIn to me starts with the 500 million members. There was approximately 750 million knowledge workers in the world. Now for each one of them, we have the capability, starting with LinkedIn, which gives them the best ability to realize their economic opportunity, to be able to connect all of the assets, whether it's Outlook or Skype, OneDrive and bring everything that we have for their personal productivity as well as their professional productivity. So when you think about us and our Consumer Office 365 growth, it's not just Consumer Office 365 growth. But it's that connective tissue of a Windows machine running Office 365 with the LinkedIn professional network, really all coming together to help you get familiar with the tools that you will then work and also use at work. And having that ability to have multiple identities and the same tools infrastructure and similar workflows is supercritical. So that's what we're doing in terms of productivity and comms in terms of bringing these assets together.

Now one of the other places, which is again very exciting new for us, is we've always thought of knowledge worker, information workers. And I said -- talked about the 750 million people. But it turns out, some of the IT spend and allocation that's happening nowadays is not just for the knowledge worker. It's, in fact, for these front-line workers, whether it's in hospitality, whether it's in manufacturing. If you look at some the early case studies of HoloLens, where HoloLens is getting deployed a lot is in the oil rigs. It's in the front-line maintenance of aircraft.

And so people are spending top device dollars to equip their people doing high precision work in the field with digital tech to be able to bring up the CAD pictures, to be able to then fix the right part, because that has a lot of economic value for them. So across all of these, whether it's in retail or in hospitality, healthcare or manufacturing, we're now very focused on the front-line worker. And we're bringing a full suite. And you've seen this first more concretely with Office 365. But our ambitions go beyond that with even devices like HoloLens and mixed reality and

bring it together. We sometimes reference and think about this increasingly as Microsoft 365 for the front-line worker, starting with the device all the way to the service from time scheduling to communications and to be able to really help them communicate and bring them into the total, I mean -- and it's also a very important CEO agenda item from a culture change perspective, which is when you think about all of the workforce and you really want to include them and their impact amplified, this becomes a huge priority for them.

Another area, obviously, which is super-exciting -- we even had an event last week called the Business Forward event, is around enabling the professionals across every department inside of the enterprise. We've had a nice healthy Dynamics business. But now the combination of LinkedIn, Dynamics and Office 365 gives us a very different type of SaaS footprint to go and change the game. Some of the fundamental issues of this market today are these disconnected and monolithic suites, this data is not connected at all. Every application is customized differently. And we've completely changed that game where now you have Office, Dynamics, LinkedIn as one connected data graph. But the most important thing is this common data service, I can't emphasize the importance more having lived in this world, that it's so important to think about -- like most business process is always dynamic, always changing in time. It's because one of these biggest fallacies that I buy a business process system implemented once and forget about it. It's not the case. I mean, if it were that simple, we would all be happy.

Businesses are changing, changing in time. So you want to be able to have a tool chain that allows you to be resilient to that. So having a common data model that allows you to do that and then workflow engines on top of it to be able to customize the process. But not having one bespoke solution by app, is super-important. So we now have this entirety. And this something that Scott talked about in the keynote, where if you are a SaaS application on Azure, that entire thing essentially comes for free to the customer. So we even have some business model as well as programmatic changes that can be pretty dramatic amplifiers of our position in this space.

Now shifting -- so we talked a lot about the end user, both starting with gaming and consumers going to the professional user at work. But the organizational benefits. So that's one of the other fundamental things that we think about. Another triple-digit growth thing for us has been our Secure Productive Enterprise. Now that's the highest end of what we do with everything from Windows 10 to Office 365 and Enterprise Mobility Suite. And being able to bring this modern management and security along productivity and communications is a thing that we can now start having conversations with organizational benefits. And so to me, this is the peak of what we can do by empowering every person. And of course, it's ultimately about powering the digital transformation itself with Azure. And if you've watched the keynotes this morning, both the AI as well as the infrastructure and data keynotes, we've made some significant advances in it.

The first, I would say, is we are only the hyper-scale cloud provider today that operates in -- across all of the regions that many of the large multinationals expect us

to operate. We meet the, I would say, the geopolitical realities of the world where it is and where it will be versus some naive view of it, which is I think very important to customers who want to trust us and build on top of us. We also have this hybrid and intelligent edge. It's a pretty unique structural advantage and an architectural advantage. And I believe the game changed today even with everything from Azure IoT Edge to Azure Stack. As I said, I think we have a fundamental way to serve customers from oil and gas to retail, to automotive or any industry for that matter more so than any one of the other hyper-scale cloud providers that we compete with on a day-to-day basis today.

We also have some of these rich capabilities, whether they're an AI, I hope you've picked up 2 things. One is the launch of the Cosmos DB with the move to the cloud and with the changes in data and the types of data. You require new databases. And this planet-scale database that supports multiple data types beyond relational, I think, is a massive breakthrough. It's as big as SQL for us. And we're now very excited about building that out.

Also what we're doing with AI. To me, sometimes I feel that it's not about the AI capability I have in HoloLens or in Skype Translate, that's all fantastic. That sort of gives us, I would say, the muscle to build AI. But what's most important from a digital transformation perspective is what's the intelligent customers can build. What's the point of having parlor tricks that we can do, if they can't, in the context of digital transformation? So that custom layer -- Harry talked about custom speech, custom vision, custom text. The ability to build on top of what we have. But to customize it for their acoustic models, for their computer vision needs, I think, is going to be breakthrough. And so between the new database and this custom AI layer, we feel that we have these higher layer capabilities that can power the data transformation. Then, the last point we don't stress enough. But ultimately, as computing becomes more distributed, it becomes more complicated. And developer productivity, everything from that CI/CD, right, Continuous Integration/Continuous Deployment, the advances we've made with Visual Studio and Visual Studio Online, it's like a SaaS service for developers. And once you get beyond sort of the ZIP codes of San Francisco and Seattle, they matter a lot. When you want to empower the developers everywhere, you need to be able to give them that pit of success that they can find and stay in. And that's what we've always done traditionally at Microsoft. And we plan to do that as a big differentiator of the Azure Cloud.

So that's really a set up for you to think about the value props that we're creating for people and organizations, how we're connecting the dots between our 3 ambitions so that ultimately it's about improving the unit economics of everything that we do, whether it's in the cloud, whether it's a SaaS service or whether it's our device by bringing these assets together and in response to this digital transformation opportunity. So hopefully, that gives you a bit of a flavor.

And I think next you'll have Judson come up and talk a little bit about a couple of customers. And I'll come back for Q&A. Thank you, all very, very much.

Operator

Please welcome Judson Althoff, Executive Vice President, Worldwide Commercial Business.

Judson Althoff {BIO 18004989 <GO>}

Good afternoon. So I have 3 things I really want to talk to all of you about to provide some objective evidence around our commercial growth and the progress and momentum we're seeing in this space. The first is how digital transformation is really fueling a lot of momentum for our commercial customers. The second, how when enterprises are choosing to go to the cloud, they're choosing to go to the cloud with Microsoft based on the investments that we've made in security, data privacy and sovereignty and on a true global scale. And the third, how commercial customers are really becoming the digital partners of the future and these partnerships are actually creating very unique opportunities for us in the marketplace.

So Satya talked about a lot about digital transformation and about how our 3 bold ambitions or our 3 core areas of innovation compose together to enable digital transformation for customers.

I thought what I might do is at least explain what digital transformation means to us, because if you hold 100 people into a room and asked them what they thought digital transformation is, you'd probably get 100 different answers. To us, it's very simple. It's a wave of business innovation that is empowered by cloud technologies like the Internet of Things, augmented reality, artificial intelligence and data that enables businesses to grow better and faster and more efficient than ever before. It has impacts across 4 core areas of our customers' businesses. One, it's driving new innovation in how our customers engage with their customers. It's also changing how our customers empower their employees, how they optimize their operations and how they actually transform their own products.

I want to talk to you a little bit about the impact that is having across industry. The logo slide you see behind me here is just a reflection of the customers where we've driven our digital impact over this last year. And from aerospace to agriculture, from Boeing to Land O'Lakes and Ecolab, to the world of creating candy in Hershey's realm, to counting the beans with UBS, we're having a material impact in growth across all of these industries.

So recently, we announced a partnership with UBS, where we've taken their risk management portfolio, all of their software assets and put them on top of our cloud platform to enable their risk management solutions to run 100% faster than they've ever run before at 40% the cost. This extends the ecosystem of risk management solutions they can provide to not only their employees. But their entire partner portfolio that leverages their digital assets.

In the realm of Hershey, I mentioned how we can actually digitally transform candy. We have taken the internet of Things and enabled Hershey to create the Internet of Twizzlers by actually IoT enabling the machines that create candy. Sort of almost

laughable, yes. It allows people to actually extrude licorice like never before. But the business impacts are real. In fact, Hershey is now saving \$0.5 million per batch of candy they produce as a result of using AI to predict the formula in which they produce the candy, the temperature, the humidity, the speed and operational settings of their devices. It's dramatically improving their operations.

We also announced a few weeks ago a partnership with Maersk. Maersk has been a commercial customer of ours for many, many years and we've provided them with all kinds of technology assets. But what's new about our relationship is we've taken the software they've built. See, many customers are actually becoming ISVs. We've taken the software they've built, put it on our platform so that they can actually change how they do business. Rather than just shipping containers from port A to port B, they can now deliver quality of service solutions and guaranteed SLAs across the entire supply chain and logistics business that they operate. It's also opening up new partnerships for them as well as they extended to keep people that create smart cities and smart ports. And so it's completely changing how they do business with us as well as how they do business with their partners.

I want to actually drill into what it takes to drive these scenarios to market and really create an impact with customers, because we've been doing a lot of work to effectively retool our sales force to really make an impact with customers. That's truly different from what how we've operated in the past. So I want to take you through a couple of in-depth scenarios.

The first is with Land O'Lakes. And so when I say Land O'Lakes, you say -- thank you, butter? Thanks for being a part of the survey. And so you might say. So Judson, how would you digitally transform butter? Well so in fact, if you actually see, if you deeply understand Land O'Lakes business, they of course are in the dairy business. But they also produce feed and seed for farmers. They are a coop. In fact, the farmers that they serve actually own their business. And so we've been on a journey with them for multiple years about helping them reinvent their company from the type of talent they recruit into their company to how they engage with farmers, their customers, to how they actually even reshape their business to modernize and capture the value of the data about their business. And so many of these digital scenarios, the data about the business actually becomes more valuable than the business itself.

So a bit of a time line and the journey that we've been on with Land O'Lakes. We started them, as I said, several years back in helping them to rethink how they attract millennial talent into a company that's been around for many, many years. So the most important thing for them first was to get productivity in the cloud, productivity enabled across every device. Whether that be how they simply communicate over e-mail, how they collaborate with video and voice, to how they share information across their enterprise social fabric. From there, we went on a journey to empower them with our Surface devices. And if you think a little bit about how this journey maps to what Satya unfolded earlier, it's very similar. You think about the need for customers to actually empower their employees through these user -- per user productivity scenarios that are very personal. That's, in fact, the journey we were on with Land O'Lakes.

It became very, I would say, revolutionary to them when we started actually analyzing their product. And you might once again say, okay. So let the cat out of the bag here, how do you digitally transform dairy? Well it turns out after working with them to better study their business and understanding the data that they possess, they have decades' worth of satellite imagery for all of the farms that they support around the world. So we took all the satellite imagery and loaded it into the cloud, then put an intelligence fabric on top of it so that we could start to predict the hybrid seeds and the volume of seeds and soil treatments that would best produce crop outputs on a given plot of land. And when I say a given plot of land, down to 1 square meter of dirt in fact. From there, we actually could create a prescription for how you would variably plant a farm. We then work with them and John Deere to take these prescriptions, download them into semi-autonomous driving tractors, variably plant farms with the hybrid seed prescriptions from the cloud and the intelligence that we produce.

The net impact and output is pretty astonishing. It turns out an average acre of land produces about 130 bushels of corn per acre. Using this technology, we can produce over 500 bushels of corn per acre. So we've improved the impact and their output by 3 to 5x, depending on the farm that we work with them on.

I want to reflect again about how important it is strategy that Satya articulated relative to where we're put our R&D investments and how that directly applies to customer engagements like this. Satya talked about Cosmos and the need to be able to harness data. He talked about intelligence and intelligence at the edge. These things compose together in a very differentiated fashion for us at Microsoft. Intelligence gets all of the attention these days. But it is in fact data that fuels intelligence. In fact, if you think about it, a system can actually be as intelligent -- only as intelligent as the data over which it reasons. And If you don't invest in getting your data estate in order, you can have the most elaborate AI strategy and all you will do is make mistakes with greater confidence than ever before.

And so this notion of being able to harness all of the data, the traditional relational state, the unstructured data in the cloud, what we're bringing to bear with Cosmos is actually what brings this solution at Land O'Lakes to life.

We then moved to just variably planting farms to actually changing the type of food they produce for cattle and for livestock. We've taken the same kind of AI algorithms for the data that they have and can track the life cycle of a cow and the dairy output that cow has produced based on the type of feed that they're given and the hybrid feed that they're fed throughout their life cycle. And again, we're having a massive impact on the output and the product that they produce.

Finally, the latest state in our journey with them is we're actually using augmented reality, our HoloLens technology to help not just farmers in North America. But farmers in remote locations around the world, better understand how to use the same technology. So we literally have farmers in Africa participating in an augmented reality session, with farmers in North America to compare the seed yield output scenarios that we're driving to market with them.

So you can see this is a very different type of business that we've ever had with our commercial customers. It's not just about selling them product. It's about actually changing their business outcomes, their digital realities. The net of it, though, when you think about the financial impact and how Satya reflects upon this growing total addressable market that we have now is just that we're actually doing twice as much business by revenue with Land O'Lakes as we've ever done before. So there is a real economic bottom line impact to our shareholders as a result of empowering our customers to achieve more in their own reality.

I thought I would actually share a video with you, because to me, the most astonishing impact is actually when you hear it live from the farmer, what's the impact from the farmer. So please roll the video.

(presentation)

So it's a good story about how what was once just a commercial customer relationship for Microsoft has actually become a true partnership. We're helping Land O'Lakes take their solutions to market, sell more effectively. And as a result, they've created a precision agriculture business in excess of \$13 billion. So when I say partnerships are really fueling our growth, that's happening from Land O'Lakes through to Boeing, through to Maersk, through to UBS across industry.

I want to talk now a little bit about how we've learned from this experience to evolve and actually scale it more effectively to many customer scenarios. Satya talked about the connected car. And we have, in fact, struck agreements with BMW, Renault-Nissan, Toyota, Ford and Volvo as a result of our digital efforts. And what we've learned through the engagement at Land O'Lakes is that it takes a different kind of sales force, frankly, to interact with our customers. You have to deeply understand the industry that the customer operates in. You have to provide much greater technical expertise. You actually kind of have to roll up your sleeves and code alongside the customer to help them along this digital journey.

So through our learnings over the last couple of years and engagements like Land O'Lakes, we've created a Microsoft digital organization that goes and works with customers like Volvo.

And so you can see on the timeline that we have with Volvo, it's a much more compressed engagement cycle with very much the same kind of output. We've been involved here now really in depth over the last year. And we started out with a precision envisioning session that leverages assets that we called the Book of Dreams, that talk about how across a given industry you can leverage these technologies to really change your business and provide material impact. From there, we decided the most immediate impact we could have for Volvo would be in how they design products and bring them in market with greater speed than ever before. So here, we turn to HoloLens and augmented reality again, which enable them to do much faster turns and iterative refinement on the product design. We then actually struck a partnership, once again, where we've embedded Skype for

Business inside of the car to actually transform the driving experience in the semi-autonomous modes for their cars. The results for them have been very impactful. The S90 product came to market much faster than any previous product they've ever released. They've received all kinds of industry accolades for the innovation they've brought to bear. And once again, it is a partnership. So again, it's really 3 core things: digital is fueling a tremendous amount of growth for us. In fact, enterprises, when they're choosing to go to the cloud are choosing Microsoft because of the long-term investments we've had with them, the scope and scale, the breadth across industries, the security we can bring to bear, the local data privacy and sovereignty capabilities we offer. Then the partnerships that we can create, really again, taking our commercial customer relationships and creating the digital partners of the future, are really what's transforming our growth. So that's all I had to share with you. Next up, Phil Spencer, will talk about our Xbox strategy. Thanks.

(presentation)

Unidentified Participant

Please welcome Phil Spencer, Corporate Vice President, Xbox.

Phil Spencer {BIO 16406265 <GO>}

Thank you. Thank you for that. I appreciate it. So Amy and Satya said if they were going to let me come out here I had to wear a collared shirt, no gaming T-shirt. So my counter was I'm going to start with a gaming video. So thanks for putting up with my gaming video. I'm really happy to be here to talk about what we're doing at gaming at Microsoft. And why I actually think it rides a lot of the same trends that we see going on at Microsoft that's causing all of the great growth that we're seeing for the company.

Now I don't know how many people in here actually track what's going on in gaming. So I'm going to start with some just basic numbers. And then I'll get into actually what we're doing in this building off the strengths that we have.

So gaming all up is a massive business. So we're 2 billion gamers on the planet, over \$100 billion spent in gaming, since 2012 the gaming business has doubled. Basically, any device that somebody has, when Satya talks about the smart edge, if the device has a screen, gaming's probably the #1 form of monetized content on that device. And definitely one of the highest use and highest engagement sectors. So for us, at Microsoft, when we thought about our path forward, we said we came from a place of console. We came from 1 device. But we really started look at the assets that we had in our business and realized that, obviously, the #1 asset that we have is our customers and the engagement that they put into our network, that is Xbox LIVE. What we're seeing going on now is pretty remarkable, Satya mentioned it earlier. We're seeing game broadcasts just grow incredibly quickly. In fact, if you look at a major eSport competition today, the finals almost certainly eclipse any sports finals that you're looking at today, whether it's the NBA finals, whether it's the Premier League finals. If you look at something like a League of Legends eSport final its broadcast numbers, it is truly incredible. If you look at game video all up, it's bigger

than Netflix, it's bigger than Hulu, it's bigger -- it is just incredible the amount of time and the amount the passion that gamers put into the activity, the hobby that they have. And for Microsoft this was a great opportunity for us to ride that digital transformation.

When I think about a gamer's journey, I'm going to start on a slide that has none of our content in it, just to think about. Gamers come into the gaming cycle through many different devices. Consoles clearly one of those. The most engaged customers go out and buy a bespoke piece of plastic to plug into their television to go play video games. But millions of people are obviously playing games on their phone, on their PC, any device that they can get, because they want to play content, they want to build great games. And content is what we believe draws people into our cycle. And this is why we're investing in great first-party content like Minecraft, like Halo, like Forza, Hot Wheels pack shipped today if anybody looked at it, it's really good, Hot Wheels is great.

Driving usage into our social network, that's where people become sticky. They make friend connections across our network. The entitlements of the content that they own live in our social network. Then they start to build loyalty. If you think about a typical service graph, you would call this the engagement cycle. They invest in who their friends are. They invest in their persona. They become very sticky in your network. Your dow number goes up because the persons coming in. This is where they communicate with their friends. It's amazing on Xbox Live today when I watch, we see this spike when kids come home from school. And they get on Xbox Live with their voice chat microphones on. And they don't all play the same game. They actually just sit and discuss, it's their hangout, it's their digital hangout. Now some of them will go play Minecraft together while some maybe go play Call of Duty together, then they'll come back, then they'll go off and play different games. But it becomes where their friends, their digital friends live. And where they stay connected to them. And of course, it starts to drive commerce. And once you start getting the commerce flywheel going, a magical thing happens. New content developers come into your cycle and start bringing new games to your network and the cycle starts all over again. New hits get created in your flywheel. And the flywheel accelerates. Now when we look at this graph from our perspective, Xbox LIVE is the thing at the middle. Xbox LIVE is the component of the graph that is accelerating. And you hear it now. And Amy and Satya talk on their quarterly earnings. We talk about our MAU number on Xbox LIVE. What usage are we driving. And is that number going up? And it is. But also a magical thing that is happening that doesn't show up in that number, it's actually growing across all devices. We have more engaged console payers than we've ever had. But we also have more engaged PC players. And frankly, getting our own Windows customers to connect on our own gaming service should just be table stakes for us. But how do we get these people? People on iOS and Android to connect into our gaming network. Well if you look at game broadcast, usually over half of the viewership is on a mobile device. This is somebody who is actually watching gameplay on a mobile device. And we have a clear opportunity there to connect the cycle and actually make those monetized engaged customers in our graph. But obviously, you also have huge content like Minecraft that's ours that does incredibly well in the mobile space. We invest in our first-party content to kickstart the flywheel in new areas. And owning assets like

Beam and Minecraft at the same time allow you to create new interactive innovations between the viewer and the player, which creates both new fun. But also new monetization opportunities for the streamer themselves and for the content creator as more people play.

When I talk about loyalty, I also talk about -- this happens to be my avatar on Xbox LIVE. I am P3 on Xbox Live, if anybody wants to add me as a friend. But it was amazing thing when we added avatars because we got a lot of feedback from our core customers before that nobody's going to create an avatar, nobody cares about this thing. This became not only something that everybody did on our network, it also became a really good business selling avatar items to let me put my T-shirt of my favorite football team on my avatar because that becomes my digital persona. And I want you to think about when we look at some of the trends going forward in the MRAR space. And what it means if I actually have a representation of me digitally and how that might flow into a mixed reality world. That's going to be very important to us. And the commerce has started. In the last quarter of calendar year '16, we announced we had our first billion-dollar monetization quarter on Xbox LIVE. And the great thing that we see is developers have figured out not only how to sell front-line games on Xbox LIVE but monetized into the tail. So as engagements going up on these games, the monetization is also going up. The fundamental way a game company drives their business is about monetizing high-value engagement on the network and Xbox LIVE is the core of that. So you see these great companies bringing real hits to our business. And we are a major retail partner for these companies, even forgetting the fact that we sell a console or that we sell our own games. These are major channels for them selling their own content, which then means the next hits come in. We have our big show, E3, which is the second week in June. We'll stand on stage and we'll talk about the next wave of big hits that are going to come into our gaming graph. So this is how we think about it. We think about monetization, drives developer power, because developers want to come where monetized customers are. We will continue to invest in our first party opportunities to accelerate the flywheel all leading to Xbox LIVE growth. The secular transition right now that we see from broadcast to play, more broadcast hours will be viewed this year than gameplay hours. And both numbers are actually going up. So you see this expansion of engagement, not just through players but also through viewers.

The nice thing about gaming for us as well is when you think about new technology trends, things that are happening whether -- and I've been around Microsoft and gaming long enough to remember, whether it's AI, whether it's 3D rendering, whether it's graphics, whether it's just what a GPU and a dedicated piece of silicon means in a device to go drive high resolution. Gaming is always at the forefront of engagement and usage because we know those customers are early adopters. So when you think about what we're doing in mixed reality today with HoloLens and our Windows mixed reality shells that we're bringing, you'll see more of that at Build, I think the gaming engagement that we have is going to be the killer asset that we have to help accelerate our move into these spaces. And Metaverse isn't something we've talked a ton about. But when you think somebody living in a virtual social network like Xbox LIVE. And then that environment becoming actually physical so that I walk into a room, when I log into Xbox LIVE and I see all my friends' avatars in

that space and I'm actually able to interact with them directly, the gaming assets that we've built, the friend network that we have the personas that people have created on Xbox LIVE will be incredibly important.

Games as a service I talked about. And it's becoming more and more true. Now the retail game business is still doing well. And you see huge games running -- but huge games running and doing a great business. But you also see tremendous gaming assets that are built in a free-to-play model where they rely on that ongoing engagement and Xbox LIVE is the oxygen that is able to bring users to those customers -- to those games regardless of what device they're on. And the broadcasting capability is critical. And Satya mentioned this. The line at the bottom is another thing that we probably haven't talked enough about. We usually talk about the consumer-facing features of our Xbox LIVE service. There's a whole another side of this which is our developer-facing features. As developers want to build these games, sometimes small developers, 3 people in a garage that have a great game idea, they now want to build service-based games. They want to build service-based games that are able to reach tens of millions of players and potentially hundreds of millions of viewers. And on the back of the work that we do with the Azure team and Xbox LIVE to create a developer surface for Xbox LIVE, we can unlock the capability of 1 developer or a room of 400 developers with the tools that we bring. So we're investing a lot in enabling our Azure game services to reach every developer that's out there using our learning on Xbox LIVE and the needs that our developers have in the area of broadcast and gameplay. And the gaming business is riding the same secular transition in digitization that we see in every other business. And the position we have with Xbox LIVE, with our first-party assets and our ability to reach a customer on any device that they're on, I think will be a strong growth for us in the future. So that's what I had.

It's now my great pleasure to get to introduce Amy. And I want to just take one second because I've been with the company for a long time. And I think there's a lot that's happened in the company in the time that Amy has been our CFO. I think she's done a tremendous job as our CFO. She is a pillar of me being at the company and the strength and the performance that the company has delivered over the past few years. So please, strong welcome for my friend, Amy, to the stage.

Unidentified Participant

Please welcome, Amy Hood, Executive Vice President and Chief Financial Officer.

Amy E. Hood {BIO 18040963 <GO>}

Hello. I didn't have Phil just come talk about gaming because he said something nice. It's actually -- and I'll get a chance to talk about it. We sometimes pick topics for this audience that we feel like you may not understand the structural importance of enough. And why they're so important to us and gaming is one of those. So I hope you got a feeling of how critical we think it is of an asset to the future.

I'm going to quickly sort of talk more financially, not surprising, about some of the trends we've just talked about. Our focus over the past few years has come from the

ambitions that we talk about, ambitions for us also happen to be reporting segments to you. What I would say though is really the acceleration, however, doesn't come from their individuality, it comes from their overlap. And so I think what you're going hear me and you've heard Satya talk about it is really a pivot about how they tend to work together to make a more important flywheel that builds on itself.

If you think about people, you sort of used 2 frames, right? People and organizations. One of the fundamental construct of that is selling per user. And there are lots of things we sell per user. Let me walk quickly through the consumer ideas that we sell in that value. The first one is really Windows. And Windows in its broadest sense. The goal is for us with Windows has been quite simple over the past few years, to grow users and grow fans. Windows 10 has higher satisfaction than any previous version we've had of Windows. We're incredibly proud of that and the journey we've been on. The progress you see in the gray line of modernizing, that install base, particularly in consumer is fundamental to creating opportunities for our services to extend beyond Windows. Things that you might think of as extending beyond Windows, particular to the OS, would clearly be things like the Store, search and search and its relationship to the browser. And hence, all the investments we've made in Edge. And much of the progress that we've made in Edge you see in our search growth.

What I would say here is I think about really Surface as a fundamental part of what we do to move Windows forward. Surface has stood for creating new categories. The 2-in-1 category, Studio with an all-in-one that's beautiful, that's optimized for ink and creation or whether it's the new laptop from last week, we've been announcing things such at a pace I'm losing time horizons, that one was last week. And what it says about the future of an OS. And so when you think about our hardware, think about it as naturally showing and showcasing the innovation we're making with our software.

Then you think about what's the next thing we sell per user, right? A natural extension. The first and the one people think about the most is 1 of the 2 cores that we have in terms of especially on the consumer side, consumer vision. It's of course productivity, right? When you think about what we doing, you think about productivity. And when we were here two years ago, we were really talking about the transition to the new subscription model and when we will get through it and would we get through it? And the answer is we're through it. And we feel really proud actually of getting to that \$26.2 million -- 26.2 million person subscriber base. When you think about that, that's another networked asset, right, that can take advantage of the Office graph and add value to the Office graph. And I think at this point, even when you think about the growth curve, we're thinking about here on consumer, you have to think this is happening even with overall consumer PCs in decline. So this really means attach is doing quite well. We're continuing to see subscribers, we're seeing good renewal rates. And we actually feel really good about the value we've added to this business. And of course, its relevance across multiple end points even beyond Windows itself.

And we next talk about the next fundamental part of productivity, which was really the investment we've made in LinkedIn on the members side. Think about as LinkedIn having 2 fundamentally different things, right? It has member value. And then it has business solutions value. And we'll separate those for this purpose. This is really saying we have 500 million members. We announced that last Monday as well. But really, when you think about the health and vibrancy of any network, it's not the total number, it's whether or not the sessions and engagement is growing. And what you can see here is that sessions are actually outgrowing membership. Engagement's getting better. We're adding value. The team is incredibly focused on adding value to the member. And while member growth is important, it's really about their engagement and what we can add to them. And if you think about a slide Satya showed where it shows the Office 365 graph sort of a LinkedIn data node as well as -- you combine nodes in your mind, you can see the potential to even add more network and valued assets to the 2 endpoints I just covered. The final one. We kind of have 2 cores, if you think about it, what we're uniquely good at doing when it comes to the things Satya talked about. You have to really think about your competencies. The second one, in competency of bringing this networked active user bases together is gaming. When you look at this graph, think about the top as being our total growth we kind of expect overall in the Xbox MAU. What's interesting, really, is the curve and the acceleration we've had -- this is two years ago. We had nothing beyond the console, nothing. We're already at 25% of our Xbox user base, really using Xbox and engaging with it beyond the console. All those other endpoints that Phil talked about. And frankly, with the extensions and some of the thoughts we have on the importance of mixed reality to this business, I think, that number, obviously, we think can go to 40% and I think the real question is when does it get to a perfect overlap where no one will only play with a single endpoint ultimately when you think about the extension value and the networked assets. But you can really see our confidence in our ability to land that broader strategy. And some people know, this is already \$110 billion market, consoles, games and the services that relate to them. Growing really double digits. So when you think about us, we've got a multibillion business that's profitable and growing profitably. And the foundation that lays to add on the new business models, whether as Phil mentions, ads, subscriptions, selling gaming in that direction, whether it's the ability to think about ARPU additions through low-value watchers, whether it's the video models that we have through assets like Beam. I think it really opens up the possibilities that market far beyond a \$100 billion that we're already able to compete very effectively in.

Now let me pivot to more of the model of the org, adding value to organizations. And of course, we're going to go right back to Windows and per user value, right? It all starts at selling user value. And then we'll extend that to departments and ultimately to app development. But the first one, which is what Satya talked about, as a secure productive enterprise. In our world what a secure productive enterprises is, is generally, one, think of it as running Windows 10 in a modern state, taking advantage of security and management, maybe using our unique hardware assets as an instantiation of what's possible. For example, the Surface Hub a large screen device, right? It's a natural and only ability for us to create a category that creates a more productive workplace. You can think about it, of course, as Office, right, Office 365. That's a secure productive enterprise asset. Think about it as our most modern

tools being used and deployed together to have the most secure and manageable and consistent environment. And we shortcut that to call it the secure productive enterprise. The first component, obviously, is Windows.

When you think about Windows, we've combined 2 things because I think of them as similar, right? It's sort of what's our OEM Pro business, right, selling commercial devices and selling our own devices and into commercial businesses. Whether they want to buy Surface for a certain group of users and not for the entirety, whether it works better for mobile versus not, it's really about building, again, showcase devices that extend the building. We've done a very good job of seeing pull on Windows 10, we've talked about that. We've seen growth in the market. We continue to see very good endpoint demand for Windows 10. And I think that OEMs have seen it too in terms of their confidence in building machines in advance of what we continue to feel as a pretty strong global, actually, environment in the commercial side.

And on top of that, what I've also added is we added a new KPI this year. And I'm not sure everybody still understands what it is. So I thought I would take an opportunity and explain a bit more of it. It's Windows commercial products and cloud services revenue. What that really means is the part of our Windows value sold into the enterprise that looks far more annuity like. It's sold more traditionally in our EA, has the same concept of adding multiyear value. It tends to give you certain upgrade rights. But when -- the more important things that have resonated far more with customers have been things like the advanced threat detection tools that we've launched -- we shortcut it and customers often refer to as ATP. That value is what we're seeing a big transition here from what used to be even a nonannuity business for us to a consistent double-digit annuity grower when people see the value that we put into some of our security and management products. It's, I would argue, a very compelling price point compared to many of the vendors that we compete with often in this space.

Next, we're back to Office. I think two years ago, I showed this exact graphic. And we said this is what we felt about both growing our install base and moving the install base. It's just to orient you, right, Office 365's at the top. It's tough when I use the shades of blue, we're sort of a blue-themed company. That's the cloud component of the install base, the annuity component is next. And this nonannuity basis at the bottom, right? And so when you think about where we are, we're actually tracking ahead of where we said. And frankly, if you were to look at this graph, this is at 50% currently of our current install base. So I think we feel very good about the transition about the pace of the transition, about the deployment numbers. That's the \$100 million we refer to publicly and Satya often references in terms of moving our customers forward to this modern, secure productive enterprise. And so I think when I look out, I feel pretty confident in the trajectory we're layering out here. But I also want you to see the confidence in continuing to grow the install base. Install base growth for us is in many things like I think you just saw Satya talked about, front line worker expansion, right, continuing to make progress there. Now this doesn't actually talk about room for ARPU improvement, right, that's not what this graph is about. This graph is about moving both growing the install base and moving the install base forward. When you start to think about our ability to deliver the LTV, we

showed LTV chart also -- these all kind of blend together some days, the same LTV chart by moving certain customer types. What I would say today is not only am I more confident in delivering on every LTV scenario I showed you two years ago, I think I may be increasingly confident as we start to see the results in early value props out of E5. It takes a while for them to land just the way it does with any enterprise cycle. But I really do feel our opportunity for ARPU expansion especially in the customers that we've already moved to E3 to confidently move them to E5 gives me even more confidence that the LTV numbers can continue to even get better than we showed two years ago.

I also talked about Exchange. Exchange, you'll notice, I think this is one where many people wonder, could you still grow the install base? Again, just like they wondered about Office, not only have we delivered on install base growth, you've seen it, we're a double-digit install base grower. I do think we continue to have opportunities as well in Exchange for many of the same scenarios we talked about. I do think we are on track to do a little better maybe than we thought we'd be. We've actually accelerated the growth in the past year or so. I still think even when we continue to add install base, we can continue to still have that cloud transition up into the 70s, which I feel quite good about. I will call out, in both these charts, the nonannuity component continues to exist, right? I mean, there continues to be a base there that slowly comes down over time. But I do want to realize that it won't go -- it's not this sort of -- it goes away on any given day. This is a bit about the life of any product, has a bit of a longer tail.

Now I'm going to talk and move from what people think of is that Office per seat concept to a slightly different per seat concept. Windows and Office, you think about them as covering everybody, right? In most entities it's a broad breadth product, you tend to move organizations in lumps, right, with broad customer agreements we happen to call enterprise agreements. Quite differently is our Dynamics investments plus the LinkedIn business that's more of a business solutions. Sale, right, selling value to HR professionals or to sales professionals. When you think about this chart, first of all, we have a Dynamics business, it's roughly \$2 billion, growing consistently double digits. But what's really changed is the modern, actually, product road map that we've delivered on. We now call that thing, for consistency, Dynamics 365. It's not just the CRM suite tools, it's all the way through, including our ERP solutions are now cloud based. We sell, not in large suites. But more in a focused role-based model. The value is quite different. We feel very good about our value prop. When you think about these charts, when we add in the opportunity we have with LinkedIn and the announcements that we made 2 weeks ago right before earnings on some of the integrations you'll see, such as Dynamics 365 for sales plus LinkedIn Sales Navigator. The second product we set in motion that would be ready for July would be Dynamics 365 for talent plus the LinkedIn HR solution. We'll both be able to sell those to end customers. And so you really think about that as adding, I think, some accelerant to our ability to grow on both sides. And this should be over a \$5 billion business for us in FY '18. That is a very meaningful foot in the business solution space. And I think our ambition here is quite high and our expectations for growth are also high. I think we have a unique worldview. And you also see the distinction here is in that combination plus the acceleration wound up with about 70% cloud business when you look out a year, it will already be a pretty modern install base.

Now let's go to Server & Tools, as I guess people referred to it, ancient history. But I think that's what I often still call it, dates me. What I would say here is I think the big question people have always had is was this going to be a transaction business where you replaced a consumptive workload that we used to sell as a server with Azure revenue. I feel like with the CAGR that we felt like we've delivered in this business, which in a constant currency basis, I feel is durable, I think is the word that I used on the earnings call, durable, double-digit revenue growth. I think we have shown, really, the power of having an intelligent cloud with an intelligent edge. Think about that as hybrid shown as revenue growth. And I feel very good, especially if -- and I would urge you to spend a little more time seeing that 2-hour Build keynote-ish from this morning and watching all the value that got landed, whether it was Azure stack, whether it was Cosmos DB, or frankly, whether it was some of the SQL and database value you saw. I think we feel very good about the continuation of value of the intelligent edge, particularly in this business.

Generally, we have talked in our business about a run rate. And I love run rates. But I thought because we talk about gross margins, we would show the revenue in quarter, this is actual nonrun rate revenue. We will have, as we look at the guidance that we gave, we'll be close to a \$15 billion commercial cloud business this year at roughly a 50% gross margin. We feel like we've made a ton of progress here, incredibly proud of this business. And I think in many ways, when you look at these growth curves, this is growing 55% this year on a very big and strong base. And so I think when you try to get a sense of our aspirations here, I think you can get a sense. I would also say about our \$20 billion run rate target. It's still our target. We'll still get there in FY '18. And we'll still report on it. So you know when we will get there. That's what I call accountability. But I do think when you get to this size and you start getting as close as we are, I think it's easier just to show the flat-out revenue numbers. And so there you go for comparability as I know you all try to build your models into summing columns. I think you try to make them sum. But some days.

Let me talk about a little bit about then why all these metrics that we call KPIs, why do we pick them? Frankly, what you just saw me do in all of that presentation was explain why each of these matter. In your mind if you can almost think about which ones relate to each other in a per user motion, they don't correspond to our reporting segments. Many of our motions are fundamentally connected to each other but not connected within a segment. And so the appreciation of what really moves together, right? Windows commercial deployment absolutely can move the needle on our Office 365 commercial MAU. The motion of updating your enterprise to a modern, secure production enterprise absolutely will accelerate user's adoption of Office 365. The absolute same is true of the logic we've built with Dynamics 365 and its relationship to Office or its relationship to Azure, all the Dynamics components are built on Azure, use Azure, the extensions of them, encourage ISPs to build through Azure, all of those lands, right. But they land in productivity and intelligent cloud. And so the interrelationship that we see of these assets, I just felt like was more appreciated if you kind of use a frame of saying what do I sell per user, the secure productive enterprise. How does it relate to our ability to sell more compute, which you all think of as Azure, or more value add. And so these are why we pick them. But I wouldn't say they move individually. They move in relationship. Our commercial cloud we talk about is one thing because frankly, our motions of

selling are one thing. And when I think about the results we've seen in Azure this year, which I'm incredibly proud of. The investments we've made in the sales engine, think about the stories -- they're not really stories because they're true, that Judson just said, the customer examples he gave were never about this is an Azure example couple, this is an Office a couple, this is an Dynamics example. And oh by the way, here's a HoloLens example. They were fundamentally about interconnectivity of these assets. And so I hope if you take away anything from today other than trying to figure out the scale of my graphs, that's -- I know, there's like tools that I think do that for you. So I'm just going to rely on you to go for it. But what I would say is what I hope is that you understand the scale we're operating at, our ability to continue to improve our margin structure and the interrelatedness of both our motions in the field and our sales maturity that we've grown as well, as how that shows itself in our results.

Now I'm going to move to what everybody's been waiting for, which is accounting, because if you're not excited about accounting, you're going to be after this. Oh, shape of (AFT), this is what you really waited for, the shape of FY '18. Revenue growth, obviously, will be continued to be focused on and dependent upon our commercial cloud strength. Been true for years, continues to be true again next year. I will remind you as you are building out your models, we still have a headwind on a phone comparability issue for H1. After H1, it goes away. We do expect the company gross margin to decline a little bit. That is from commercial cloud. But also we have a full year of LinkedIn amort in the model. And so I would encourage you to include that as you think through the structure. We have hardware launches, one of which Phil referenced which is Project Scorpio. That tends to have and can have an impact on company gross margins in a given year even if the structural improvement in every segment increases. Commercial cloud gross margin should continue to improve, I show you the graph, even as Azure mix increases, which it will. Operating expenses will have a full year of LinkedIn. We will continue to invest in LinkedIn and our commercial cloud to support and because of the customer engagement we see as well as the opportunity we see to deliver and continue to deliver top line revenue results. FX, hard to predict. But based on rates now, will have a bit of a headwind in H1 on revenue, really no impact on the OpEx side. Continue to remain confident in our LinkedIn impact for '17 and '18. And capital expenditure year-over-year growth should be similar to '17. This is when we plan quarter-to-quarter. You saw the impact this quarter, we were light -- could be -- we said it can move out. This one this early, it's similar. Will continue to evolve and see what we need to do.

Now, accounting. Two new standards got adopted this summer, right, when we start FY '18. First and the most importantly, neither of them impact free cash flow. Neither, right? Now, the leasing standard I'll do first it's on is the far column. It only impacts the balance sheet, okay? The revenue standard, which I think is the far more meaningful one as you try to work through the impact on the P&L. We did disclose in our Q3 10-Q that it's for a year ago, which is the only one we could completed to give you the estimate for, about \$6 billion of revenue impact. That \$6 billion is primarily, right, the Windows 10 deferral that we adjust for non-GAAP already. So that adjustment would then go away, right? There is some impact to both the productivity and business process segment as well as intelligent cloud, because of this component here. If you sell a new license on-prem in a multiyear agreement, now

that's a -- I'm narrowing the scope for you a little bit, right. So if you sell a new on-prem multiyear agreement. And you have a new license in it. So it's got to be not just a -- not a renewal, renewal there's no impact, a new license, you have to account for the license component up-front, all right. That will have some impact. It particularly has impact quarter-to-quarter because it depends on the timing of when your EA has come up and get signed. And it's not consistent through the year. So what it will do is introduce some quarterly variability. But over the course of the year it's a much smaller impact, right, because it would net much smaller than any individual quarter.

Now let's talk about how we're going to work you through that transition, just so everybody can plan. In July, we will report, obviously, Q4 in the old way because it's still the prior year, right? We will file our 10-K under the old standards, right? We will give guidance using the old standard so that you can kind of understand comparability-wise what Q1 looks like, okay? Then August. In August, we will provide two years quarterly of restatements. So you'll have all of '16 and all of '17 to start to see the impact. We will also convert the guidance we gave to the new form. So you can start to see -- you'll then have -- that will be 8 quarters plus you'll get the guidance converted and you can start to see trendlines. Then, in October, we will only report in the new way, right. For some of you that have been covering the company for a while, this will look familiar to how we rolled out some of the reporting segment changes because of its familiarity, it tends to work a little bit easier, it makes Q4 cleaner and the guide cleaner. And then any reconciliations cleaner. So this is just so you can prep as you think about July and not trying to do all sorts of conversions in a very, very busy time for all of you too.

Finally, thank you. I've been in this job four years. Feels like just today. But I'm -- it's been really an honor to represent you all. I think of it that way. I represent your concerns, I represent your insights, both inside the company as well as to our board and I think it's -- I've learned a lot from you, from all your pushing. But I also think -- and I'm really proud of this company for delivering what it said it would deliver to a couple of years ago. And I feel great about that. And I thank you all for your consistency and support. And so with that -- what I'm going to do is have Satya is going to come join me on stage for Q&A. Judson and Phil will be sitting out here in case you have specific questions for them as well. So let's flip it over.

Questions And Answers

A - Amy E. Hood {BIO 18040963 <GO>}

All right. I think, we're going to have some chairs. And Chris, you're the host with the most. Great. Awesome.

A - Chris Suh {BIO 17955231 <GO>}

So while we're setting up, there will be 3 mics that are mobile, that are roaming, So please raise your hand and remember that our team will come over and then we'll try to get to as many questions as we can. So join us. Let's start over here with first question on the right side.

Q - Ross Stuart MacMillan {BIO 1994797 <GO>}

Ross MacMillan from RBC. And thanks so much for the presentation today and all the incremental insights. I actually had a question for Satya. You said, when talking about SaaS applications on Azure that you had some new business model and problematic changes coming, that would dramatically change your position in the market. Could you just maybe drill into that a little bit more?

A - Satya Nadella {BIO 3224315 <GO>}

One of the things that, Scott, talked today was about how if your SaaS -- business SaaS application vendor, who is hosted on Azure, the entire tool chain that we have between Power BI, Flow as well as Power Apps is something that, under no incremental cost to the customer, they can use that not only with Office 365. But now with that SaaS application. And it's got multiple benefits. Ultimately it's about the customer having the ability to compose applications that span their communication and productivity pieces in O 365, the Dynamics 365 or any other SaaS application. Because most of what business process is, is it's going away from these monolithic suites to composable business process that span multiple SaaS solutions and the toolchain enables that, the business model enables that. So that's the big shift.

A - Chris Suh {BIO 17955231 <GO>}

I think we probably need to get a mic in the middle row as well, please. So we don't have a mic quite over there yet. So why don't I start over here.

Q - Walter H Pritchard {BIO 4672133 <GO>}

Walter Pritchard, from Citi. Just, Amy, on OpEx. I think in past years, you have been much more prescriptive about, with your range on OpEx. And it seems like there's actually more moving pieces into next year, just to name some uncertainties you have, LinkedIn, which was growing their OpEx pretty fast as a standalone. You're running that standalone. And I guess we want to maybe understand some of these moving parts in OpEx. Is LinkedIn kind of still growing OpEx like they were independent, looks like you're actually going to growing your core OpEx, could you help us understand maybe the factors on those and if there is anything else that we should think about with the qualitative piece you gave us?

A - Amy E. Hood {BIO 18040963 <GO>}

Yes. The reason I didn't give an annual number is, frankly, because we're still looking at accelerants. I want to be really clear. I feel really good about our commercial revenue opportunities. And frankly, if you sat through this morning and didn't leave feeling like we've got a lot of opportunity to grow, I feel badly, actually, like we didn't do a great job of explaining that. And so, what I would say is, I sometimes think that when you give an annual number, then you all kind of focus just on that instead of me saying, wait, we should spend more because we are landing revenue growth. And there's so much opportunity for TAM expansion. And so frankly we're still working it. LinkedIn, I do really think of, as a separate entity. We run it that way. They run much more on a calendar year basis, not a fiscal year basis. Works fine for me. And so we're still working through with them what FY '18 will look like. We feel

confident what H1 will look like, not as much on H2, we'll work on it. And so this is the sort of my level of confidence currently, recognizing that I feel like you all know, that I work hard with the SLT and Satya to make sure every dollar we spend is put on the right place. So everything I said doesn't mean that we're not working hard to reallocate capital, move it to the different places, make sure we feel terrific about where it's going. But I'm not quite ready to say x is the number.

A - Satya Nadella {BIO 3224315 <GO>}

And I think Walter, you've tracked us for a long time. And I think you've consistently asked us even about how do you see new business growth and then obviously how profit growth that's commensurate with it. But I hope that what we have demonstrated over the last multiple years is, we're repositioning this company to participate in new growth markets and the discipline that Amy talked about is underneath, you may not see it obviously in the just the aggregate number. But the amount of what I would call capital allocation that happens internally is probably one of the more tough things that we've done in the last multiple years. And we'll continue to do it. Each one of these businesses has got different opportunities. I mean, if you take even the LinkedIn case, some of the integrations we talked about are going to be funded in a big way so that we can make sure that we realize that potential. I mean, yes, we run it "standalone" so that the culture of LinkedIn and the way they innovate is maintained. But it has not stopped us in some sense from doing all of the important integrations. So it's probably the first acquisition where we just got some pole results back, where people in the company are feeling great. And on top of that, we have all of the integrations on where we head as a road map are all on track. And so to me that art form is what we need to master and make sure we foster. And we'll always take those opportunities.

A - Amy E. Hood {BIO 18040963 <GO>}

And just so you're clear, he means the happiness of employees at LinkedIn, ours are still happy. But -- and I would also say we also did our -- got our survey pull back too. Our culture and our confidence is also at all-time highest inside the company. And so, I think both of those are a good thing.

A - Chris Suh {BIO 17955231 <GO>}

Okay, let's go to the next.

Q - Philip Alan Winslow {BIO 6300579 <GO>}

Phil Winslow of Wells Fargo. A question for Satya and then follow-up for Amy. Satya, wonder if you could provide some historical context because obviously from the picture that you are here this morning, that you were here for the client survey area at Microsoft. And I want to talk about the intelligent edge or we call it Microfog, whatever you want to describe the next paradigm. But wondering if you give us some sense of the previous paradigms? Main frame to client server, client server to web tier. You saw this tick-tock between centralized and distributed and then the expansion out a number of devices and applications. What do you think is similar about intelligent edge, Microfog, whatever you want to call it. And what's dissimilar from the prior cycles and then just a follow-up to that.

A - Satya Nadella {BIO 3224315 <GO>}

Microfog. I think, I'll have a better name for you, intelligent edge. The thing that there is for sure what is secular in all of this is what I think you referenced, which is there is going to be more computing. And computing is going to be more distributed. And so if you sort of take that, this makes absolute natural sense. That's why we always conceived of hybrid, not as lets tier the cloud to some legacy. But let's tier the edge to the cloud. That was sort of the design point that we built even for SQL Server 2017. The fact that you can take a database and stretch it, is adding a cloud tier to it. The thing that's perhaps exciting in terms of this generation versus the client server generation is the expansive nature of the devices, right. I mean, think about the computer that is running at in commodity cameras with computer vision, not something we saw in the client/server era. Some of the work Microsoft Research is doing is taking some of the DNNs that we have and the ability to compress them using some techniques like pruning and binarization. So that you can run them even on a Cortex M1. And so that means, you've trained in that cloud, you're deploying on the edge, doing inferences on the edge. So to me that's what's going to happen. It's going to happen with end-user computing, it's going to happen with IoT, it's going to happen at home, it's going to happen in meeting rooms. And to me, what is -- the currency of here is data, as Johnson said, it's data that's semantically enriched. Microsoft Graph is that, right, it's semantically taking people, their relationship to activities and their devices, making it a first-class developer platform, hugely important when you want to stitch experiences across devices together, having this edge compute in intelligence, super important. So I think, in some sense it's the most natural thing. But it's much bigger than any client server opportunity we had. And it's going to be bigger if I sort of in tandem with the cloud bigger than what people conceived as just cloud computing, because cloud computing by definition on its own has limits. You can't sort of have centralized computing that spans all of our computing needs.

A - Chris Suh {BIO 17955231 <GO>}

Let's keep rotating around, let's go out to the far edge there.

Q - Michael Turits {BIO 1720659 <GO>}

Michael Turits from Raymond James. This is a question for Satya, perhaps for Amy as well. You guys have spoken a lot about machine learning in the last year. And I assume invested there as well. How do you guys think about monetizing that primarily in the balance, is that primarily the Dynamics that Azure will just be smarter and, therefore, more value-added and more profitable or there's specific SKUs and there will be monetization of that, what's the balance between those?

A - Satya Nadella {BIO 3224315 <GO>}

That's a great question. Time will tell in terms of all of the various monetization vehicles. But we think of the fundamental technology that's going to be pervasive throughout everything that we do will have a high component. So you're right, today, whether it's Windows Hello, I mean, if you install creators update, one of the most cool things is Windows Hello and the speed of image recognition for instant on and logon. That's AI, every day at work and even the logon process. You want near feel

devices with speech input and screens. Guess what, we have all the PCs that are capable. Because 250 million of them next year will be AI enabled, if you will, with those capabilities, with both speech computer vision and touchscreens. Then, as you rightfully pointed out, every SaaS application, whether it's the LinkedIn newsfeed, which probably is one of the biggest attractive things for us to apply a lot of AI technique because of the yield on that page to what we're obviously doing with our search, to what we're doing with Xbox LIVE. For example, when we do player matching, that's an AI inclusion. Then, of course, in Dynamics 365 and Office 365, everything from the focused inbox to how we do security is another huge area where AI is being deployed. But on Azure, we're already seen how AI can get built in to some of these higher-level services. I mean, take one of the things that we did with the recent release of SQL. You now have SQL Server at the edge capable of reaching a GPU running Python or R. And so you really converted essentially even SQL into an AI product. So we will have multiple infrastructures, SaaS and even our end-user devices and operating system all infused with AI. And in the process, we will also look for other AI products. And so, it's a broad spectrum. But we start from a structural position of infusing AI into business that we're in.

A - Amy E. Hood {BIO 18040963 <GO>}

I often think, the best way to think about is you add a layer under every of 3 clouds you think of us having, whether it's all the Azure features, whether it's Office, even the consumer version making you a better writer for those of that are on modern version of Office. No. If you aren't running a modern version Office, you don't see the blue squiggle. The blue squiggle basically makes you a better writer. Like it's fascinating.

A - Satya Nadella {BIO 3224315 <GO>}

I mean, Office has saved me before and now...

A - Amy E. Hood {BIO 18040963 <GO>}

No. It really saves us.

A - Satya Nadella {BIO 3224315 <GO>}

I can be a writer.

A - Amy E. Hood {BIO 18040963 <GO>}

Now, yes. We'll keep you. I think you're busy. But I do think -- you really will see it show everywhere, whether or not it also has monetized separately. I think that's certainly a possibility. But you'll more just see it show up everyday interfaces.

A - Chris Suh {BIO 17955231 <GO>}

Let's take one from this side of the room.

Q - Mark L. Moerdler {BIO 16855032 <GO>}

Mark Moerdler, Bernstein Research. Satya, HoloLens appeared sprinkled throughout the keynote throughout the exhibition hole and in both of the case studies. How should we think about the HoloLens opportunity? And Amy how does Microsoft monetize?

A - Satya Nadella {BIO 3224315 <GO>}

It's a great question too. Tomorrow, you'll -- I think you can get a much better perspective even on the all-app Windows mixed reality vision. Because if we think about what we did, is -- a lot of these technology that's in progression are so pack dependent. Steve used to always teach me that, which is you got to get started in one place and be looking for how do you take this and apply it in better places, don't be bound to just using technology in one place. We got started with Connect. That is how we got the fundamental computer vision. That's what led to HoloLens. Now that we have HoloLens, we're now taking the same shell and that's going to be part of Windows. That's what you'll see tomorrow, powering every Windows machine that's capable with this mixed reality shell. So for us, we don't think of VR and AR as 2 separate categories. One app model, one shell and one platform play. So that's showed to some degree the biggest monetization in the short run will be starting this fall, every Windows OEM license is essentially monetizing VR for us or monetizing mixed reality software asset. And of course, we think the ultimate computer is the computer that you have in front of you all the time. So vision becoming a computer is something that, we believe in and we'll keep making progress on it. So you'll see us change form function with new devices, create categories and democratize those categories. We're not, as I've always said, in the device business just to be in devices. But to do you even get the software right. I think, Allen Kay is the one who said, if you're ever serious about your software, you'll build your own hardware. And that sort of one of the things that we're learning by building these devices. But we have a clear strategy like we've proven by building in HoloLens and then democratizing it through all OEMs, all devices and that's how you'll see this monetize.

A - Amy E. Hood {BIO 18040963 <GO>}

And even how many of the VR experiences people have today, how many of them are even come from a Windows PC. And so I do think when you think about monetizing, Mark, it would -- it is, I think, not per se about the hardware, although we may. It's effectively building the ecosystem that runs that creation activity at its core. And you tend to see it whether it's OEM license or not.

A - Satya Nadella {BIO 3224315 <GO>}

And I'd say 2 are the things since we have both Justin and Phil here, which is one is gaming, is they are in Minecraft. And VR and AR is definitely in mixed reality the big deal for us. So that's one of the monetization level for us. And if any -- and we knew that going in and we always anticipated that in some sense. I wanted to buy Minecraft because we knew that this was going to be the case. But the frontline workers and the traction we have in frontline work, I had not sort of thought of it as a place where -- most of these digital transformation projects, as you rightly pointed out, most companies are investing in tech now for their frontline workers. But they're not traditional compute endpoints. And interestingly enough, HoloLens and its

capabilities, right, it's not just a heads-up display, you want to be able to impact, have the richness of HoloLens for the aircraft maintenance. And we're seeing scenario after scenario of that. And that's probably very new to us we had not anticipated.

A - Amy E. Hood {BIO 18040963 <GO>}

Not anticipated. And you'll -- I think if anyone of you went to trade shows. Whether it's for manufacturing last week, all the way...

A - Satya Nadella {BIO 3224315 <GO>}

Hannover.

A - Amy E. Hood {BIO 18040963 <GO>}

Great example. You would be surprised at how often you may have seen something that most of us think is a gaming thing. You would have seen it across trade floors in the past year. Same with (inaudible) it's great it came up.

A - Chris Suh {BIO 17955231 <GO>}

How about you come up here in front, Shannon.

Q - Unidentified Participant

(Shannon Cross), Cross Research. Satya, can you talk a bit about the hybrid cloud and how you see the progression? Included there's a lot of discussion about Azure Stack today. And I think one of the comments was sort of got to Azure Stack and then it's easier when you finally make the transition. But I'm curious there is sort of timing and how you're thinking about it playing across and maybe how the new SQL announcement today as well sort of play into that?

A - Satya Nadella {BIO 3224315 <GO>}

Yes. I mean, we have customers who have existing estates, whether that's compliance, data sovereignty needs, other reasons why they want that flexibility with hybrid. And whether it's our SQL product or Windows server product or a specialized appliance, essentially like Azure Stack, we will have all of those options. That's one side of the conversation and we're maturing that and making a lot of progress on it. Like even the carnival cruise line, there are some use cases where you absolutely need that. But what's most exciting to me though is this emergence of this new edge, right. So that -- there's one way, I think, the conversation -- the way you even talked about the question is, I want to take my estate and move it to the cloud and this is "stop gap." Some of it is true, which is people will even say, "Hey we want this to be a hybrid environment for a while because we are regulated" or "we're not yet sure of the cloud." But what is interesting is, that this edge is a permanent state, not a transitory state, which is you want to have Azure Stack as the edge of the cloud or you want SQL deployed inside of Azure Stack as a permanent state or you want the Azure IoT runtime. And the reason for that architecturally is pretty straightforward, why? Because you're generating tons and tons of data. I was just talking to somebody in the oil and gas industry. And the amount of data just

because of the census that are generating is growing, car example I already gave. And you don't want to rendezvous all of that with the cloud, you just cannot. The latency will not allow it, the bandwidth will not allow it. And you need to still make inferences locally, because you do not want to wait for some model to get uploaded in the batch way to tell you that something is going to go wrong and you got to make a real-time decision. And so compute will go to where data is getting collected. So that's the new phenomena. Just as we're talking about hybrid and cloud growth, that's happening, while there is even the edge of the cloud that's growing in parallel. And that's, I think, the exciting part and sometimes you could even say there's a complexity to it. But to me architecturally my approach for both those use cases is exactly the same. So it's not like we're doing something different for somebody who wants to use it as a way before cloud. But I'm also essentially future proofing them for what is post cloud event.

A - Chris Suh {BIO 17955231 <GO>}

Let's go to the center.

Q - Keith Weiss {BIO 6993337 <GO>}

Keith Weiss from Morgan Stanley. Thanks for your talking time this afternoon. I want to talk a little bit about digital transformations. Digital transformations seems like something that today is very much an enterprise play. Justin was telling us about sort of specialized team to go in to Volvo and change their business processes. But Microsoft has always been about all hawk size companies. How does that go down market, does that go to small and mid-size businesses. And if so how? How do you get your partners and the resellers to actually be able to do digital transformations on?

A - Satya Nadella {BIO 3224315 <GO>}

That's a great question.

A - Amy E. Hood {BIO 18040963 <GO>}

Yes.

A - Satya Nadella {BIO 3224315 <GO>}

Great question. I would say, on that second part, I think the answer is ISVs. I think the best way is every ISV -- one of the things that's so fascinating to me is whenever I visit a country, you see the Dotnet, SQL, ISVs by industry, right. We have a huge install base with these ISVs build essentially, digital transformation solution in the client server era. Now we want to recruit each one of them, have them build using all of the componentry. That's why we want to give them as much leverage as possible. Here is IoT. Because I want even a SaaS like mentality to the building blocks of Azure. So that, that developer whom we know deeply can get maximum leverage so that they do the work that they can do in their country. So these micro verticals, by country, by geo, I think is going to be a significant part as a way to scale. The thing that is happening, though, is -- the big transformation story. You take Nissan, you take Volvo, you take Boeing, they all have supply-chain and distribution chain. So they are acting as those ISVs. So in some sense, what Judson said, I think is pretty much,

whether it's Land O'Lakes or Boeing, they are to us now like what SAP was say in the mid-90s when I was sort of working with them on SQL. So to me, interestingly enough, these industrial transformation applications being done by large companies are essentially ISV solutions that span out to the supply chain.

A - Amy E. Hood {BIO 18040963 <GO>}

And I do think, you're right, this has always been. We've actually had a great and strong enterprise business. But we've always done incredibly well in the mid-market and below through both -- whether it's our partners or the extension through our ISVs. One of the example Satya gave, that I do think we probably should have people understand better is this motion around App source for us, Power Apps, that is a very natural way to provide digital transformation. The way most businesses experience it, which is in smaller chunks. Take my own finance organization. I could name 5 or 6 things we've done in the past six months, which were about using smaller components. You change an audit chain, you change a tax process flow. The partners in those it may be KPMG, it may be EY, it may be another third-party. But those are pull for whether it's Azure, or there are some of them are built into Office, some of them use a bot framework to do credit services. That is digital transformation. But Don, I think these are very -- listen I love Judson's examples, they are big, they are massive and they are complete. But I would say, just as many we're seeing are the way even we've gone about it. And that's actually all small companies or even midsize companies have to do and are capable of doing those same changes at that scale. We do rely on partners primarily for that motion.

A - Chris Suh {BIO 17955231 <GO>}

Let's, how about Karl.

Q - Karl Emil Keirstead {BIO 1542979 <GO>}

Thank you, Karl Keirstead of Deutsche Bank. A question for Amy. Amy, I was intrigued by the slide you put up on the server product business and I did some quick mental pie chart sizing.

A - Amy E. Hood {BIO 18040963 <GO>}

Thank you.

Q - Karl Emil Keirstead {BIO 1542979 <GO>}

And it looks like you're calling for pretty extraordinary Azure growth in fiscal '18. So I wanted to ask you assuming that and given that you're not guiding to an acceleration in CapEx next year, it would seem that one take is that Azure gross margins must be poised for some pretty good expansion in fiscal '18. So I wanted to ask you is that the correct take and if that's true and Azure becomes a larger portion of the cloud mix, is it actually possible that the rate of increase in your overall cloud gross margins goes down next year because the Azure piece is so large?

A - Amy E. Hood {BIO 18040963 <GO>}

One, that must be (inaudible) work. So this is the downside of technical innovation, I guess. It's edge intelligence right there in Karl's PC. Here's what I would say. I am incredibly confident in the Azure business that we've built over the past year. The investments we've made, you literally see them, in the examples Judson gave. And the customer adoption we've seen and in really the changing conversations that we have with customers. So I do feel very good about it. Certainly, there's some of that confidence is shown in that slide. Whether I'll get my mix right between how it lands and -- versus Azure or Azure Stack and it shows up differently. Listen, this is us right now telling you where we think it will be. It's bull park, right. But the confidence is certainly there. And your comment around is that sort of how to think about the gross margin at the commercial cloud level is absolutely right. Azure will be with this growth rate and increasing mix in that number, even if I have high expectations for Dynamics and Office 365 that you saw as well. And so I do think it may -- it could weigh a bit more. But again this is sort of -- it depends how the mix roles through the year. I also have great optimism, for example, in Dynamics 365, where the margins are obviously structurally quite different.

A - Satya Nadella {BIO 3224315 <GO>}

I mean, one of the things, Karl, is that's tough to model.

I know nothing is tough to model for you all. But for example, every IoT project that first started, started as just a IS project, then they started consuming some of the higher-level services we had in IoT, which had SaaS like characteristics in a very different margin structure. And the thing we realized is as soon as you're doing IoT and you're doing data analytics and predictions, you need field service. And so we started seeing field service attached. These are -- these new things that start at one place and then will end up in a different place. And so there is mix as well as the path dependence. So to me one of the key guidance for especially our field is to become world-class at being able to envision that for customers, because if you are very short-term focused, we won't see the transformation. That I think is, would be a big miss on our part on your behalf, if we don't go after this generational opportunity, we are so well very positioned. And I'll definitely take that with your permission.

A - Amy E. Hood {BIO 18040963 <GO>}

But what I would say is what you're hearing Satya say is more that, when we think about compensation or models for our sellers, we think about it as the commercial cloud moving the entirety of their estate experience, whether it's the per user motion I talked about, whether it's the I'll call it per department, because it's a business application. That motion plus either Azure sitting under it, whether it's Windows 10, which shows itself as IoT, those motions were sort of wanting the equal amount of passion for in the field as opposed to just Azure or just this or just that. And that's why I say, I think, I'm close if it shows itself in a slightly different mix because of the way the contracts land. I mean I'll live with that as long as we're transforming the customer in the right way.

A - Chris Suh {BIO 17955231 <GO>}

Let's come to the center of the room. How about, give Kash a mic here.

Q - Kasthuri Gopalan Rangan {BIO 22095432 <GO>}

One for Satya and one for Amy. Satya, your position on the of intelligence cloud, intelligent edges, very unique position relative to two other public cloud companies. When do you think that position will manifest in terms of the kind of market share that Microsoft can gain in the public cloud that's more akin to what you've had in the legacy on (inaudible), which I think is 60% to 65% share of workloads. Do you think we could ever be at a point where you could replicate the kind of market share with your pivot intelligent -- cloud intelligent edge? One for you, Amy. If all of this is right, in fiscal '20, do you think commercial cloud, \$30 billion run rate is crazy or is it okay within the ballpark at a 60% gross margin if I could add?

A - Satya Nadella {BIO 3224315 <GO>}

On the first one, I would say the following, which is, I think most people forget we had tough competition even in the client server era. We were not marketing, it depends on -- we may have had unit market share leadership in positions. But we did not have, for example, in the database revenue market share. We were very, very low share compared to others. So I look at this as not like, oh we had a lot. So therefore we should first recoup that. I think that there is -- the TAM is much bigger than it ever was in client server. And so we're going up with that as our fundamental posture. The intelligent cloud and the intelligent edge is absolutely structurally something that's unique to us. But at the same time, we'll have fresh and new competition. There must be something we're doing right, as I said, that we attract every 10 years new competition and that's awesome. And it's too early to start thinking about share, when -- as we are talking about it, the fundamental architecture or what we are counting is shifting. But I do believe that the digital transformation infrastructure opportunity is going to be lot bigger for us than anything we achieved in the client server era.

A - Amy E. Hood {BIO 18040963 <GO>}

And I'll just say, we'll be close to 15 on a pure revenue basis this year, at a 50% margin. I feel really good about that. What I focus on is, I want to continue to see revenue growth across all the nodes. And I want to continue to see margin improvement across each node. How that manifests itself in one number over time, we'll just wait and see. But it's very clear, every team working on this has as much passion frankly as I do about we've set a bold target. I'm Superconfident we're going to get there. Whatever next target we set or don't set, it will continue to be bold. And I think what you should see in these numbers is our ambition. This morning to this afternoon. And I really hope you'll tune in again tomorrow. I think, you'll see a differentiated vision. Where you find value. And where you find margin is ultimately in differentiation. And so, that is what we have to land. If we do that, we'll be in great shape, is much more how we think about it.

A - Satya Nadella {BIO 3224315 <GO>}

One last one.

A - Chris Suh {BIO 17955231 <GO>}

One last one. I appreciate all the interest. I think we have time for one more though.

Q - Unidentified Participant

So 2 questions actually, if I may, for Satya. This morning you spoke of -- your comments this morning rather and again this afternoon, brought to mind comments from the earliest part of your tenure, which had to do with ubiquitous computing and artificial intelligence. And you're evidently building upon that. It's clearly propagating. The question though is, could you talk about Microsoft's own internal execution and management of product development. You have over 30,000 employees in R&D at any given time. You have 2,000 or more that you're looking to add and it's a big complex organization. Could you talk about what changes you've made to the execution, process, management of development to continue the road map in execution that you've achieved so far? Secondly for Amy, could you talk a little bit more about your cash flow expectations. You've just recently got into a \$40 billion annualized run rate in cash flow, is it unreasonable to expect that sometime in next two years, you could get to \$50 billion or more?

A - Satya Nadella {BIO 3224315 <GO>}

On the first piece, you're absolutely right, which is the term I used. I think, in the first mail even was ubiquitous computing an ambient intelligence. And as all things, many of these ideas are not new, these are ideas out of Xerox Parc. And the -- it's that realization of distributed computing that I think we're seeing. Where there's going to be more computing in our lives, there's going to be because of that more social complexity of computing for end-users and more complexity of distributed computing that needs to be tamed. And we definitely are positioning with that worldview as opposed to thinking about it as client/server Redux with 1 mobile app and 1 cloud app. That's a pretty narrow mobile first cloud for its definition, this is the more expensive definition of it. The cultural change at Microsoft is all-encompassing, quite frankly, because in some sense the way for us to approach how we do R&D cannot be done just by thinking about R&D. We have to sort of say everything from what our sales teams are doing to what our developers are doing. We're in the business of trying to anticipate unmet, unarticulated needs of customers. Yet, you got to get into that posture, especially in a company like ours that has had tremendous success. Sometimes those feedback loops get sort of disturbed. You got to get back into it, where you are able to conceive of new ideas and then go at it with uniqueness, which is, there is no point looking around and say, hey who else is doing what and let's just do that. That's just not the way innovation is driven. So I feel that we have that sense of purpose, we have our set of worldview of where is technology going, in tech you can't just meander. You have to have a first-class view. You march before its conventional wisdom and stay with it. And then you got to have ambition. You can't sort of be beholden quite frankly, do any org structure and category definition. That's one of the other things that holds you back, one of the things Amy and I fight all the time internally to make sure, is we're not doing allocation based on previous revenue and backward looking structures. We've got to be able to think about something that's new. So I would say it's really, every group changing and it'll never be done. And I will never claim any perfection at any point in time. If anything, I'll have my list of things that I'm and terrible at. And I hope we use that as inspiration to keep pushing, keep pushing. But I feel good that people are

resonating with it. It sort of a, bit of a permission to in some sense recognize our shortcomings and get better, which I think is the start of anything.

A - Amy E. Hood {BIO 18040963 <GO>}

And on free cash flow view, I think.

A - Satya Nadella {BIO 3224315 <GO>}

That's quite the transition.

A - Amy E. Hood {BIO 18040963 <GO>}

That really was from of a worldview of internal optimism and how you build relevancy to free cash flow. They're related by the way. What I would say is we're at that point where gross profit dollar growth, especially, I think, our confidence at where we are in the cloud. And you've seen those transitions, you've seen our increasing efficiency. And even though, I think, demand is high and I feel good about that, I do think the improving efficiency you'll see in the capital expense, which I've talked about. Ultimately, even if I did give a guidance around operating expense, you know that we're always going to do exactly what every successful company does, when they want to exist and be durable over decades and decades, they reallocate. And they move and they move confidently and they consistently do it. I think that will also impact positively ultimately free cash flow. And so while I'm -- I don't do two years, I barely did the shape of 18. I do think it's certainly metric we have focused on more in the past year in terms of discussing it and guiding to it. And it's certainly something I managed to internally in terms of what ultimately matters, especially when you got a lot of stuff running through the P&L.

A - Chris Suh {BIO 17955231 <GO>}

Thank you, all.

A - Amy E. Hood {BIO 18040963 <GO>}

Thank you, all.

A - Satya Nadella {BIO 3224315 <GO>}

Thank you, all so very much.

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