

**Terry Myerson: IFA 2017**  
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**TERRY MYERSON:** Willkommen. It's so great to be here in Berlin at IFA with so many of our customers and partners. I'm Terry Myerson. I lead the Windows and Devices Group at Microsoft. And today, we're here to talk about our next step in our journey with Windows 10.

We're coming up on our fourth major update to Windows 10. And our mission with these updates is to deeply, truly inspire and find your creativity.

We see students playing with 'Minecraft,' lawyers creating with words, accountants painting with numbers, designers sharing their ideas and engineers writing in code.

This creativity, it's universal, it's aspirational in nature, and unleashing that creativity with new experiences, that is what is propelling us forward.

And for us those experiences all begin with Windows 10, the most popular version of Windows on the planet. We now have over 500 million people everywhere using Windows 10 in homes, businesses and schools, helping them create and play.

And today, we're pleased to announce the next major update to Windows 10, the Fall Creators Update, will be available this October 17th.

With the Fall Creators Update we're introducing some fun new ways to get creative. Windows Inking just keeps getting better. You now can ink directly onto PDFs, easily, quickly share your notes with others, improving what you can do with pen and paper along.

Smart Ink, now automatically making the squares you draw more perfect, or changing the boxes you draw easily, quickly, automatically, into a table with no extra work.

And sometimes you can't find your pen, wallet or keys. Well, sometimes we can't find our pen to do that inking. Now Windows Find Your Pen will help you always find the pen when you need it.

Also in the Fall Creators Update we've reimagined the Photos app. You now can remix your photos, your videos, graphics, even inking, together to tell your story and share with others.

And now with OneDrive Files On-Demand you can store all your files in the cloud, interact with them locally as if they were there, quickly, easily using very small amounts of storage to have access to terabytes of data in the cloud.

Now, the fuel behind all of that creativity is often our play. And with the Fall Creators Update we've updated Game Mode. Game Mode enables you to use the full power of your PC as if it was an Xbox game console, but now it's accessible directly from the game bar.

And to take advantage of the full power of that device we have this full lineup of Xbox Play Anywhere games coming this holiday, including "Cuphead," "Forza Motorsports 7," "Super Lucky's Tale" and "Middle Earth Shadow of War."

And if you love playing these Xbox Live Anywhere games, coming this October 7th we have the most powerful game console ever, Xbox One X.

Now, while you create and play, our goal is to keep you safe and secure. So with the Fall Creators Update, Windows Defender is smarter and defends better than ever before, with behind-the-scene cloud intelligence that enables new defenses against ransomware and exploits.

And I can't stand up here and talk about security without highlighting Windows 10 S. This is our newest version of Windows 10 that we've designed specifically for simplicity and security, offering significant breakthroughs in battery life and performance, the same performance on day 1,000 as on day one you take home the device. It's off to a great start with some breakthrough levels of customer satisfaction.

So that's the core of the Fall Creators Update, unleashing your creativity, enabling you to have some fun, while at the same time keeping you safe and secure.

But now I also want to highlight some other exciting technologies in the release. The first of those is one that I think really speaks to our mission to create products that are inclusive by design.

With the Fall Creators Update we're making Windows more accessible for those with Lou Gehrig's disease. This is a progressive neurodegenerative disease that impacts the ability of the brain to control your muscles. But the one muscle it doesn't impact is your eyes.

So with the Fall Creators Update we've integrated this new functionality called Eye Tracking. It lets you type and operate your mouse using just your eyes. This is life-changing technologies for those that are afflicted with Lou Gehrig's disease. And we're so proud to now include it in the Fall Creators Update. This is real advancement in accessibility that we are introducing to the world.

But that's not all. Also in the Fall Creators Update we're enabling you to immerse yourself in a new reality, the world of Windows Mixed Reality.

By combining our physical and digital worlds, we believe mixed reality is the next evolution in human computing. For the first time we're talking about a mixed reality

system that fully immerses you in mixed reality, not limiting your view to the size of your screen.

It's a mixed reality system that's easy to set up; no putting screws into your walls, no setting up cameras around the room. Just put your headset on your head, and experience the mixed world. And at the same time, it leaves your hands free to interact with that mixed world.

And this mixed reality system will be available from a range of partners at a range of price points, all starting at \$299.

Now, at a moment like this when we're introducing a new experience like Windows Mixed Reality, it's fun to take a step back and reflect on how we got here.

It was a little over eight years ago when the team first came to me and proposed that we should really be investing deeply in mixed reality. We discussed how science fiction could become science fact with holograms and 3D. They literally shared this image of how doing research on the ocean could change in mixed reality. Instead of reading National Geographic, you'd be experiencing National Geographic in your family room, with full-sized sharks floating by. Instead of playing on a PC screen, you'd be experiencing Pac Man around your house. You'd be running through the hallways to collect the points, while the monsters chased you through your halls.

And this photo behind me now, we took that early vision and we decided to build. This shows the very first bench that we used to project our first holograms into the world. What you don't see is this large wooden bench, this dirty workshop, all of the lenses we tried, but when Joe Belfiore stared through those lenses, he saw our very first holographic image, which was a lobster. But at that point, we knew we were onto something, and we set out to build what became HoloLens, introducing in January, 2015.

HoloLens is now being used by businesses all around the world for a whole variety of applications, very commonly being used for training. Here you see a video of Japan Airlines. It is no longer taking jet engines offline, a very expensive proposition, but they're training their engineers to fix their jet engines using holograms, saving all kinds of money. We're seeing similar applications in businesses with remote assistants where expertise is remote but being able to help out and interact with an expensive device locally with the user.

Some very exciting commercial applications of HoloLens, but in the context of today the most exciting thing about HoloLens is how it helped us understand what we needed to do, what was required for us to enable our partners to really build mixed reality headsets at scale, and do it at these incredibly low price points so we can democratize mixed reality for the world.

So I thought what we could do was take a look inside HoloLens and inside one of our partners' mixed reality headsets, and see how the HoloLens technology is now flowing into these partner headsets.

So here I have taken apart Acer's Windows Mixed Reality Headset. And if you look inside HoloLens, you'll be able to see four cameras. These four cameras project out into the world, enabling what we call inside-out tracking. So it's actually correlating what you're looking at in the world around you and projecting the images out. This is what these four cameras would enable HoloLens and not require the outside-in, the cameras all around the room looking back at you.

With these partner headsets we were focused on virtual reality, not augmented reality, and we were focused on really costing these down to new price points.

So when you look inside Acer's headset, you'll see two cameras. Here they have two cameras, not four, which gives us a level of precision they need for virtual reality. And this camera is really an evolution of the camera that is actually used in HoloLens itself, the engineers taking their learnings from HoloLens and costing it down to enable these mixed reality headsets.

Now, the same thing happened with the displays. HoloLens uses a projector that actually projects images into your eyes. But we wanted now with virtual reality, we didn't need the same projection technology but we knew we wanted to cost it down to enable an LCD display system.

So the same technology and techniques we used in HoloLens, a lot of the learnings have been applied to enable this LCD system with impulse backlighting. Now, this impulse backlighting enables these lower levels in persistence per frame, enabling us to hit display hertz of 60 hertz or 90 hertz, using integrated graphics or discrete graphics of the PC. So this enables new price points, never seen before with these mixed reality headsets, and it's just again pretty exciting to see these learnings from HoloLens showing up in display technology and mixed reality headsets.

And one last thing, it's just so exciting to see it happen again, there's a chip inside HoloLens and each of these mixed reality headsets called the Inertial Measurement Unit. This is the sensor which is tracking the pitch and yaw of the device.

But the challenge here, you know, it's actually the same chip in HoloLens and these mixed reality headsets. But the great thing here is the hard thing is the calibration. Calibrating what the cameras are seeing with what the IMU is reading so you get that accurate feedback all the way back to the software applications, it's the calibration systems we built for HoloLens that we're now sharing with the partners, which enables this calibration of the chip with the cameras, and enabling these great experiences at these low price points.

So for those of us building these systems it's just incredibly cool to see us taking the bleeding edge HoloLens technology, flowing it down to partners, to their headsets, all around the world. And there's more to come.

But today, I also want to share, all of these headsets will be available with the Fall Creators Update on October 17th. So that's a big day for us I think in mixed reality to see these experiences coming to people all over the world.

So I thought now we could share a video of actual experiences on these devices, because obviously it's not just headsets and the hardware, it's what software developers have done with Windows Mixed Reality and the Fall Creators Update, and then we'll welcome Kristina to demo other new ways to create and play with the Fall Creators Update. Thank you.

(Applause.)

(Video segment.)

**KRISTINA MICHALSKY:** Thanks, Terry.

Windows Mixed Reality looks amazing. Now, let me bring us back to reality.

Herzlich Willkommen auch von meiner Seite auf der IFA 2017. Mein Name ist Kristina Michalsky, und ich arbeite bei Microsoft Deutschland als Vertriebsleiterin für Consumer Channel. Es freut mich Ihnen heute die von Terry angekündigten Neuheiten präsentieren zu dürfen.

As Terry mentioned, the Windows Fall Creators Update is filled with new innovative features that help me to create and to play in a new way. Today, I will play a role of an interior designer who is working on a home remodel. In this demonstration I'm going to show you how the Windows 10 Fall Creators Update is going to help me to be more productive, creative, and have some fun, too.

One of the features that I love most about the Windows PC is the ink. As an interior designer, I love to be able to ink directly in the PDF.

So let me open the Microsoft Edge, and this is a document that I have received from my supplier. I'm going to take the pen, click on the ink, select the color and the thickness, and just make the measurement. There we go, 2 meters. And I'm going to sign the document.

Once I save it and send it to the supplier, he's going to see exactly the same notes that I have made.

Paint 3D is an evolution of Paint that we all know and love. As a designer, seeing the object in 3D helps me to be more creative and increase my creativity. So let me show you some news.

So in the remixed 3D model I can find a lot of innovation that also the community of the artists are sharing. So here you can find a lot of objects that I can leverage also for my work, and I can share also my projects.

But let me now come back to work. So with my customer I agree that this is the kitchen island that I we are working on. Now, the color that we would like to use is a lighter color. So in the stickers I can just select the light color and very easily stamp it here and change it. Now let me change it, and I'm going to select, and I can put the new countertop on top of the kitchen island. I can adjust the depth as I want. And also you can see the object now in the 3D.

PowerPoint in Office 365 is an incredible tool to showcase my plans to the customer. Here are a couple of favorite features I like a lot. 3D in PowerPoint. So the object that I just created in Paint I put into the PowerPoint. Now I would like to show the object also from a different perspective. So I simply copy-paste it, and can turn it to a different side so that my customer can see it also from another side. I can adjust the size, and now going to use the morph transition in order to visualize it.

So let me show you the presentation mode. This is the way how I'm going to present it to my customer.

But that's not all. I really think that I've found now the right stools for my customer. But I have it just online, and I would like to put it here into the mixed reality.

So let me open the mixed reality viewer, and you can see here the kitchen stools that I'm going to just put into the real surroundings. I'm going to take my two-in-one, just click on the camera, and drop the object here. I can move around. The object is still there. I'm going to take the picture, because I want to share it directly with my client. There we go.

Of course I can personalize it. So I'm going to take the pen, and highlight that this is my favorite. Anything you create or pull from the Remix 3D catalogue can be seen in the real world.

Now, moving from kitchen to the living room, as a designer I like to take a lot of photos and videos, and to share it with my client. So in the past, I took and shared the videos on my website. Now I'm going to show you the reimagining photo app, and how simply I can create great videos.

So I open the folder which is where are my work from the previous remodeling, and this is the short video I have created out of all of the pictures. So I'm going to make some changes.

I can of course include filters, text, motion and special effects. In this case I'm going to show you how simply we can include a special effect, so opening the video and finding the place where the special effect will be. So I want to create some wow effect with my customer before and after. So find the place now I like the better lighting, just put it in the insights, and here we go, so simple it is.

So let me now play for you the whole video.

I love Photo app because I can easily create these videos. Special effects bring excitement and energy to the video. Windows Ink on videos is very impactful, because look at this heart, how it is anchored to the chair.

I'm not a video editor, and I didn't have to purchase expensive software. It's all built right into Windows.

Now let me move from create to play. Last week in Germany, we had Gamescom, and a lot of exciting titles were announced. I like to play also games in the evening with my husband or with my friends, and to find in Windows 10 top games is really easy. I simply go to the Windows Store and find the right game for me, and a lot of games. Personally, I like the Forza, so let me play it for you.

Once I switch on the game, the game mode is working behind the scenes and ensures that the Windows 10 puts all power of the PC behind the game.

So let me start the game. I'll put it here. Let me start the game. Oh, I hope I'm the second. There we go. Whoa!

So this is exactly what I wanted to do. I'm using my Xbox controller that is plugged into the gaming PC. And I can share and broadcast really very easily, just with two clicks, and you will see it.

So I click on the Xbox button, go to broadcast, start broadcasting, and there we go. So now I'm sharing live with my friends or with the gamer's community.

So that's really a quick look into some of the new features that Windows Fall Creators Update is going to bring, and that helps me to create and to play.

Thank you for your attention.

Meine Damen und Herrn, vielen dank für ihre Aufmerksamkeit, und ich hoffe dass die kurze Präsentation Ihnen gut gefallen hat. Gebe das Wort an meinen Kollegen Peter.

(Applause.)

**PETER HAN:** Thanks, Kristina.

Guten tag, Berlin. I'm Peter Han, and my team and I work with Microsoft's OEM and ODM partners to build great devices. It's the union of those devices, that hardware, with the software that you just saw from Terry and Kristina that bring to life great new experiences.

As we look forward to Windows 10 Fall Creators Update, we've prepared a hot new lineup of holiday devices for sale. Now, of course, our OEMs ship hundreds of millions of new devices every year. So we've worked with them to curate the best and the brightest devices into six device collections bringing to life create and play on modern devices.

The first collection is the premium collection. This represents six globally iconic devices that appear consistently in retailers around the world. It's helped us take share against competitive platforms and really driven that Windows experience in PCs above \$800.

The second collection is the modern mainstream. Very often shoppers walk into our stores and ask, what's popular, what's selling, what's cool? And modern mainstream helps bring the magic of Windows into the middle of the market in \$300 to \$800.

The next collection, of course, is the entry collection, because we want to leave no shoppers behind. For those who are more on a budget conscious of price, we have great value PCs available in the entry collection.

And Windows isn't just for home life but also professional life. So as businesses around the world think about what Windows PC is best for their business we've curated the Windows professional collection. But, of course, at a holiday event like IFA 2017, we're especially excited to share some of the best and brightest devices in our gaming collection and the mixed reality collection, where we take some of the top PC gaming rigs and some of those mixed reality headsets that Terry talked about and really bring them to our retailers and our shoppers.

So we have some of our best and brightest devices across six areas. And now I'm going to show you some of those experiences. Let's start in premium with the kind of devices that show up in that premium collection.

I'm going to start with a local partner that has global brand and reach, Porsche. The Porsche Book One, as you can see here, is just an exquisite example of German craftsmanship. It's got that forged aluminum chassis. It's got fantastic two-in-one capability that's been rated the world's best by Chip Magazine here in Germany. And, in particular, if we can get a close-up on the camera, what I want to call attention to is the hinge. As you can see the way the gears interlock on the hinge, I can share with you from the design team that this was something that was inspired by the gearbox in a Porsche.

As you think about the kind of experience that you might have in Windows 10 Fall Creators Update, you can think about inking with things like the Wacom Digitizer. This

is a pen that's been tuned on the Porsche Book One with 4,000 points of pressure for especially nuanced sketching and drawing, notetaking that you can have as Kristina just demoed. And so a really exciting device from Porsche.

I'm happy to share for the first time that this device is on sale now on Microsoft Online Stores. In the U.S. it will go on sale in select retail stores, physical retail stores today. And in China, it will go on sale through JD.com by the end of September. So a great new premium device there.

The next premium device I want to show is the Lenovo Yoga 920. Now this device is a great example of what we mean by premium collection because it's been refreshed with the most powerful eighth gen Intel Core i7 CPUs. And in particular one of the cool features about this device is that it comes with an optional Thunderbolt 3 graphics dock. So what does that mean? If you want to take high res video, if you want to do some editing of a big file, if you want to have a mixed reality type experience, this graphics dock has embedded within it a NVIDIA GTX 1050 GPU and thus extends the computing power in the main device. It also enables you to output your work from this Lenovo device out to three different 4K screens. So a really interesting extension. This device also comes in different color options -- bronze, copper, platinum -- so nice configurability there.

And the third premium device that I'll show is the Microsoft Surface Pro. Now, of course, this is the iconic device that helped popularize the two-in-one category. You can see that super sleek form factor. It's the thinnest and lightest Surface Pro available, Surface available. It also comes with the Intel Core M CPU, which enables fanless design, really quiet. So some of the computers of yesteryear that might have been whirring as it sits in your lap creating that extra ambient noise, none of that happens with the Surface. It also comes with different keyboard options. So as you look at the colors, you can see burgundy, platinum, cobalt blue, some of the different ways you can really personalize a Surface and have a great premium experience.

The next collection I mentioned is modern mainstream. And so again, this is for the most popular PCs, the ones that sell in the greatest volumes when shoppers come into the stores and say, what's really moving. So the first device I'll share here is the Samsung Galaxy Book 12. This, of course, comes from our partners in Korea, and if you think about how you create and play on the move, you might realize in the modern era you might not want to be tethered to wires. You might not even want to be tethered to a Wi-Fi network. The LTE option on this Galaxy Book enables that creating and playing on the move. It also comes with a pen and keyboard, so you can do all those inking experiences that Kristina showed. And one of the special things about this Galaxy Book is that it's got the world-facing camera. And so lots of Windows PCs have that front-facing camera that enables video experiences like Skype and such, the Galaxy Book in particular has that world-facing camera so you can capture images and play with them, like the 3D experiences that Kristina demoed. So a really fun mainstream device there.

The next popular PC that I'll show is the HP Pavilion X360 14-inch device. Now why am I excited about this one? Well, let me reel off a couple of the Windows features that it holds and then bring the story together. So the HP Pavilion has Windows Hello. So with this camera here you can do facial recognition and unlock your PC that way, bypassing traditional password systems. It also has a great stylus like a number of the other devices that you're seeing that enables those pen and inking devices. It's got ten-and-a-half hours of battery life. And it's got a discrete GPU option where you can upgrade and really get that heavy-duty gaming and computing experience. And, on top of it all, this HP device starts at \$449. So when we talk about making devices and these Windows experiences accessible, bringing the magic to the middle of the market, this HP is a great example of that.

As a consumer device, because of that accessible price starting at \$449, the HP is also ideal for students. As some of you may know, Windows is the most popular computing platform for K through 12 students around the world. It ships more units than any other computing platform out there. And we're certainly ambitious to continue that. Earlier this year we announced that qualifying Windows devices come with a free year of Office 365 and a free year of "Minecraft for Education" with the device. We've been really excited to see the uptake of that. "Minecraft for Education" is used in over 100 countries worldwide, and we see over 100 million active users of "Minecraft." As you see students interact with "Minecraft" and learn that computational thinking, it's amazingly fun, and it really fits Microsoft's ambition to serve today's learners as they become tomorrow's creators.

Now as we think about education as well, Terry mentioned Windows 10S. We just released that a few months ago, and we started to bring 10S to market for education and consumer usage. The Fujitsu Lifebook P727 is a great example of an education device that runs on Windows 10S. As you can see, it's got the 360 hinge for that full two-in-one convertibility. It also enables, again, that Windows inking experience via the active stylus which is garage inside the chassis. And it's got chemically strengthened glass. Now, why does that matter? Well, I don't know about you, but I've got three kids who are ten, eight and four and they're crazy. And sometimes if they're like playing with the devices, they can be quite rough on them. The type of glass on this Fujitsu really resists the scratches and helps this Windows device keep moving. You also can extend the power of the Fujitsu with swappable batteries. And it provides great security again through Windows Hello, this time implemented through a fingerprint reader. So a great implementation of Windows 10S from Fujitsu.

Another Windows 10S device for both education and consumer usage is the Surface Laptop 10S. Now the power of this device is in the details. It is 201 pixels per inch. What that translates to is incredibly crisp images on a 13.5-inch PixelSense display. It's also quite light at just over two-and-a-half pounds. And it's got 14-1/2 hours of video playback. So just sips the battery and provides that long-lasting power. It's got rich tone-on-tone color, so again you can personalize it with burgundy, platinum, cobalt blue. A really nice device from Surface.

Of course, as I mentioned, Windows isn't just for home life but also work life. We see Windows 10 in particular as the most secure version of Windows ever with support for Device Guard, Credential Guard and features like TPM 2.0. It's empowering businesses from large enterprise to medium to small and mom and pop shops all to secure their workplace. And as we think about the modern workplace, we recognize that in some cases it is an office environment, but in other cases it can look very different. People are working in all kinds of different ways and that really comes to life with some of our hot new professional devices.

So the first professional PC that I'll show is a Dell Latitude 12 7285. Why am I excited about this one? It's the first Windows PC that delivers on the true promise of wireless charging. If your modern workplace doesn't have convenient power plugs or a way to charge back up, you can lay this device on the charging pad from Dell and it will recharge the battery right there. It comes right back to life without any kinds of cords.

The other reason that this device is especially exciting is the bezel-less display. It's Infinity Edge, all the way and really maximizes the screen real estate. Now, of course, we've seen this from other devices in the ecosystem over the last few years. This is a major trend with Windows. But what's new about this Dell is the fact that it takes that edge-to-edge, Infinity Edge, approach to detachables for the first time. So with this latitude I can take the screen off, use it in tablet mode, and yet it still has that design.

The other thing I'll show is just the really elegant work by the Dell engineering team to put cameras in at the edge. If you get the close-up on the camera you can see even with the bezel-less display you still have a couple of cameras embedded in the device, so you still have Windows Hello, making this device more secure and enabling you to log in without going through the traditional password system. It also, of course, stays very lean and agile with that thin and light two-in-one form factor that we really enjoy from Dell.

The next professional device I'll show is the HP ProBook 430 G4. This device, again, reflects very different kinds of modern workplaces. It's been ruggedized, tested and certified for military usage. Think desert sun, think scorching heat, think wind, and yet this HP ProBook will keep working. It's got that reinforced aluminum keyboard to enable users to continue to input and work despite the environment. It's got 11 hours of battery life to enable on-the-go computing and in particular it starts at a price of \$599, a Windows professional device coming at \$599, really fun there.

So I've shown you create, a little bit of work, and now let's get to play, which is, of course, one of the really exciting areas as we are at IFA 2017 and think about what to buy this holiday. Our vision for gaming with Windows is to enable people to play with whomever they want, on whatever devices they want, with whatever games they want.

When we think about the Xbox console success that Microsoft's had and then, of course, Windows 10 PC gamers, who are incredibly intense and excited about their space, we're enabling significant experiences that go across the two hardware form factors.

One way we do that is through Xbox Play Anywhere, which Terry mentioned. And we have 25 titles that we've taken as established Xbox franchises, those titles that people know and love, and play on Xbox, and we've brought them into the Windows 10 PC environment. Those 25 titles are being added to every quarter as we continue to expand the roster and three of the latest are "Halo Wars 2," "Super Lucky's Tale" and "State of Decay 2."

So really nice to see the experiences that we drove across hardware. And another way that we're bringing it to life is something that was announced this week at IFA, which is a new holiday bundle from Dell. Dell has a new device called the Alienware Area 51. It's a super-powerful desktop PC. And for qualifying customers in five countries, if you buy that Alienware Area 51 desktop you get a free entitlement to "Forza Motorsports 7." You saw Kristina playing earlier "Motorsports." Well, you get the very latest version this holiday, "Motorsports 7," if you buy that Dell Alienware in five different countries, here in Germany, back in the U.S., Canada, the U.K. and Brazil, all Motorsports-loving countries with a great gift bundle for gamers in your life.

So now let's talk about some of the other hot gaming rigs this holiday. The first one is the Acer Predator Orion 9000. Now, I can't pick this one up, because it's about 60 pounds, because it's got amazing power. And it's a super-hot device that just starts shipping on October 1st. It's the first gaming rig with Intel's Basin Lake CPU, which is a variant on the Kaby Lake processor class. It's got 12 cores for super-fast, super-smooth game play on even the most complex games.

And, as you can see here, it's got quite an engineering -- a lot of engineering marvel packed into the chassis. One of the cool things is an ice tunnel that's built around the edges to help manage the thermals and keep the device cool, so really nice engineering from Acer.

The next gaming device that I'll show is the HP OMEN X 17, this also just starts shipping on October 1st. It's brand new for holiday. It's a powerhouse device with a Core i7, 4K UHD display, and the NVIDIA GTX 1080 GPU, so zero compromises for your gaming experience.

One of the special things about this device, it's a little bit hard to see with the bright lights on the stage, is you can customize the color of every key on the keyboard. So you can just see an array of rainbow colors here. But as you buy something like this HP you can make each key your own as you personalize this Windows device. You can also personalize it by upgrading the HD, the SSD, or the RAM. The memory and the storage are very configurable through an easy access panel on the back of this HP, so really nice engineering there.

The next device that I'll show is the ASUS ROG Zephyrus. This is one of my favorite gaming PCs and here's why. It's a top-end device, at the top of the performance stack, yet it's relatively mobile, weighing in at four-and-a-half pounds it's under two-thirds of an inch thick. Again, it's got that NVIDIA G-Force, GTX 1080 graphics card.

Also, the team at ASUS worked with NVIDIA's Max-Q cooling technology to do something really clever and let me try to show it closely on the camera. As you lift the lid of this ASUS you can see that there's a spring-loaded hinge on the bottom that lifts the bottom of the PC off the chassis and creates a vent where air can come in. As the air flows in the device stays cool and enables continued play on the hottest games of the season.

The last gaming device I'll talk about is the Lenovo legion Y720. Now why do I bring this one up? It's got a terabyte of storage. It enables streaming 4K video. And one of the really special things about this device is that it has Xbox Wireless designed into it. Like Xbox Play Anywhere, Xbox Wireless enables that cross-over of experiences between console and PC. So it's a protocol that Lenovo worked with us on and it enables peripherals, Xbox peripherals like the controller, to work with your Windows 10 PC.

You saw Kristina demo that earlier when she was driving the Forza game car through her controller, so a really nice experience from Lenovo. And it really is part of what we see with the Xbox Live subscription base. It's the gaming experience that's been growing 13 percent year-over-year. The number of subscribers has grown 13 percent year-over-year. And we're seeing over 40 percent of new users coming from non-console, so again, that crossover between hardware form factors.

So now that brings us to the sixth and final collection that I'll talk about for this holiday, which is our mixed reality collection. It's been a big week for Windows Mixed Reality. We started with a blog post. Terry shared some of his thoughts on the multi-year journey as we've been building this product and this experience. And some of the intricate engineering ingenuity inside the product that enables mixed reality to come to life.

Let me put the pieces together now. So we think about Windows Mixed Reality as an ecosystem with lots of pieces. It starts with the PC. It extends to the headset, controllers, and finally content that brings it all to life. So let's talk a little bit more about that. The PC provides that baseline experience. As you're interacting with 3D objects and 3D experiences like Kristina showed in her demo, mixed reality uniquely -- or the PCs make mixed reality come to life.

If you want to step up, the headsets that we'll be talking about in just a moment provide a richer, more immersive experience, or you can have HoloLens with that augmented reality experience. And let me break down what else we've been doing behind the scenes, specifically with mixed reality PCs. Earlier this week we announced two groups, Windows Mixed Reality and Windows Mixed Reality Ultra PCs, correlating, tying to different performance levels, different robustness of the hardware.

So I can announce today that we've been working with the OEMs to validate the first 37 designs into those two categories and we're starting more every week. We're making them available in private briefings with retailers, so if you're interested in assorting these

devices you can certainly talk to Microsoft or any of our OEM partners to get the scoop on the latest devices coming to market in these two categories.

We're really proud of the engineering work that we did with Intel to enable these mixed reality experiences on these PCs. There's been really deep work on the graphics to enable both the 60 hertz and 90 hertz experiences on the headsets. And we've enabled 8th Gen Intel Core and 7th Gen Core i5 CPUs to be working with these PCs. So really nice work on the PCs from Intel.

Now moving onto the second part of the ecosystem, the headsets, and Terry announced that all these will start selling on October 17th. You've also heard this week that pricing will start at \$299. We're extremely thankful to the hardware partners like Acer, ASUS, Dell, HP and Lenovo that are bringing these devices to market. And if you think about the uniqueness of each design, maybe the camera will pan across them, you can see the way that they provide choices in brand, industrial design and features.

Acer has a special flip hinge that enables easy on-off viewing of mixed reality. ASUS has a really unique polygonal design that has a special design touch on its headset. Dell offers distinctive white coloring and swappable pads. HP has a quick disconnect cable. And Lenovo, the Lenovo explorer, which was just announced last night, has a real focus on comfort. So a really nice set of experiences from the headset, working with the PCs.

Now the third part of the mixed reality ecosystem that I want to talk about is controllers. So these advanced motion controllers for Windows Mixed Reality I'm excited to show publicly. These help you move easily through virtual spaces. Now, if we can get, again that close-up you can see the Windows Home button here and if you hold the buttons down it lights up the LED constellation display. It's a nice aesthetic touch. But beyond that there's functional purpose. The constellation LEDs are tracked by the lenses in the headsets that Terry described earlier and enable tracking of motion, completely natural, so that you don't have to have any external sensors. It makes Windows Mixed Reality just plug and play.

The other function of these mixed reality controllers is that the buttons are configurable by application. What that translates to is an ecosystem of software makers and game makers who are all working to customize their buttons, their usage, with these mixed reality controllers. I'm happy to announce that these controllers will go on sale on October 17th, as well, with the headsets, and all of our Windows Mixed Reality headsets work with the controllers.

And the final -- and in particular, I also shouldn't skip the fact that there's special gift bundles, as well. So we've announced the headsets will start at \$299. Well, we've announced also that headset plus controller bundles will start at \$399 from select partners. The first two bundles being announced are from Acer and from Dell, and we're really excited to see those on holiday shelves.

So now the final piece of the ecosystem, which I was really excited to get to, is the content. On Monday in our Windows Blog we announced the first wave of partners for Windows Mixed Reality. Steam announced their intention to bring their full catalogue to Windows Mixed Reality and we're incredibly excited to see them and other tier one partners coming to Windows in the coming months.

You'll see compatibility with some of the biggest VR game titles, like "Superhot VR," "Arizona Sunshine," "Rec Room" and "Space Pirate Trainer." I was playing "Superhot" with the headsets and the mixed reality controllers earlier this week and I almost took a colleague out with a couple of wild swings. And it made me smile as I thought about the way my kids will experience this this holiday and beyond.

It's also not just this titles, but Windows Inbox apps, and 360 video that all change when you experience them in Windows Mixed Reality. Earlier this week I surfed through a barrel tunnel in the ocean and I skied down an Alpine mountain. And those experiences were very different in Windows Mixed Reality than I had ever seen them before. So we can't wait to bring this to the world in just a few weeks.

So as you think about all these pieces together, the content, the controllers, the headsets and the PCs, I think you see why we see Windows Mixed Reality as the most complete and innovative mixed reality ecosystem.

So in closing, thank you for watching our holiday device preview. Thank you for sharing our excitement about the momentum behind Windows Mixed Reality and let me introduce on stage the head of our worldwide consumer and device business, Nick Parker. (Applause.)

**NICK PARKER:** The incredible capabilities of Windows that Terry and Kristina showed plus that phenomenal device innovation from our partners and Surface that Peter showed creates amazing new experiences for our customers. It's that customer success that drives our partners' business success. And I'm going to spend a couple of minutes talking about our partners' business success and the opportunity looking forward as we see our vision for growth for the industry.

Let me start with last year. Last year was an incredible year of success for our partners. We left the year with over 500 million people running Windows 10. This is the fastest growing Windows ever. Twenty-one percent growth in the two-in-one form factor. This is form factors from 10-inch to 15-inch, from convertibles to detachables. This is the device where people don't need to choose between a tablet and a laptop. This is the best of both worlds. And with the premium PC device, these slim and light and beautiful, long-battery designs with exotic materials, solid state, 4K glass, incredible growth and success there by our partners as well. And, of course, gaming, there's monster growth in this category where we saw titles and devices and peripherals and services all grow at incredible rates. This is the growth that we see and, of course, it's this growth that's at the very heart of Microsoft's mission. And that is our mission to empower every person and organization on the planet to achieve more.

And that's set in the context of how we see the world. We see the world around us, the many devices in our life at the edge surrounded by many devices connected to these incredible cloud capabilities that bring them to life. In my house, my intelligent edge is my seven-year-old daughter's Xbox One S. She uses that device connected to her intelligent cloud, which is her Xbox Live account where she can see her high scores or her friend's high scores and play "Minecraft" across the neighborhood. The business professional's intelligent edge is that rich PC that they use wherever they go connected to Office 365 or their corporate network in the cloud leveraging the power of Windows Pro. And, of course, the explosion of IoT where we see these sensors and smart devices on the edge connected to the intelligent cloud where we take that data, we reason against it and return it as intelligence and knowledge. It is that mission coupled with our worldview that enables us to define our priorities for consumer and devices as we look forward in the next year.

We see these four clear areas of opportunity where we'll be working and investing with our partners to grow jointly our business and our customer success and satisfaction. The first being in the modern PC starting with the Fall Creators Update where we look at work, home and school as those three core areas where we're adding huge value with our partners.

The second, of course, is gaming. And we see gaming in two areas, both PC gaming as well as Xbox gaming. We just announced the Xbox One X, the most powerful Xbox ever. We'll see huge growth with our partners there as well as growth across content. And, of course, with Game Pass, our game subscription; or Mixer, the ability to turn you as a gamer into a streamer; huge growth opportunities in the coming year. And on the PC side where Peter noted those games from Microsoft where they'll be launched on the PC and the Xbox enabling incredible cross-platform play so you can harness the power of that great PC or that incredible Xbox One S or One X console.

And, of course, mixed reality, you heard so much about that today as we launched Windows Mixed Reality to the world, enabling everyone to participate in this new world of experience. And IoT, where Windows IoT and Windows IoT Core will connect with Azure IoT Suite and Azure, enabling an end-to-end platform which is secure, managed, reliable and serviced that no one else can offer.

As we look forward, we will see Windows push the frontiers of human experience in the coming years. Of course, today Cortana is on over 500 million Windows 10 PCs, but we'll see Cortana move to peripherals connected to those PCs and Cortana work on devices with no screens and connect directly to the intelligent cloud. Envision today was our first step in enabling mixed reality for everybody, democratizing it, making it affordable, easy to use, and giving people choice across content and devices.

And, of course, artificial intelligence, which will be infused into every one of the devices at the edge and between the devices enabling scientific breakthroughs and at the same time enabling the things we do in everyday life to be simpler, easier and safer. We see

this opportunity at global scale, every day 1 billion people wake up and use Windows. This is a responsibility that we take incredibly seriously.

And that returns us full circle to Microsoft's mission of empowering every person and every organization on the planet to achieve more. And this is not about 1 billion people, this is about the child and their first affordable PC who learns to read and write and may visit places they can't afford to go. This is about the busy professional on the road using their business PC to connect across geographic distance or across language, or maybe just work remotely so they can spend more time with their family.

I'm inspired by the incredible things we do together, and I'm humbled by this incredible industry and what we can achieve. Please let me leave you with a video of how technology can change your life. Thank you.

(Applause.)

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