Steven Sinofsky, Julie Larson-Green, Antoine Leblond, Michael Angiulo, and Chris Jones: BUILD Keynote – Day 1

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ANNOUNCER: Ladies and gentlemen, please welcome president, Windows and Windows Live division, Microsoft, Steven Sinofsky. (Cheers, applause.)

STEVEN SINOFSKY: Well, good morning, everybody. We are pretty excited to be here — wait, this is Microsoft — we are super excited to be here today. (Cheers, applause.) I'd like to welcome everybody to "Windows 8."

So, today, we're going to talk about Windows 8, and it's a launch. What we're launching today is we're launching a new opportunity for developers, a new opportunity for you to express yourselves and to get the most out of PCs, no matter what size or shape.

And so we're going to talk about a lot of new things today about Windows 8, and we really couldn't be more excited to share that with you, to share it with everybody who's listening in on the Webcast, and even some of the folks on the Windows team all around Microsoft. So, let's just go ahead and get started.

I want to get started by talking a little bit about Windows 7. It was three years ago at this conference that we unveiled Windows 7 with our first developer preview of that product, and we've come a long way since then. And we're very excited to share that we are approaching over 450 million copies of Windows 7 sold. (Cheers, applause.)

But wait, it actually gets better, because today, actually sort of like Friday at like noon, I can share with you that Windows 7 consumer usage is finally greater than Windows XP usage. (Cheers, applause.)

You know, when we talk about improving our product along the way and responding to the needs of the customers and the marketplace, one of the things that's very exciting about how we've managed to improve Windows 7 over that time is, you know, we've delivered over 1,500 product changes to Windows 7 since we released it to manufacturing. And so those are not security updates, those are just things that added small things, that fixed features that you said weren't quite right, and also addressed some of the challenges in the product; but over 1,500 product changes since we RTMd.

Also since we RTMd Windows 7 we released Internet Explorer 9. So, we're excited to have reached a point where Internet Explorer 9 is the fastest growing Windows 7 web browser. And it really brought a whole new dimension to browsing, and the whole idea of hardware acceleration, and that the device you use and the hardware it has and the operating system you run on do matter to web browsing. So, all those fish swimming around really fast make a huge difference in everyday browsing.

And we also are pleased to share that we have over 542 million people using our Windows Live services. So, whether it's Hotmail or Messenger, SkyDrive or signing on with Live ID, half a billion people every single month use Windows Live.

And so with Internet Explorer 9 and Windows Live we're talking about some foundational elements of what will become Windows 8.

So, we want to start talking about Windows 8 by talking a little bit about this changing world of computing. Things are a lot different than they were three years ago with computing, and they're a lot different than they were in say 1995 or the last time Windows underwent a pretty significant and bold overhaul.

So, you know, first, form factors and user interaction models create a whole new set of scenarios and opportunities for you. I mean, it's incredible to think about the evolution of desktops to laptops, convertibles, to now small slate computers or, as we call them, Windows tablets.

These form factors really have changed the way that the types of software that you can write and the solutions that you can deliver to customers, and it's just incredibly exciting what we can do.

You know, touch is unbelievable. So, we talk a lot about touch, we did touch in Windows 7, we probably thought that there were other things that we could do, and so we've really pushed a lot on the ways that we can deliver touch to you.

You know, and I think touch is going to become a huge part of interaction, and what we're going to see is something that I don't think a lot of people are expecting, which is as soon as you've used touch on a PC, you want touch on all your PCs. So, people who say touch is only for small devices or it's only for lightweight things, I promise you, the minute you use a touch device with Windows 8, by the time you go back to your laptop, your desktop, you're going to be hitting that screen, and I promise you'll have fingerprints all over your monitor if it doesn't support touch.

You know, mobility is a whole new dimension to computing these days. It used to be that it was enough to be able to just carry your laptop around, put it down, plug it in and use it. But now you want devices that you can use while you're carrying them around or just seated kind of uncomfortably or reclined. A whole new way of using computing has really arisen, and we want Windows to respond to that.

You know, you guys want much richer connectivity and sharing between applications. The idea that applications are silos and don't talk to each other or talk to each other through very narrow interfaces,

that's just not a rich enough interaction model for customers. They want much more. They don't want apps to stand alone, they want a web of applications.

And we also know that you want a stronger connection to your customers, that you want to be able to reach all the customers that are Windows. And with Windows 8 you'll be able to reach everybody that has a Windows PC with our product, and sell them, offer them, provide them the software that you write, that you learn about here today.

And we also learned that the world is different because services are an intrinsic part of the software that everybody uses. You just don't write an app anymore if it doesn't connect to some web backend, doesn't share information or consume infrastructure from a service. So, it's very important that we recognize this as we go and evolve Windows 8.

So, what is Windows 8? Well, it's going to be hard to sum it up now. We're at a developer preview stage. But I want everybody to think about two important elements of Windows 8.

First, everything that was great about Windows 7, well, we took that and we made it even better in Windows 8. So, if you've got a Windows 7 PC, everything that runs on that Windows 7 PC is going to run on that Windows 8 PC.

And so we've got a huge base of support and an amazing body of success upon which to build, and Windows 8 builds on all of that. And that's one of the things that we mean by a no-compromise solution; you get to build on all of that success of Windows 7 as you move forward with Windows 8.

And that was a very bold thing that we chose to do. We didn't abandon the success of Windows 8 and all of that work, those professional applications, those entertainment applications. All of that work is an integral part of Windows 8.

And then we did something that we took a step back and we said, what's the boldest thing we could say? And what we said is we're going to reimagine Windows. From the chipset to the experience, Windows 8 reimagines what Windows can be. And we mean so many things by that, and you're going to hear that word a lot.

What we really want to talk about today is how from the chipset — and we mean the work that we've done on Windows for ARM all the way up through a brand new user experience that's touch first but equally at home with a mouse and a keyboard — we have a new range of capabilities, scenarios, form factors, all enabled by this bold reimagination of Windows 8.

And, you know, what we mean, like let's look at the roles of working on ARM. You know, the role of an operating system is to help you, the software developers, do two things, first to abstract out the hardware and peripherals that are connected to your software, so that you can write software and express your creativity and work on a broad range of hardware. But then when you want to get access to that hardware, to the unique capabilities that the world of hardware bring, Windows's job is to let

that all surface and to let that shine through so that you can build unique solutions for unique hardware.

So, Windows 8 takes that bold step and reimagines the kinds of hardware that Windows can work on, but at the same time allows you to take advantage of all of that unique hardware.

So, we're going to talk a lot about all the roles of hardware and user experience, but I do want everybody to know that the demos that we're showing you today are equally at home on ARM and on X86. So, we're very excited on the progress that we've made, and we have a whole roll of machines that we're going to show you as we progress throughout the day.

Now, what are we going to do to show off reimagining Windows? Well, we think that the best way to do that is to let the product shine. Now, we are at the developer preview stage, but that means the product has a lot of features to show.

So, we're going to do four big demonstrations for you today. First, we're going to show off the Windows 8 experience and how we reimagined the way that you could interact with the PC from the very basics of starting programs, switching programs, and running applications.

And then we're going to show you how to build these incredibly cool what we call Metro style applications. They're full screened, they're immersive, they're touch-centric, and we're going to show you how to build those from the ground up using world class development tools.

And then we're going to show you the hardware platform that all of this runs on, and we're going to show you the incredible range of form factors and the incredible range of hardware that you can run on, hardware, peripherals and devices you can run on.

And then we're going to show you how that all connects up to cloud-based services with Windows Live, and how Windows Live can become an integral part of your Windows 8 computing experience.

We're going to bring this all to you in a series of demonstrations, but that's going to only scratch the surface of Windows 8. It's a bold product. We have over 100 sessions here today. And this afternoon we're going to do these big picture sessions where each one of these topics gets a really deep dive from the architects of that area, and we're just going to spend a lot of time really introducing you to reimagined Windows.

So, I want to start off with the Windows 8 experience, but before I do that, I know something is on everybody's mind. They're like, you guys, you're going to add a bunch of code, and then Windows is going to get bigger, and it's going to get slower, and you're going to layer all this on top, and you're going to lose sight of fundamentals.

So, you know what, we didn't. I promise you, we did not lose sight of fundamentals.

Some of you might remember a machine that I held up three years ago. It's one of these netbooks. Does everybody remember those? This is the machine I held up quite a while ago, and it's a Lenovo that was one of the first generation netbooks. And it has 1 gigabyte of memory, an Atom-based processor, and it was very cool. This machine has been around the world. I used this as my primary machine for about two years.

So, it's actually running Windows 8, and it's running Windows 8 in a pretty cool way. So, let me show you how well it's running Windows 8.

This is that very same machine running Windows 7 SP1. This is Task Manager, Windows 7 SP1, and you see it's using about 404 megabytes of the 1 gigabyte of memory, Windows 7 SP1. It also has about 32 processes running.

This is Windows 8 today. It uses only 281 megabytes of memory. (Applause.) And it's dropped three processes in the process of doing that.

What does that really tell you? Well, when we showed up and showed you the Windows 7 preview release, I said that about half the memory was free. It turns out there's about 540 megs of memory were used, and there were about 34 processes. By the time we got to Windows 7 SP1, those 1,500 changes past RTM yielded about 404 megabytes of memory consumed out of 1 gigabyte and 32 processes.

So, with Windows 8 today, 281 megs consumed, leaving almost three-quarters of one gigabyte of memory free for you to use with your applications and your software — but don't each one of you use it all — and then 29 processes.

So, that's quite an accomplishment, and we are very, very focused on the fundamentals of Windows 8. You will hear lots about that as this week progresses, and there are a lot of sessions about that.

But it's super important to understand that everything we're showing you today is built into Windows, it is Windows. We're not building layers on layers. We've built everything natively into Windows.

So, how does that work? Well, I think the best person to show off the user experience is the person responsible for all the specifications and all the features in Windows 8, and that's Julie Larson-Green, the corporate vice president of Windows Program Management. So, let's invite Julie up. (Applause.)

JULIE LARSON-GREEN: OK, let's get started. Here I am on my new Windows device with Windows 8 running on it, and I have my locked screen across the front. So, when I resume from sleep, I go right to my locked screen where it shows me all the at-a-glance information that I might want to know about, things that have been happening while I was away. It shows that I'm supposed to be doing a demo — a good thing — all my email messages — it's a light day — and all the things, the battery, Internet connection, other things I might want to see.

When I'm ready to start using Windows, I just swipe up with my finger, and it goes to my new logon screen. This is called picture password, and very easily I'm going to press on my daughter's nose, press on the lemonade and draw a line, and very quickly on my mobile device I'm logged in. (Cheers, applause.) And now you all know my password, but luckily it's easy to change.

Before I get going any further, I want to show you a couple things that will help you follow me in the demo. We turned on touch points in the demo. So, when I press on the screen, you're going to see my finger in a little circle there. And that's just turned on so you can follow me without an over-the-camera shoulder.

So, let's take a look at the start screen. The start screen is Windows. This is the place you come to when you start Windows, and it's a place you go to get to all the applications that you guys are going to build that people are going to love. All the applications that I have on here today are just samples that we've written to showcase the platform, not announcing any new utilities or any new features in Windows; they're simply written to show off what the platform is capable of doing.

So, I'm going to go through here and I'm just going to swipe to the right, and take a look at all the programs, swiping to the left, and let's look at what these tiles are all about.

Each one of these tiles represents an application. I have a tile from my Windows Live mail up here telling me that Matt Berg has just sent me a message. I have my calendar, I have my news reader on my current feed, I have paused music. So, I scroll down, you see the other applications. Some of them probably look familiar to you: Task Manager, notepad, the pinned people, people that I want to interact with, I have a bunch of games, and everything that is on here is personal to me and it's only the things that I want on my screen. And it's very easy for me to go ahead and customize and rearrange and make it look exactly like I want.

STEVEN SINOFSKY: So, this start screen, it's not just a launcher for programs. The start screen represents a unification and integration of program launching, switching between running programs, and also notifications and gadgets that are all integrated into one start screen. So, you don't have to look all over the place, you guys don't have to write code all over the place to integrate with Windows; one place makes it really super convenient, and it's highly customizable.

JULIE LARSON-GREEN: Right. So, here I am with my — I'm not in Redmond today, so I'm going to go ahead and take this off the screen. I'm going to drag it out. It doesn't go into a mode or anything; I can automatically drag around to where I want it to go. I can even use two hands to arrange it. I dropped it. I'll go back in, I can easily just drag around and rearrange, go ahead and flick it to the end, and drop it here, pick this one up.

So, you saw how I'm kind of scrolling it along lists. If I want to get faster access to all the places in my program list, instead of scrolling along many, many pages, I'm going to go ahead and pinch with my finger. So, watch closely. I'm going to go like this, and it's going to zoom me out to see the entire set of the things that I have on my system. So, I can very easily get to new places, get to the games group, I can rearrange these as well. So, I can drag it out, just like I did with the other ones. I can position things

in a new place, which makes it super easy for me to go and rearrange and get access to the things I really care about.

So, I have one group in here, and I can name these groups and order these groups. This one is a games group. I just swipe down and select the group, and I can name the group using the onscreen keyboard. I'll go in here and click games, save that, and now I have games. And then to go back, you just do the same gesture on the way out, I just pinch and go out. So, it makes it very easy for me to customize and rearrange and get exactly what I want on the screen exactly the way I want it.

I can also customize the look of my start screen and my user tile, and that's pretty easy to do, too. So, I'm going to click here –press here, go to my new user tile, and we have a built-in webcam with Windows, and this computer has both a front-facing and back-facing. And unfortunately to get a new picture I have seen what I look like on these webcams, not doing that. So, I brought Mort, and he's going to be my picture for today. Whoa, I need to get out of there. I'll click there, and I'll go ahead and decide that that's what I want, select it, and change my user tile.

And now if I go to locked screen, all the pictures and things I have on my system, I just click and change my locked screen.

So, I've showed you a little bit about how to personalize Windows —

STEVEN SINOFSKY: All with a touch-centric control panel as well.

JULIE LARSON-GREEN: — personalize Windows and now let's launch some of those Metro style applications that you guys are going to be building.

So, let me go down to the end here and launch a game. This game is actually really fun to play. It's a touch first, full screen, immersive application, and as I drag across, I'm going to start to play it, and it does three-letter words, so that makes it easy, and I don't mess up that much.

And I can continue launching by going back to the start screen. I'm swiping my thumb from the right-hand side of the screen, and bringing up start. I'm going to launch my news reader application, which is another Metro style application.

Now, these applications, the user interface for these applications you get by swiping up from the bottom, and here I can add the new feeds, I can refresh, remove or whatever capabilities your app wants to have, they come from what we call the app bar.

When I click into this headline here, it's going to give me a newspaper-like layout for me to be able to read my blog, and really fast and fluently I can swipe through and read my article.

Let me go back to start, again swiping from the right, and launch a popular social networking app. Using open APIs we created a sample application here. I'm going to go into my newsgroup and check out my news feeds.

And I'm going to launch a little video. And I know this video has soundtracks, so again I'm going to swipe from the right-hand side of the screen, and bring up the settings in context of playing the video. I have access to all my system settings that I might want to do while I'm working with apps. Here I have the sound muted. And above this I also have the settings for the application itself. So, the applications share the setting space with the system settings to make it easier for people to not have to go out of context of what they're trying to get done just to change the volume or access something about your settings of your app.

So, here we are back in my video, and to switch between these applications I just go ahead and swipe out from the left-hand side of the screen, goes fast and fluid to get back to where I was. If I want to view two things on the screen, I can dock on to the right or to the left, and then continue swiping. It is prerelease software. Let's dock it this way. Come on. There we go.

And so I can easily do two things at one time. So, I can add to my news feeds while I'm watching my movies, play my games while I'm watching my movie or doing my homework.

STEVEN SINOFSKY: Of course, Windows is multitasking from the kernel on up, and so all we're showing here is the fact that two applications can always be running in Windows. And this ability to dock them is a really cool opportunity for you to sort of create like a heads-up view of your application.

JULIE LARSON-GREEN: So, every application has both that docking view and the side view.

Now, I'm going to launch an application that we are shipping with Windows 8. It's Internet Explorer. It's for Metro style, and it has here loaded a web page for me. And you can see how fast and fluid the browser is, how easy it is for me to pan and zoom around in this application. This is all built on top of Internet Explorer that you see today, Internet Explorer 9, all hardware accelerated, and it makes it super-fast and easy for me to get around in my web pages.

STEVEN SINOFSKY: It's also completely chromeless, if you notice, and I don't think anything is better than an entirely Chrome-free browsing experience.

JULIE LARSON-GREEN: I couldn't agree more. (Laughter, applause.)

STEVEN SINOFSKY: Oh, I get it, I know what I just said. (Laughter.)

JULIE LARSON-GREEN: You're so funny.

So, swiping up from the bottom I bring up the app bar again, the user interface element for Internet Explorer, and I can do all the things you'd expect to be able to do in the browser. I can turn on in-private and do in-private browsing. I can create new tabs, go into my pinned apps, launched a pinned website.

STEVEN SINOFSKY: Or do that later.

JULIE LARSON-GREEN: Or not.

I can also just easily type into the browser, and type in my URL using the onscreen keyboard. Let's see, I'm going to go to Whole Foods.

Let's skip over to this other machine.

We're in Internet Explorer and swiping and zooming, I bring up the UI, and we're going to add a pinned — there we go. (Cheers, applause.)

Now I'm going to go back and type in my URL, go to this Whole Foods page, and I can just pan and zoom around and do all the things that you're used to doing in the browser.

So, let's go ahead and do a couple new things. I'm going to go ahead and select this text here by just selecting it and dragging. And it's always something that you want to do when you're on a web page, you often want to send a snippet of some content around to someone or send a link or a URL. You end up having to leave your application, launch another application, find the person you want to send it to, and copy and paste in the content or copy in the link.

With Windows 8 it's possible for applications to interact with each other much more directly and help the customer, the users stay in the context of the application that they're doing to complete their tasks, and we think this will create a whole new set of scenarios for you to create new applications.

So, I'm going to use something out the right-hand side. We call these things out here on the right charms. And the charms are the way that the applications can power the system and add new capabilities to Windows.

So, I'm going to click the Share charm, and when I do that, I see all the applications that support the Share contract, which you'll learn a lot more about in Antoine's presentation in a little bit. It also has kind of an MRU list of the people that I've frequently shared with in the past.

I'm going to launch an application called Friend Send, which is a sample application that we wrote, and you see that the content that I copied from Internet Explorer shows up inside this application. The application can show the kinds of capabilities it has to do with the content coming from Internet Explorer.

STEVEN SINOFSKY: You can kind of think of sharing as a very semantically rich clipboard almost that when all of your applications can share with each other, even with applications that they didn't know about when you write your application. So, you don't have to try to figure out how to get connected to everywhere else, we'll help you do that through the Sharing what we call Contract.

JULIE LARSON-GREEN: And as I'm typing here, you're seeing auto-complete and spell checking. This is also something that —

STEVEN SINOFSKY: Wait, slow down, spell checking throughout the whole system. (Applause.) I was going to be pissed if they didn't applaud for that one. (Laughter.)

JULIE LARSON-GREEN: I don't think you cook, so I'm going to choose somebody else here. Let's see, maybe my friend Alice, and I'll share that.

So, without — now I can get right back to browsing without having to come back and find where I left off.

I'll bring out the charms again and go back and show you a couple other ways that applications can power the system using search.

Go into search and here you see search pretty much like you would expect in Windows 7. I can search my applications, my settings, my files, and this is what you'd expect to see and pretty much what everyone does today, which is search your local hard drive or search the entire universe over the Internet. My Bing application here will go ahead and search the entire Internet for me.

But with Windows 8, applications can make their content available for people to search directly. So, while in context of looking for something, it's very easy for an end user to go through and find and filter the content based on the applications that you've created.

So, here I have my music app, I'm going to search for Viper Creek. I think you guys are going to see Viper Creek on Wednesday. I can go ahead and launch my music from here, start playing music. And if I still want to see what's going on with Viper Creek in some other context now, I go back to search and I can search for tweets or any other application that has knowledge about Viper Creek, and quickly search through and see what's happening there. So, applications are really powering the system with new capabilities. And as you get more and more applications, the system gets richer and richer.

So, here I am in my social networking app. I'll show you one more way that applications can add power and show their content for people to interact with on Windows 8.

So, here there's going to do a little tweet about the concert that I just went to when I went and saw Viper Creek Club. So, it was a cool concert. Look at that auto complete there, huh? I've typed concert on this machine before.

And I also want to add a picture. So, I pressed the little picture button, and it took me right to my hard drive and my pictures folder, and all the pictures that I have on my hard disk are right here.

And I see that I have one, but often I have pictures in other places that I have access to. I have access to them on friends' social networking sites, on my own social networking sites, and those social networking sites can add the capability to share content from them right into the file picker.

So, I'm going to choose one that we write called Photo Feeder that has some pictures from my friend Sara, and I'll go ahead and select her picture. So, I can have pictures come from a variety of things. I

don't have to copy them to the hard drive to be able to access and use them; they can stay stored in the cloud and inside your application, and then be accessed and used without having to copy them to the hard drive.

So, I'm going to go ahead and import these.

STEVEN SINOFSKY: Feel free. (Applause.)

JULIE LARSON-GREEN: So, I think this amazing white one looks good, so I'm going to go ahead and click here, and I'm going to tweet that. And there you go, my tweet is live.

I'm going to go back to start, and that was really a super quick overview of some of the new things about the bold new Metro style interface for Windows 8. I've showed you how launching and switching applications and getting notifications is super-fast and fluid, I showed you how applications can be side by side, how applications power the system with new capabilities and new functionality, how apps can talk to other apps, how apps can talk to the cloud, and this works across all of your Windows devices.

STEVEN SINOFSKY: Actually here's another machine that Julie is logged into, and it's a pretty cool machine, too. So, I can pan around. Look, it sticks to your fingers just like you would expect. I can scroll all the way over here. I can launch the Bing app that I can't see. And then check this out — well, I can't see. And then if you look here, you could actually see that there's Mort, the picture that Julie took before, and it synced all the way over here, and there I could go and change the user tile and you can see the big picture of Mort that Julie just took, and it synced its settings over here, and we'll talk a lot about that soon.

Oh, and what kind of machine is this one?

JULIE LARSON-GREEN: This is an ARM-based machine. (Cheers, applause.)

STEVEN SINOFSKY: Well, thanks a lot, Julie. That's just a quick look at the user experience of Windows 8. (Cheers, applause.)

You're going to get so addicted to using this product, I can't wait until you experience it.

But I bet more than that you want to understand how to build the apps for it that we just showed you, and so let's talk about building those apps.

Now, to build those apps — actually I made a mistake. Let's make sure we talk about the Windows 8 experience and what you saw.

What you saw was fast and fluid. So, when we set out to design Windows 8. The whole idea is you should be able to move through things really quickly, touch-centric, keyboard and mouse if that's what you want. It's got to be responsive, alive, and beautiful. I mean, just from the minute you sign on and

you see that start screen, you saw everything's moving, everything's animated. Tiles are live. You can control that as a developer and you can control that as an end user of the system.

But the rich animations, the Metro style apps, it really feels like a different system. It's fast, it's fluid, it's snappy, it's responsive, it's alive.

All of the applications that you can write that are Metro style are immersive and full screen. It allows you to write applications that get the full attention and full focus of your customers. There's touch first with a keyboard and mouse that works just as well as a first-class citizen, your choice of interaction. It's so important to the fundamentals of Windows 8 that you have this no-compromise experience. If you need to do a lot of input, you need high-precision user interface, you can use a keyboard and a mouse. You have the touch experience that's right there. And, you know, I promise you're going to want all three, it's going to be great. It's a web of apps working together.

So, what we set out to do is not do what you see in so many other platforms where the apps are these silos and they barely know about each other. They go through tiny APIs to do things. We had the bold notion that apps should work together as a web of apps on your machine. That when you get additional apps, the system just gets richer and richer so that when I add an app and I can share out, other apps know how to pull information from my app. If I want to pull information from apps, I just do so without having to know in advance all the apps that are on a person's machine.

And then you can experience this across devices, as we show with syncing, and across the PC architecture. No compromise for form factors, whether it's a desktop, a laptop, or one of these Windows tablets. We didn't show it because it's hard to project, but you can rotate these, you can use them in any proportions and we'll talk a lot more about the different form factors in a little bit.

So, that's just one of the demos for today, and that's the Windows 8 experience. Now let's talk about what it's like to build those applications. This is the BUILD conference, and so now we're going to build them.

What's the Windows 8 platform going to look like? OK, well, here is the platform that all of you know. This platform is — the best way to say it is it's extremely riddled with feedback from you over how these different parts don't exactly always work together.

We've got the C# and VB world built on top of .NET and Silverlight, we've got the C and the C++ world build into the Strong Win32 API. And then we've built the silo of HTML JavaScript on top of Internet Explorer.

And I think I've gotten a few pieces of mail and a few tweets and a few other things about how these things don't always all work so well together. So, what I want to show you is the bold move we made to reimagine the Windows 8 platform.

So, the Windows 8 platform for Metro style applications lets you pick the language that you want to use to build your applications. (Cheers, applause.)

No matter what tool you want to use, we've got a language for you and a way to write that software. The way that we do this is we start off with the Windows kernel. The Windows kernel is the most robust, reliable, scalable kernel that exists and we're very proud that we're bringing it forward, and that's the work that we do on fundamentals whether it's networking and connectivity or process and scheduling, and all the fundamentals of the operating system, some of which will be on display later.

What we've done is we've reimagined the Windows APIs and we call them the Windows Runtime, or WinRT. WinRT provides over 1800 different objects for you to use to build your applications. First, there's an application model. That application model supports low power, it supports the full-screen and immersive applications, and it supports this modern way of building software.

There are communication and data objects, graphics and media, devices and printing. And all of these together are natively built into Windows. This is not a layer on top of Windows, this is Windows. All native code built to reflect in different languages. So, you have the WinRT APIs and objects, and then we reflect those in C and C++ and C# and VB, and you can do your view in XAML if that's what you want to do.

You could also see those APIs reflected in JavaScript, and then you could use HTML and CSS to define your view. All of these work together in a unified tool set. You pick the language that you want to use, and you can build your own Metro style applications with Windows 8.

And we've done a huge amount of work to reimagine the whole way that we think of tools, languages, and the platform so that they're all coming together in a unified story for you. At the same time, we're bringing forward all of the skills that you've established and all of that code that you've figured out, we are going to show you how you can move all of that forward and be part of the Metro style APIs.

So, the best way to do that I think is just to build an app. So, let's bring up Antoine LeBlond, he's the senior vice president who runs our Windows app store. And so we're going to start by building the app, and then we're going to get it up to the store. So, let's bring Antoine out and welcome him to build some apps. (Music, applause.)

ANTOINE LEBLOND: Hi, everyone. So, I'm going to show all of you how amazingly easy it is with the new platform and the new tool to actually build these great Metro style apps. So, I'm going to jump right in here and what I'm going to do is start Visual Studio 11 Express, so this is a new version of Visual Studio that's designed to make it super easy to build all kinds of apps.

What I'm going to do is I'm going to hit "new project" here. Right here, you're going to notice something that Steven just talked about, which is the availability of all these different languages. So, the platform is essentially agnostic to the language that you decide to use. You can pick the language and the technologies that you're most familiar with, or you think are more applicable to the kind of app you're building and just use that.

STEVEN SINOFSKY: I just want to dwell on this for a second. So, there you have these templates that are standard, and then you can just scroll through and pick the language you want to start with, and you're going to get the same templates in each one.

ANTOINE LEBLOND: That's exactly right.

STEVEN SINOFSKY: The Windows RT just supports all the language out of the gate.

ANTOINE LEBLOND: Exactly. So, in particular, you know, there's this sort of bold bet that we've made to bring these Web technologies like HTML and JavaScript to the platform really are going to enable millions of Web developers that exist today to participate in this amazing new opportunity to build these apps for Windows.

Steven did point out these templates a little bit. You see here that we actually have some pre-built templates in the tool that will give you a great way to get started. These are fully functioning Metro style apps. They give you a great starting point.

But what we're going to do here is we're going to build sort of a Web app or a JavaScript version starting from a blank application. I'm going to show you how incredibly easy it is to do this. So, we're going to call my app Photo Doodle. And I'm going to just give it a name, hit OK. And what the tool is going to do here is it's going to create basically a small template app. And I'm going to describe what you're seeing really quickly.

If you're a Web developer, this is going to look incredibly familiar to you and super simple. I have a default.html file for my markup, for my semantic markup. If you look at what's in there right now, it's all the normal stuff that you have at the top of an HTML file.

I have a default.CSS file that's basically there for my styling rules, and then I have a default.js file for the script behind the HTML file.

So, we're going to start building something here. I'm going to jump right in here into the body of the HTML and I'm going to insert just three lines of HTML.

STEVEN SINOFSKY: We're going to use a couple snippets for this big demo just because, well, we don't want to —

ANTOINE LEBLOND: You don't want to watch me type. That's right. So, there are basically just three HTML elements in here. There's a heading tag that has just — it's going to stick the title of my app at the top. Then I have this canvas element, which if you're an HTML5 developer, you know what this is, this is one of the cool new things in HTML5, it basically gives you a 2-D drawing surface that you can use. And then just a button that we're going to stick at the bottom of the HTML page.

I'm going to go into the CSS file and just put a couple of styling rules in here. All I'm doing, setting the background color for the canvas so that we can actually see it on the screen, and also setting the typeface size for the heading.

I'm going to write a tiny bit of code here. Now, this you'll see here that in the template, it gives me some very clear guidance on where I should stick my code. So, I'm just going to call an initialization function here. And what I'm going to do is just insert it here. I'll show you really quickly all I'm doing here is basically capturing the mouse events on the canvas and hooking them, and then drawing lines between all the mouse movement points, and that's going to let me just sort of scribble on my canvas. So, 23 lines of code or something.

STEVEN SINOFSKY: And this code is great, HTML5 would run in a browser.

ANTOINE LEBLOND: That's exactly right. I'm going to run this right now and it's going to run locally here in Windows 8, but I could take those things, hoist them on a Web server, point my browser to them, and they would just run like that.

So, I just hit build and run here. And what it's doing, by the way, this is interesting, it's JavaScript. So, it's not compiling it, it's not linking it or doing anything like that. All it's doing is just packaging all that stuff up, installing it on the system, and running it.

STEVEN SINOFSKY: So we have a new format, and app package that you'll learn a lot about over this week.

ANTOINE LEBLOND: That's exactly right. So, here's my little app. It's not particularly beautiful, but you can see I can touch on it and the scribbling works and I can use — one thing that's interesting is I can use the mouse — I even have a stylus here and I can use that. And you'll notice I didn't have to write any special code, actually the input stack in the platform does a lot of clever work to make all those things look the same and work the same.

So, let's go back. This is nice, but it's just basically a Web app, it's not particularly Metro style.

STEVEN SINOFSKY: OK, go, go.

ANTOINE LEBLOND: Anytime you want to applaud — (Applause.)

So, let's Metro-fy this a little bit here. So, what I'm going to do first off is I'm going to enter a couple lines. In my initialization function here, I'm going to insert just the initialization code. So, all this is doing is hooking the click event on the button. And I'm going to go write a little function that's going to get called when I get that click event.

So, I'm going to scroll up. So, this is sort of the first bit of real Windows 8 code that you're going to see. And what I'm trying to do here is I want the button to bring up a file-picker dialogue so I can go pick a photo and actually stick it in that canvas, that way I can scribble on it.

And if you look at this first line of code here, what you see me doing is actually calling into the Windows runtime API, and what it's doing is it's creating a file open picker object, this is going to look really familiar to you if you've ever written call the common file dialogues or anything like this.

What it does is it just creates the object, it initializes it by giving it a start location, telling it the kinds of files that I want, so here we're looking for image files, setting the default view to thumbnails, and then it brings the thing up and basically it can act with it asynchronously, and when I pick the file, it's going to just open it and then basically take the bitmap and put it in the canvas.

STEVEN SINOFSKY: This is just a native control that you can call on from the Windows runtime, and we're calling it here from JavaScript, but you can call it from any language.

ANTOINE LEBLOND: That's right. Let's do one more little bit of Windows 8 magic here. I'm going to initialize something called this data transfer objects. And basically, what I'm doing here is I'm going to enable the client — so Julie showed sharing between applications. I'm going to show you how easy that is.

I'm just initializing this object here and I'm setting up a function that's going to get called when share gets invoked on this application. So, let's write the code for that. Again, this is four lines of code, it's super simple. I'm creating this object — it's registered, I'm creating this object, and then when it's going to get called, I'm going to take the bitmap out of my canvas and then basically pass it on to the system.

So, I'm going to run this now. Now what you're going to see something a little bit better. I'm going to go click on "pick photo" and here are my photos on my system.

STEVEN SINOFSKY: So that you now have the full touch photo picker.

ANTOINE LEBLOND: Exactly. (Applause.)

STEVEN SINOFSKY: Wait, wait, wait.

ANTOINE LEBLOND: You can see, as Julie showed, I can go into, for example, I can go into social items, basically. I have a little client for Facebook, but right there I can go pick photos that I actually have in my Facebook photo library.

STEVEN SINOFSKY: I mean, do you see what we just did? Like, with just a couple lines of code with the standard file dialogue, you're now actually pulling photos from Facebook because that sample application that logged into Facebook was on the system, you didn't have to know it was there when you wrote your app.

ANTOINE LEBLOND: That's right. We didn't write a line of networking code. (Applause.) So no networking code, I don't know the Facebook API or anything like that. It's pretty amazing to be able to just do that.

So, I'm going to pick a photo here. And here's a little photo of my dolphin. I'm just going to scribble on it a little bit. Maybe put, I don't know, sharks in there or something, give him a moustache. And then I'm going to share this out. So, I'm going to swipe from the right. Here's my share charm, I'm going to click on it. There's social apps, so I'm going to basically post it on my Facebook page.

And I'm going to go, you know, sharks, I don't know, what sound does a scared dolphin make? I'm not sure. So, there we go. And then I can just hit share in Facebook and what it's doing — so now it's transferring that picture over. Actually, it's doing it asynchronously. This was incredibly simple. Again, this is like four lines of code that I wrote.

STEVEN SINOFSKY: It's super cool. (Applause.) But not particularly Metro.

ANTOINE LEBLOND: Well, it doesn't look very good. The layout's all messed up and all that stuff. So, let's go try and fix that. And we're going to fix that with a tool that you guys might have heard of before. I'm going to open this in Expression Blend. Now, those of you who know Blend are going to go, well, what are you doing? Blend is a tool for editing XAML, it's not a tool for editing HTML.

Well, new version of Expression Blend basically takes all the great stuff that it can do with XAML, and it's able to do it with HTML and CSS as well. (Cheers, applause.)

OK, so here we are in Blend. So, what I'm going to do is let's start by making this look better. So, I'm going to go to this assets tab. And what you're going to notice is a long list of pre-build controls that are really there to allow you to enable sort of a lot of these Metro behaviors and these Metro looks that we have that are part of the design language for the application.

STEVEN SINOFSKY: So these are all the Windows Runtime Metro style controls. And later this afternoon, you'll get to explore all of them throughout the course of building a big, long app.

ANTOINE LEBLOND: That's right. And they work with HTML apps and HTML and JavaScript apps, and the same set of controls work with XAML-based apps, we'll talk about that in a second. What I'm going to do is I'm going to insert an app bar. So, this is the little bar that sits at the bottom and swoops up and down. I'm going to make it dismissible and transient, so that's the thing that makes it actually swoop.

I'm going to come back here, and what I want to do is I want to take that button that's right down here and I want to put it inside my bar. And the way I'm going to do that, actually, I'm going to go into the DOM Explorer on the left. This is actually a clever little thing. If you think about what it's doing, it has to interpret what the code does to actually generate this DOM, so DOM gets generated at runtime. And I'm just going to drag it into the app bar.

STEVEN SINOFSKY: So the app bar is just a div on the HTML page.

ANTOINE LEBLOND: That's right. So, what I'm going to do now is I'm going to just — I'm going to switch back over here and I'm going to change the position to make it absolute, and that way I can just

kind of drag this button to where I want it and make this look the way I want. OK, so far, so good. The button is where we want it.

The other thing I'd like to do, actually, is to center this canvas. So, this is — if you've written — if there are Web developers in the room and you've written Web apps, this is where things get a little funky and a little hard. When you're trying to lay out an application in a world where browser windows can be dragged and resized, it gets really hard. People do this with all sorts of — you can write tons of JavaScript to react to the events and relay out things. You can use tables, a lot of people use tables, but the tables were really never designed to do layout that way.

STEVEN SINOFSKY: And this is really important for Windows 8 Metro style apps because you can rotate and we support all these different aspect ratios and layouts. So, using this HTML5 proposed standard for grid is going to be really cool.

ANTOINE LEBLOND: That's right. So, what I'm going to do is I'm going to actually lay out this body using this new CSS layout that we're working on called a grid. And I'm going to define my grid. So, I've set the body to be grid, I'm going to define it as just a simple, one-by-one grid. And that's going to allow me — so now I've got it defined. And now I can take my canvas object and I can just center it within the grid. So, we have center here, center here, and now it's centered within the grid.

So, maybe that seems like, OK, that's a lot of work maybe to just — I could have just made an absolute position and dragged it into the middle, but as Steven mentioned, you really have to deal with the different states that the app can be in. In fact, the tool gives me some really cool ways to do that. You know, as a developer, I might not — I might just have a laptop that I'm working on, and maybe I can't rotate the screen, or these apps need to be able to work on these high-DPI, 27-inch screens, things like that.

The tool makes it really, really easy to see these different states. So, for example, here's portrait. Here's a snap view, for example, when I drag the application to the left side of the screen, here's the opposite side of it, what we call the flip view. And I can see that the app actually does exactly what I want and reacts very well to those changes. (Applause.)

STEVEN SINOFSKY: And you can explore it at different resolutions and preview it all throughout —

ANTOINE LEBLOND: Exactly.

STEVEN SINOFSKY: So we've really made it easy to build these Metro style apps so that they work in the environment that your customers will have.

ANTOINE LEBLOND: Right. Right. So, I'm going to close this, I'm going to save the changes I made. We're going to go back into Visual Studio, reload these things. And I'm going to build and run again. And now you're going to see — here's my app, the canvas is centered, it still works, I can swipe up and get the app bar up, here's my pick photo button. And it all works perfectly. (Applause.)

So, I'm pretty happy with this. This, by the way, was 58 lines of code. Try writing that in another platform — I challenge you to do that in only 58 lines of code.

So, I'm happy with my app. What I'd really like to do is Steven early on talked about the number of Windows users who are out there. Obviously, I would love to be able to share my apps with millions and millions of —

STEVEN SINOFSKY: Hundreds of millions —

ANTOINE LEBLOND: Hundreds. Well, millions and millions, yes. So, what I'm going to do, I'm actually going to post this app to the new Windows Store. You might have noticed here there is a store menu in Visual Studio, so that's pretty exciting. And I'm going to pick upload package. So, what this is going to do, is this basically packages up my app into the default package format for new apps, and this takes me to the onboarding portal for the store.

So, this is the part of the portal where I would fill out all of the information about my app. Description, the screenshots, all sorts of things like that. I've actually filled out a bunch of this stuff already so you don't have to watch me do it. But I did leave this one section empty, which is the selling details.

And this is the part where I can pick a price for my app. Let's make it $8, it's Windows 8, right? You think I'm optimistic? It's 58 lines. (Laughter.)

Now, one thing that's interesting. You know, there's a rich licensing model that's built into the app format itself. So, I don't have to do anything other than select a price and the licensing model makes sure that only people who bought the app can actually use it and you can't just pass them around, and that as a developer, your work is protected.

One of the things that the licensing model actually allows is trials. So, here I'm going to pick a seven-day trial. So, this is going to let people actually download my app and try it before they have to buy it. I'm going to click a few more things here, set the release — just say when it's ready to go, I want it released immediately, we'll set a category for it, put it in photos. There is a checkbox here about accessibility. Obviously, accessibility support is really important. So, this reminds us to make sure that we've done all the right work to make our app accessible.

And I'm going to hit "save." Now, as you can see, I've actually filled out all of the information for my application. And I'm going to go click the certification. So, this is an interesting process. We are going to have a certification process for our application. Part of the promise of the store to users of Windows is that the apps that they're going to get to use are going to be safe, are going to be high-quality and all those things. And part of the way we do that is through this process.

These processes tend to be infamous at this point.

STEVEN SINOFSKY: Yes.

ANTOINE LEBLOND: There's a little bit — you know, they sometimes feel like these bureaucratic black holes that things just kind of disappear in.

So, part of the way we've been thinking about this is we want to go out of our way to make this process as transparent as we possibly can. So, part of what you're seeing here on the screen is actually we're going to do a really great job of showing you where in the process your app is.

STEVEN SINOFSKY: It sort of made so it's like ordering pizza. So, you get all of the steps really visible to you and you know exactly where your app is along the way.

ANTOINE LEBLOND: Exactly. One thing that's worth pointing out here is that there's a technical compliance step in this, which is where we check the APIs and make sure that you're doing all the right things technically. This is typically one of those really opaque things that people don't really know what goes on, what gets checked. We're actually going to give developers all the technical compliance tools so that they can actually run these in advance and know what the output is and just make sure that their app actually meets all the requirements there. (Applause.)

OK, so what we're going to do — let's go have a look at the store itself at this point. So, you've got to sort of figure that time has passed. What I've actually done is I actually submitted this app before so that we already have it in the store and I can show it to you.

So, I'm going to switch to this other machine here and show you the store itself. So, right up here at the top left, you'll see there's a store file. I'm going to click on that and show you — here I am in the Windows Store.

So, this is — actually our design philosophy for the Windows Store has been to just keep it really, really simple and make it easy for people to browse and find the kinds of things they need, or if they know exactly what they're looking for, they can just search and go find that app specifically.

It's organized into sections. This first section that you see here on the left is called the spotlight section, and that's a program section of the store. If you've used app stores or been involved in app stores before, this is a really, really important area because it's a chance for us to highlight and spotlight apps that are new and noteworthy, things that we think are particularly cool and really great apps.

There's also an opportunity for us in there to do some program content around just thematic things. So, for example, here we've built a BUILD section in the store where we can put applications that are related to the BUILD conference.

As I scroll to the right here, as I move over to the right, you can see sections or categories. There's a games category and then there's a social category, entertainment, and all those things.

I'm going to go back here and just drill into the games category. And what you see here, again, is a really easy-to-browse list of games and apps that are in there. I can filter if I want. So, if I want to go look at paid apps or free apps or something like that, that's all super easy to do.

One thing that's worth pointing out, by the way, the store of course is an app, and it's a Metro style app built using all the Metro style controls. You'll notice the grid control and things like that that I'm using here. It's actually built using HTML and JavaScript. So, if you think for a second that these Web technologies aren't solid enough or performant enough to actually build really, really serious stuff with, we've taken an app that is really, really important I think to Windows and decided to build it using those technologies, and it works just fine.

STEVEN SINOFSKY: More than fine.

ANTOINE LEBLOND: No, it works great, exactly. So, I'm going to go back up to the top of the store here, and I'm going to drill into this BUILD section. And this is where actually my Photo Doodle app is. So, if you look at the bottom here, you can see that it's in here. And I'm going to go click on the tile for it.

What you see here is what we call the app listing page. So, this is actually a really rich page that gives you, as a developer, a chance to actually market your apps. So, you can do things like scroll back down, show screenshots. I can give a nice, rich description of what the app does and I can really do the best job I can of trying to sell the app.

Also, for consumers or for users of the store, it's a great chance to see what the app does and what the requirements are and things like that.

STEVEN SINOFSKY: You see, your app gets listed in this cool, Metro style app that people can swipe through or view on all their screens and just have a great experience of being immersed in your application.

ANTOINE LEBLOND: That's right. So, I'm going to hit "try" here and we're going to actually download the app and I'm going to confirm. And so what you can see here, what it's doing is actually downloading the license and installing the app. It's already done. I'm going to go back to the start screen. If I go scroll over to the right, there it is. It's installed on my system, I can run it, there you go.

STEVEN SINOFSKY: Wow.

ANTOINE LEBLOND: One more thing. I'm going to show you one more thing in the store, though, yeah.

STEVEN SINOFSKY: One more thing.

ANTOINE LEBLOND: So we didn't — you know, it turns out, we didn't just invent applications this week.

STEVEN SINOFSKY: Yeah, like Win32 apps are all over —

ANTOINE LEBLOND: People have been writing Win32 apps, there are millions — I mean, it's a big part of what makes Windows Windows is these millions of apps that people have written.

So, I'm going to go back to the store here and show you something. We actually have — I'm going to scroll over. Let's see, where's the finance section? You'll notice down at the bottom left here, there's an app called Quicken. It's not a Metro style app, it's a desktop app. I'm going to click on it. Here's the product, here's an app description page for Quicken.

So, what we're going to do is we're actually going to list Win32 apps as well as Metro style apps in the store. One interesting part of this is that we're not actually going to require — because there has been tons of investment around these things, and all these apps, you know, these big apps, there's websites where they get sold and they have their own licensing models and all those things.

We're not going to require people to actually rewrite those things in order to have them in the store. We're not going to force them to use our licensing.

STEVEN SINOFSKY: Right. (Applause.) We love the ecosystem that's around Windows applications, and we want to make sure that it blossoms in this world as well.

ANTOINE LEBLOND: Exactly. So, in essence, what we're doing here is we're giving these Win32 apps a free listing service and exposing them all of the hundreds of millions of Windows users.

STEVEN SINOFSKY: Cool. Now, you mentioned some stuff about XAML and things like that. What's up there?

ANTOINE LEBLOND: That's right. Let's talk about XAML for a second. Any XAML or Silverlight fans in the room? (Cheers, applause.)

STEVEN SINOFSKY: I think they're all sitting over here.

ANTOINE LEBLOND: Exactly. So, this is something that probably looks familiar to you if you are a Silverlight developer. This is actually Scott Guthrie's blog. And a couple of years ago, he wrote a series of eight posts that basically described how to build this cool little Silverlight client app. It's a cool app because it actually shows off a lot about XAML layouts and XAML controls and data binding and network access and all those things.

So, what I've done is I've actually downloaded the code from this app and just tried to build it in Windows 8. So, what I'm going to do here is just hit F5. This is downloaded straight off that blog. And what you see is the app right here running — so it's running in the browser. This is the desktop browser, IE10.

STEVEN SINOFSKY: It's the same rendering engine as the IE10 that Julie showed you.

ANTOINE LEBLOND: Exactly. But this is a Silverlight app still, right? And it works exactly the same way it worked in Windows 7. One thing you'll notice, for example, though, is it's not a Metro app. So, it doesn't, for example, the input stack doesn't give me touch access and things like that.

STEVEN SINOFSKY: But it runs perfectly well because everything that runs on this Windows 7 PC is going to run on Windows 8 as well.

ANTOINE LEBLOND: Exactly. Exactly. So, it's part of the compatibility guarantees that we make. But what we'd really like to do is take this and make it a Metro style app. So, what I've done here is — I'm going to close this project and show you a different one that I've created that basically is just — I've taken all the files from Scott's project and moved them into a Windows 8 project.

Now, we're moving it from one runtime environment, Silverlight, to a different runtime environment, which is Windows 8. And the runtime environments are different. And so you're not going to expect this thing to just compile, but how close do you think it's going to get?

Well, it turns out, actually, that I've only had to make a handful of changes to this. And most of them are actually just name space changes.

STEVEN SINOFSKY: Yes.

ANTOINE LEBLOND: So the API changes are kind of reflected in these changes in the name space, and you can see some of that here. It's really just amounts to changing these using statements.

The other things I've changed in here are actually the networking API is a little bit different. So, the networking API in Windows is pretty sophisticated now because it gives you access to 3G networks and all these things.

STEVEN SINOFSKY: So WinRT has a very broad networking API that you're able to tap into. You'll have to change that kind of code.

ANTOINE LEBLOND: Exactly. And then the last thing is actually this app launches Web pages — in Silverlight, it does that through the browser, there's a launching API in Windows. So, I've only — basically, this is a handful of changes I've made. I mean, it's three places in this file, and then there's another name spacing in another file.

I'm going to go hit F5 and check it out. So, now this looks pretty familiar, except that this is actually just a full-on Metro app, it's not running in the browser. (Applause.)

STEVEN SINOFSKY: We're not even close to done.

ANTOINE LEBLOND: So one thing, though, you know, it doesn't really look like a Metro app yet, and it also doesn't do some of the things that make Metro apps Metro apps, you know, like participating in this web of apps and things like that.

STEVEN SINOFSKY: But you still used all that code.

ANTOINE LEBLOND: Exactly. I've reused basically — I didn't change any XAML, I didn't change any of the data binding code, all that stuff just worked. It just came across. Everything you know about that applies here.

What I'm going to go do is make one other small change here. So, I'm going to go actually into the XAML and you can see right here is where we bind the data to that list box view. I'm just going to get rid of that, and instead I'm going to bind it to the Windows 8 grid view. So, this is the grid view that I showed you in Blend earlier.

STEVEN SINOFSKY: It's a native grid view, written in native code for Windows 8 Metro style apps.

ANTOINE LEBLOND: Exactly. I'm going to make one other small change here. I'm going to go into this C# file, and I'm going to just write two more lines of code. And what this does is this is basically going to allow me to actually activate — to connect the search terms to this.

STEVEN SINOFSKY: So this is just another one of those contracts, and two lines of code connects you up to search.

ANTOINE LEBLOND: Exactly. I need to do one other thing. I'm going to go into the app manifest and I'm just going to declare that it actually supports search. And there we go. I've done that, let's build and run this thing again. Hey, and look at it now.

STEVEN SINOFSKY: Wow.

ANTOINE LEBLOND: That's starting to look pretty cool. (Applause.) So now it's in my grid, scroll through it, works great. Let's go over to the start page, and you can see here now if I do a search and I type something like "London" you'll see that actually image search, the second one from the bottom, is now enabled. I click on it so I can get my finger in the right place, and there it is, it got invoked there.

STEVEN SINOFSKY: Wow. (Applause.) Now, doesn't Microsoft use XAML in one other place?

ANTOINE LEBLOND: There is one other place. And I'm going to switch to another machine and show you one more thing: the phone.

So, I took, again, Scott's files and turned them into — actually, I just copied them into a phone project. And here, again, I made one small change, and it's actually that same place, the same code that we used to launch on the phone, it works a little bit differently. I'm going to hit F5. There we go. All set. One line of code.

STEVEN SINOFSKY: One line of code change. So, what we showed you was using the Windows runtime made a really cool Metro app, but then that same code you could use for different apps because it was just built on this rich XAML infrastructure.

ANTOINE LEBLOND: Exactly. So, all of your knowledge around XAML, around C#, around Silverlight and all that stuff, it just carries straight across to here and really lets you do things across all these different platforms.

STEVEN SINOFSKY: Plus, you can also write your apps in HTML5 and JavaScript, all using these amazing new tools between Developer Studio and Expression Blend.

ANTOINE LEBLOND: Exactly.

STEVEN SINOFSKY: Well, thanks so much, Antoine.

ANTOINE LEBLOND: Thanks, everyone. (Applause.)

STEVEN SINOFSKY: If you thought we scratched the surface with what Julie showed, we really just scratched the surface on developer platform and tools.

So, what did we just show you? Well, first and foremost, there's a new set of APIs and tools to build these Metro style apps. So, you get a modern platform with great tools, accelerated graphics, this very rich and immersive experience. The tools we showed enabled rapid and scalable development of these Metro style apps. Touch-enabled controls, a whole library of controls natively built into Windows that you can use.

Layouts. We showed grid layout, but there's a lot of work around layout and all the templates and the tools as well. And you have your choice of world-class development tools and languages. JavaScript, C#, VB, C++, C, HTML, CSS, XAML, all for X86-64 and ARM.

This is an extremely important point: If you go and build your Metro style app in JavaScript and HTML, in C# or in XAML, that app will just run when there's ARM hardware available. So, you don't have to worry about that. Just write your application in HTML5, JavaScript and C# and XAML and your application runs across all the hardware that Windows 8 supports. (Applause.)

And if you want to write native code, we're going to help you do that as well and make it so that you can cross-compile into the other platforms as well. So, full platform support with these Metro style applications.

Now, what's the opportunity? I said at the beginning of this talk we're here to launch an opportunity. The opportunity for building these applications is Windows. These applications will run on all new Windows 8 PCs, desktop, laptop, Windows tablets, small, big screens, all-in-ones — every Windows PC, whether it's a new PC or an upgrade from Windows 7 is your target customer. That could be 400 million people when this product launches. That's a market opportunity for all of you.

So, now let's talk about — Go ahead. (Applause.)

So, next up, I want to talk about hardware a little bit because, wow, we showed some new hardware over here, but there aren't any Windows 8 PCs yet. We're just getting started with that. A lot of you in this audience are the ones who are going to help us make the hardware and peripherals for Windows 8.

What I'd like to do is invite Michael Angiulo up on stage, and he's the corporate vice president for the Windows Planning and Ecosystem, and we're going to show you some of the coolest devices and hardware support that's available in Windows 8. (Music, applause.)

MIKE ANGIULO: We have music.

STEVEN SINOFSKY: We have music.

MIKE ANGIULO: So everybody wants a Windows PC that boots faster, that has a battery that lasts longer, that has great graphics, display, visual, touch, sensors, and systems with the thinnest, lightest form factors ever. Let me show you some of the advancements we're making in Windows 8.

So, Windows 8 supports PCs of the widest possible range — ARM processors, 600 processor servers with 4 terabytes of RAM — go ahead and fire this one up.

STEVEN SINOFSKY: The airport X-ray gave me a hard time with this one.

MIKE ANGIULO: Yeah, this is a system that's built with AMI firmware, it's kind of an extreme system. The last time I did a boot demo was when we launched Windows 7. We had an Acer that booted in — it's almost faster than a monitor can turn on. (Applause.) That was a full cold boot. That wasn't hibernate, that wasn't anything. (Cheers, applause.)

STEVEN SINOFSKY: Actually, most of the time it's just the fan spinning up on this thing.

MIKE ANGIULO: It can start faster than the fan sometimes. And it's not just reserved — like performance isn't just for big, crazy, powerful systems, this is the PC that you blogged about in the boot performance blog. And, you know, when you see it start up, you see that you don't have bios screens flashing DOS characters and stuff. Eight seconds — this is an in-market, shipping today PC. (Applause.)

STEVEN SINOFSKY: Yeah, this is a Windows 7 PC.

MIKE ANGIULO: It's a Windows 7 PC in market today, but UEFI is really important because it's not just about speed and having a boot that looks better, it's about security too. So, I'm going to boot this PC, except I'm going to do it from this infected USB key. This has got a root kit virus on it, which is a really nasty piece of malware because you boot from it and your machine will be owned before any software-based security could possibly keep up. But not with UEFI. I'm going to put it in here. Say boot from USB. And you can see it booting. Probably see it flashing. Boom.

STEVEN SINOFSKY: Boom.

MIKE ANGIULO: That's it. Invalid signature. And so what happened was UEFI checked the boot volume, it had been compromised, and now I'm going to turn this off and turn it back on, and it will be right back to normal. This is just one of the security features we have in the product.

STEVEN SINOFSKY: Yeah. Actually, there are tons of security features. Like, if this machine had also been using Bit Locker, then you can't even rip the drive out and use it in other places. So, a full range of security software. In fact, one of the things that we've got in Windows 8 is we've taken Defender and we've actually built a whole new range of protection, all the way up through antimalware, antivirus, all of that is built into Defender, should you want to choose to use it, or you could use your own security software.

But when I showed you that working set earlier, that 281 megs, antivirus is running in there as well.

MIKE ANGIULO: And this is actually the encrypted drive while it's running, so the security is everywhere. (Applause.)

So, it's good stuff because all Windows 8 PCs will be faster and more secure as a result. And there's a whole new class of Windows 8 PCs that are going to come into existence based on the new advances in SOC hardware.

STEVEN SINOFSKY: Yeah, like the job of an OS is really to attract all different — abstract out all the hardware for you so that you can take advantage of all the unique hardware. As I said earlier, what we really want to do is make sure that the unique value of each hardware also shines through in Windows, whether it's graphics cards or system on a chip or any of the hardware. And so we've got some cool demos that have some ARM hardware here.

MIKE ANGIULO: ARM and SOC hardware combined. This is a Qualcomm ARM reference design, this is the one we showed at Computex, this is an 8660 Snapdragon. It's hooked up to this debugging system here that's measuring power really accurately. And what's going on on this monitor is you can actually see the amount of power being used. It's very low. The system is not off, it's in a new power state called "connected standby" which is a really low-power idle state. You can see these little spikes that show up here. What's going on is Windows is coalescing all of the timer requests and all of the network requests, turning the radio on briefly, updating the apps, and then shutting the radio back down. So, when I turn the system on, it turns on with one click — or two depending on if you have demo gremlins.

The system is on. You can see the power jumps right up. It's an instant-on type scenario because it was never off. I can interact with the system here and you can see the power kind of changes as we're rendering and we're drawing on the screen. And then when I go to turn it off, I click it, immediately the power drops down. What's going on right there is the apps get a chance to pack up their data and then it's shutting down and it immediately drops back to idle. That's the kind of system — yeah. (Applause.)

STEVEN SINOFSKY: I mean, when we talk about fundamental performance, that's what we're talking about. We're actually taking the things that you'd experience like in phones, and we're bringing that to the PC architecture at the base kernel level.

MIKE ANGIULO: And it's one of the things that all of these SOC systems will be able to do. If you're good to the understanding connected standby session, you'll see the same power demo running on the Nvidia Tegra 3, we showed — it was nine months ago at CES was the first time we showed ARM booting at all. And all it could do is just boot Windows 8 up to the desktop in one touch.

STEVEN SINOFSKY: Yeah. I mean, it was just like a motherboard demo.

MIKE ANGIULO: We've made a lot of progress since then. We've got everything running here. We've got fast graphics, the kinds of apps that Julie was running, they're all the exact same apps. I can go back to the beginning, I can launch another app.

STEVEN SINOFSKY: So think of touch running on this prototype hardware.

MIKE ANGIULO: Yeah. It's fast, it's performant. It's the same build, the same build of those apps running here, the same build of those apps running on this TI system. This is an OMAP system, a 4430. And for the first time, no one's seen this one yet. This is an Intel system. This is an Intel 32-nanometer, Atom-based SOC development vehicle. I don't know if they're working on the name yet, but they're working on the power.

STEVEN SINOFSKY: Yeah. I mean, it's so cool. I mean, our partnership with Intel is great, and we're really excited to be able to show you the progress that they're making on all of this kind of low-power work as well.

MIKE ANGIULO: From SOC to high-powered systems. I have a couple high-powered systems here too. That performance thing is at both ends of the spectrum.

STEVEN SINOFSKY: Yes.

MIKE ANGIULO: Tiny systems and enthusiast systems. So, this is an HP enthusiast system, it's called the Phoenix. It's going to be announced later this week, the full specs obviously are announced now, but what I've got here is a USB 2.0-3.0 demo. So, this has two drives inside of it. The one on top that I have open is USB 2.0, and the one on the bottom is USB 3.0.

Now I'm going to copy a 1-gigabyte — I'm going to select and copy — sorry, I've got to stay out of the way of the camera — a 1-gigabyte file here. And you can see the new progress indicator. I'm more or less copying. I'm going to grab a 1-gigabyte file for my USB 3.0 drive and show how much faster USB 3.0 copies. (Applause.)

So, that's like —

STEVEN SINOFSKY: And we build this in — this is built in with a class driver. So, you don't have to worry about finding all the drivers. We've done a lot of work to make sure that this works everywhere.

MIKE ANGIULO: It does. And it works on all kinds of systems. I mean, this is a 3-terabyte drive that I put into that system. Windows 7, you could boot from up to a 2-terabyte drive. Windows 8, you can boot from a 256-terabyte drive. Which is, like, science fiction or something.

STEVEN SINOFSKY: Yeah, I got one of those in the back.

MIKE ANGIULO: You know, the reason that's actually important is while this drive seems enormous, it cost me less than $150 to buy and drop into that system. So, these things are going to be coming soon.

Another system that's a little bit extreme is my GX11 graphics, and I love this thing.

STEVEN SINOFSKY: This is great. This is like ice over here.

MIKE ANGIULO: It's not like ice, it's like lava, actually. Because what I have is I have three NVIDIA GTX5180s, GX11 graphics card, three.

STEVEN SINOFSKY: Three.

MIKE ANGIULO: They're linked together, they're running in SOI mode, hooked up to all the water cooling. But what this system is capable of doing on GX11 is turning about 700 watts of electricity into about 4.7 teraflops of computing power.

STEVEN SINOFSKY: How many teraflops is that?

MIKE ANGIULO: That's a woodchuck chuck — do you remember that giant, crazed super computer that — like the XPM or something?

STEVEN SINOFSKY: Yeah, like with the big tower —

MIKE ANGIULO: The nitrogen and stuff. It would take 2,500 of those super computers to do the same amount of processing you can offload to those graphics cards.

STEVEN SINOFSKY: And it's just Windows.

MIKE ANGIULO: It's just Windows running. That sounds crazy, but it's actually useful. With the direct compute API, you can offload any kind of massively parallel calculation, scientific calculation, modeling, all to that —

STEVEN SINOFSKY: Research labs are filled with machines like this.

MIKE ANGIULO: Sure. And dorm rooms, because they're also awesome for the most unbelievably realistic and violent games you have ever seen. This is a technology demo here. This is a technology demo from Epic. It's using the Unreal Game Engine, which is all GX11 powered, and this camera doesn't do it justice at all. If you get up really close to that screen, you can not only see incredible levels of detail, but the physics are all rendered in real time, and the whole rest of the world that's off camera is shown in a reflection in its eyes.

STEVEN SINOFSKY: It's like the thing is unbelievable.

MIKE ANGIULO: It really is. It really is amazing. You can see the wireframes, the tessellation, you can really understand the power of the graphics. But what's really important with Windows 8 is because GX hardware is so prevalent in the entire ecosystem, we built all of Windows 8 on a hardware-accelerated graphics platform. So, the reason that the UI is fast across this whole line is that everything has hardware-accelerated graphics, including the apps.

So, you write a Metro style app, it's got graphics —

STEVEN SINOFSKY: All the transitions, all the graphics, all hardware started.

MIKE ANGIULO: Yes.

STEVEN SINOFSKY: Which we started in IE9.

MIKE ANGIULO: Yeah.

STEVEN SINOFSKY: And really baking that into the platform at the native code level.

MIKE ANGIULO: I think they like that.

STEVEN SINOFSKY: Sounds good. (Applause.)

MIKE ANGIULO: Hardware-accelerated graphics, no extra work, just write the app and it runs from ARM all the way up to a system like this.

Now, there's another place that we are working with the ecosystem around displays. So, one of the things you might notice across all of these displays is that they've got touch and they're widescreen. So, first, let's talk about touch for a second.

When we were at Computex, I did this demo where I showed first pixel sensitivity. You know, you've seen this on all-in-ones, you've seen this on tablets. That's how the Windows UI comes up because what we wanted to do was get to the point where Windows only had to reserve one pixel around the boundary to activate all of the UI. And so that left more area here for the apps to take control.

STEVEN SINOFSKY: Sorry, I wasn't quite clear. You don't get every single pixel. We do reserve one pixel.

MIKE ANGIULO: Yeah, off by one.

STEVEN SINOFSKY: Off by one.

MIKE ANGIULO: Typical developer. So, there's more about touch that you can learn at these sessions. We have tools and we have tests and I'll show you one of the tests that we run back in Redmond where we're working with partners to make just the touch sensor glass go a lot faster. Here, Steve, let's pick this guy up for the camera. I'll give you the robotic finger.

STEVEN SINOFSKY: This is the robotic finger.

MIKE ANGIULO: It's a finger that's attached to a robot that goes and touches the glass in very specific places that we know about randomly and tracks motion. And this is a PC board that has a clock that's synchronized with the clock on the PC. Let me show you how it works. So, go ahead and touch that to the screen.

STEVEN SINOFSKY: So this is my robot finger.

MIKE ANGIULO: Yeah. And what's going on is it's sampling at over 100 times a second, it runs for about 10 seconds, it collects a bunch of data knowing where we touched and knowing where the screen responded. And because it's testing the hardware, it takes all of the software variables out of the equation. And we get a bunch of log files and important data that our partners use to make better touch hardware. And that benefits everyone because touch is across such a wide range of systems, you have to be able to trust that it's good to write an app that uses it.

Another place that you notice these displays, they're widescreen, I mentioned that. We're working with display vendors on trying to make the best possible experience for Metro style apps on next-generation displays. Now, the important thing to know is if a screen can run Windows 7, it can run Windows 8 desktop apps 100 percent of the time.

STEVEN SINOFSKY: Right, 100 percent. So, all that compatibility, even down to 1024 x 600, all your desktop apps continue to run on Windows 8.

MIKE ANGIULO: Which was even below the system requirements.

STEVEN SINOFSKY: Right.

MIKE ANGIULO: But we run on it anyway. But what happens is if you go to 1024 x 768, you get Metro style apps. If you have at least 1366 pixels across, you can do that side-by-side app stuff that Julie was showing you. And if you have 1366 x 768, you get all of the Windows UI with no compromises, and that's independent of aspect ratio.

STEVEN SINOFSKY: Right. So, we work on all — 16 x 9, 16 x 10 — as long as you have 1024 x 768, Metro apps run. And as long as you have 1366 wide, then you can get the side-by-side snapping.

MIKE ANGIULO: Right. And any form or shape or size. So, we talk a little bit about the touch sensor. There are some other sensors that Windows 8 both supports and exposes to developers. So, this PC has a three-axis accelerometer, it's got a magnetometer, and it's got a gyro. And you need to use all three of those in combination to make an app that responds like this. It's just a very simple, steering-wheel-turning app, but what's going on — that's exciting.

STEVEN SINOFSKY: Yeah.

MIKE ANGIULO: Well, I'll show you what's actually exciting about that app is that if you were to write code to try to combine the output from all three of those sensors yourself, you'd be time-synchronizing the data and then doing like math — it's complicated, but we've got a sensor fusion API, a single API that combines the output of all of those sensors to connect to those sensors and get the full orientation is three lines of code. That's Visual Studio, three lines of code. (Applause.)

STEVEN SINOFSKY: Just part of the Windows runtime, works across all the languages as well.

MIKE ANGIULO: It does. There is another sensor I want to talk about which is the near-field communication sensor, NFC. So, Julie showed you sharing between two applications and how powerful that is. We have tap-to-share scenarios between two PCs, too, and it's based on an antenna. In this case, it's in the back of this PC. I can take this tagged card that goes to the BUILD website, I put it here, I can touch the notification. Did that show up OK? And then you can right to the BUILD website. So, whether it's interaction with objects or interacting across PCs, NFC is also exposed, and there are some sessions that show you how to take advantage of that.

STEVEN SINOFSKY: Right. That card had an antenna in it, and it is an NFC card.

MIKE ANGIULO: There are a lot of other devices, too, that require software to really complete the experience. Today, whether it's a sensor that's inside the PC or an external peripheral like a printer or a webcam, you have to write a lot of software. It's not always software that you want to write. It's got to have its own installer, its own updater, and most importantly, it has to find a way to go and sync with the Windows UI, either trying to replace it or kind of run alongside it.

STEVEN SINOFSKY: Yeah, these are these applets that come on a system and there's like a control panel, there's a notification tray, there are things in the start menu, things on the desktop, all just to get your device to work. And so we've really worked hard with the ecosystem to improve that situation.

MIKE ANGIULO: Right. We want to make those apps Metro style apps. We want the functionality.

STEVEN SINOFSKY: Right.

MIKE ANGIULO: But we want customers to be able to have unified notifications, easier distribution for you, and full access to the underlying system, including integration into the UI.

So, I'll show you the first example. This is a Microsoft webcam, one of our HD webcams. And all of our HD webcams are going to ship with these new device apps.

So, you saw Julie before change her user tile. Going to the webcam now. Oh, my God —

STEVEN SINOFSKY: Now you can see — this is the difference between Mike and Julie here.

MIKE ANGIULO: Not flattering light. But because I have a device app, I can go here to where it says "more options" and I could see all of these special effects that come included. Just tracking my head around. And there's my user tile.

Now, the thing that was cool there is that it was right in the UI right where you expected it to be. You didn't have to do a second place, you didn't have to find it. Smoothly integrated, and it's a Metro app, so you get all the rest of the benefits of that platform.

Another example is a printing app. So, I have a simple app here that will print out a paper airplane that we wrote just to show this. I go to devices. And when I go to print to this HP printer, they created a device app. So, I get the standard print experience. I go here to more settings, and finally you can get all of the control of your printer right from within print.

You don't have to go to a special place, you don't have to go anywhere else, and —

STEVEN SINOFSKY: And there's an opportunity here.

MIKE ANGIULO: There is. The opportunity, if you go into their full version of that app, you can see your ink cartridge is low, here's where you can buy more ink, here's where HP as a partner can show off their own cloud printing services. So, the full opportunity is there, it's just done with as much work as Antoine showed to write one of these apps.

One of the places where these device apps have become really, really helpful is with connectivity.

STEVEN SINOFSKY: Yes.

MIKE ANGIULO: So if you have a 3G PC today, you probably have a second connection manager that you have to manage, passwords in two places, and the bars don't even match. You know, so now you can create a Metro style app to do device connectivity.

So, this PC that I've shown you is on AT&T's 3G network.

STEVEN SINOFSKY: A built-in 3G card.

MIKE ANGIULO: It does.

STEVEN SINOFSKY: That is connected up right now to AT&T.

MIKE ANGIULO: At the very top, you can see it says "connected." When I touch it, I can get some information that auto populates, 5 megabytes in the last day. View my account, there's a link right above it. And what that does is it launches that full AT&T app and so that app shows me all of my data, it shows me all my personal info, and I can go manage my account.

But check this out. The same exact PC I have here with a European SIM in it. So, this is a Vodafone account, but of course Vodafone is European, so here it shows AT&T, but would be roaming. Now, I don't want to connect on a roaming network just to do things like see my account balance or talk with my minutes. But I can go to view my account —

STEVEN SINOFSKY: We've worked a lot, because that sticker shock is really a bad deal.

MIKE ANGIULO: Oh, you don't want that surprise. So, here is the Vodafone account where I can click top up and I can go get more minutes. And what's really cool here is all that communication was done using network protocol called USSZ, so it's a sideband frequency that does all of that connection without making an IP data connection. So, that didn't roam and I can buy minutes and do all of that, all from within the app.

STEVEN SINOFSKY: And within all the Windows runtime, we've done a bunch of work so that you can roam to wi-fi Internet cafes all seamlessly. So, there's a lot of work built into that connectivity, which is abstracted out for your developers.

MIKE ANGIULO: Yeah, it's abstracted out for developers, and it's one of the places where developers working together with hardware partners can really differentiate their experiences right in line.

Another place where our partners are doing some really cool differentiation is on new PC form factor. So, I've got three PCs here, these are all Windows 7 PCs. They've been announced. You can't get them yet. They're shipping soon. Intel calls these ultra books. And the reason they do that is because these are PCs with a full core-powered processor in a super thin and light package. So, each one of these things is really amazing.

Here's an example. This one will resume from sleep as fast as you can open the lid. This one that Steven's holding — go ahead, this is really a sharp PC. (Applause.)

This one that Steven has is all aluminum. We showed this one for the first time in a Microsoft keynote at Computex, it's brushed on the bottom.

STEVEN SINOFSKY: These are super thin.

MIKE ANGIULO: They are thin. These are good PCs. Here's another one that's pretty extraordinary. This is a Toshiba. This one is made out of a magnesium alloy honeycomb space frame inside.

STEVEN SINOFSKY: Wait, say that again.

MIKE ANGIULO: It's engineering for "cool."

STEVEN SINOFSKY: OK, good.

MIKE ANGIULO: It's a super light, it's super stiff, it has no flex to it. When I close this PC, feel this, this is under two and a half pounds.

STEVEN SINOFSKY: It's like nothing.

MIKE ANGIULO: Yet, it's absolutely rigid.

STEVEN SINOFSKY: It's super rigid. Actually, this is super cool. This is what the folks at Toshiba did. It's actually thinner than the RGB and RJ44 connectors.

MIKE ANGIULO: Yeah. They actually had to bump out — it's thinner than legacy connectors. (Applause.) This is amazing. The reason PCs can get that thin and that good is because of the new levels of integration that are going on at the motherboard level.

So, I'll take one of these Samsung PCs you've seen so many times. Open it up, which I opened before. Take out the battery. But what you'll see is that the battery is actually bigger than the computer. These things are now mostly battery.

On this one simple card, I have a full-power PC that's a core I5, 4-gig, big solid state disk, integrated 3G wireless WAN, all of the sensors, in something that's the size of a couple of playing cards. And that's what you would see if you opened up these PCs. They're now just mostly battery. One tiny integrated motherboard and you have the entire Windows PC.

STEVEN SINOFSKY: Wow, the work that our OEMs are doing. (Applause.) It's just incredibly cool. I mean, in all of these different form factors. And all of these are going to be great Windows 8 machines, and that's one of the most important things about what we're doing in terms of being able to support the broadest range and types of scenarios and form factors for computing.

MIKE ANGIULO: It's both because of the investments that our OEM partners are making, and because of closer cooperation with us. So, of course you've seen this. I don't know if you guys like it. I'm hoping to get one, this is the quietest the room has been all day. This is a PC that we made together with Samsung. They invited us into their factories. We started with the shipping Series 7 design and we did a bunch of work together. We worked with a partner called Atmel who works on the touch controller and the display kind of integration. We worked with AT&T and Option to do the 3G module. We worked with STMicro to do the sensor fusion package. Worked with a lot of partners here. And as a

result, we've got bios that posts in three seconds, work from AMI, a super-thin power adapter. And this PC has been really useful to us internally as we've been developing Windows 8.

STEVEN SINOFSKY: Wow. How many of them did they make?

MIKE ANGIULO: Well, I was told it's not polite if you don't bring enough to share. So, I've got 5,000 in a warehouse next door.

STEVEN SINOFSKY: Wow! (Loud, extended cheers and applause.)

MIKE ANGIULO: OK, that was a little bit fun.

STEVEN SINOFSKY: So we call this the Samsung Windows Developer Preview PC. This is a super-interesting PC for you guys. Actually, we're going to give them away in seven minutes, the first 100 people — no, don't do that. (Laughter.) Later today there will be signs up, all that kind of stuff. But this is a PC for you, developers. This is a PC that will allow you to experience the Windows tablet and the development platform at the same time.

Now, think how cool that is. You're building an app, you're trying it out, you're lying on the couch, you're trying it out, and then you hit a bug. Well, what do you do? You just go into Visual Studio and you debug it right there on that machine. And you can do that — (Cheers and applause.) you can do that because it's running a second-generation core I5 in that tiny little package. It's got this awesome Samsung Super PLS screen. When you see it up close, you're going to be blown away. It's like at 170 degrees, you could see everything on that screen.

The folks at AT&T have done an amazing thing for you. They've included one year, 2 gigabytes a month of 3G access with this device. (Cheers and applause.)

And as Mike rattled off, it's got UFI, it's got 4 gigs of RAM, so that's so you can run Visual Studio, it's a 64-gig SSD, it's got an array of sensors. It's got all the 3-D sensors and also the near-field communication sensor. It's got a full-sized USB, a micro SD port, a micro HDMI port, it supports the pen because it has a pen digitizer. Also, something that you might not be able to see is right over here it's got a dock. That dock, you just pop it in and it's charging with the same charger that you could use mobile, and that dock has a USB port so you can attach a mouse and a keyboard. It's got external HDMI with a full-sized connector, so you could run dual monitors from this machine. (Cheers and applause.)

It also has Ethernet ports that you could remote debug it. And all of that is an 11.6-inch diagonal, 909 gram, 12.9 millimeter package. It's a machine for developers.

Now, what is it loaded with? It's loaded with the Developer Preview of Windows 8 for you to use. (Applause.) So think of it this way: You've got Developer Preview software with Developer Preview hardware. You can use the platform and develop on it at the same time. The image on this machine has all these sample apps and SDK apps you've seen. It's got all the tools that you saw Antoine use. And it also is imaged with what we call our recovery environment because, well, this is a preview. And

so I'm going to talk a little bit about recovery, but it's a whole new way to restore your machine to the pristine, new state that you're going to receive it later today.

So, I hope you enjoy that. It's a pretty cool machine, but it's a real way to experience the Developer Preview of Windows 8 with some preview hardware as well.

So, what did we just see from Mike? We saw a hardware platform that runs smaller and faster on the widest range of hardware. We showed native SOC implementations from Intel, from NVIDIA, from TI, from Qualcomm. We showed that you could write your applications in the tools that we're showing for Metro style apps and have them run seamlessly across that entire hardware platform.

And we provided integrated support for a broad range of new mobile peripherals, as well as a lot of other peripherals like USB 3.0 and a whole bunch of other stuff you're going to learn about later this week.

So, a huge amount of innovation, very bold steps taken in improving the hardware ecosystem and in the hardware platform for Windows 8.

So, I think I want to show you one more thing. I bet a few of you are still a little bit skeptical. So, I'm going to squeeze in an extra demo here. I want to show you using Windows 8 as like a professional platform. So, if you're like me, you still have dual monitors, a mouse, a keyboard, you've got a lot of stuff going on. You're probably someone using professional tools. And so you want to understand that Windows 8 is going to be a great PC for you as well. And, of course everything that ran on a Windows 7 PC will run Windows 8 on that machine as well.

So, here I am on a machine. It's a big desktop parked out in the back, and it's a professional workstation like you would use for development. So, a really important thing for running a professional workstation is being in charge of your PC, not having the PC control you. So, we've made lots of improvements in that way.

One of the things you're going to see is right when I get to my logon screen, down at the bottom you're going to see your PC will start in two days to finish installing security updates. That's the only warning you get, this subtle, low key warning, none of that popup with the countdown clock, warning, warning; you just see this nice Windows Update. (Applause.)

I'm just going to sign on with a PIN, which is another way you can sign on. And now I'm running Windows 8. Now, of course, it works just the same with a keyboard and a mouse. Here I am scrolling super fast across all the apps. I can scroll my mouse down into the corner, and get the start menu that shows the same as Julie showed when you slide that on the side.

I'm just going to go ahead and start a couple of apps here. I'm just going to show you fast and fluid. So, I just start apps, and I just keep running, and all you do is just keep starting those apps, just like you would expect. We are pros, so how about Task Manager. So, here's Task Manager that I've got up and

running. I just did that with the keyboard like everybody knows how to do. And these are just the apps that are running.

Now, we've got this cool, nice, new Task Manager that's designed for end users so that they can see what's really going on on their machine, and then just end task, and kill off anything that's running errands.

Well, what was that? You just saw that these applications are now suspended. Well, I just started those four Metro style applications, and now you know what, those applications are not taking up any CPU cycles, they're not draining the battery at all. They're in a freeze-dried state because I can't see them. And that's an important part of the new platform. And that's one of the ways that we're going to get extended battery life by supporting this. And you don't have to do any work. You just write your code, and the operating system kernel handles it.

So, what does this look like if you're a pro and you want to see some more stuff? Let's look at the new Task Manager. (Applause.) So, this is the new Windows Task Manager. It's kind of been given a facelift. We figure it's been about 20 years, so let's give it a shot.

The first thing you'll see is, you've got an immediate heads up display with a visual representation of the amount of memory, CPU, disk and network that any given application is using. Now, suspended applications remain loaded in memory, but you'll see they all have zero CPU. So, you can see that all the applications are available and they're grouped by background processes, Windows processes, even fancy little touches we did, like you could end a task, and then if you're on a core you can just restart it because you know you can't make it go away forever.

So, we also show you performance. So, here's a really cool view of how the forest can look with CPUs, disk, memory, in fact I could go here, I could start this, I could drag this file over to the desktop, and start a copy with a new fancy copy dialog, and then you'll see the disk I/O just spike, and you've got this cool graphical presentation of how copying is going. In fact, I can hit pause, and then the disk I/O is going to drop as well. And so a really cool way to take advantage of the graphics and the rich UI presentation.

This is a history of all of your apps, your Metro style apps on a machine, and it shows how much CPU time over the course of history, network bandwidth, and also how much your Live Tiles are consuming in terms of bandwidth. And you can see it presented, and that's just the way you could go up to a friend's machine and see what the heck is going on, which are the apps that might be causing some challenges.

If you've got some of those startup programs you're not sure, while I don't have any on this machine, but if you did, you would just see a list here, and then you can just manually disable them right here, right in the Task Manager. (Applause.)

If you've got a server, a hosted server, multi-user machines, you could see all the running programs and the resource utilization grouped by users. I've got a full detailed view that's got all the stuff you

want to see. You can hide and show columns. You can even right-click and go and do a search out on the Web for a particular .exe to see what it might be. And, of course, you've got the classic services view as well. So, all in the efforts to stay in control of your developer machine. By the way, I'm hitting the Windows key as I snap back and forth between the desktop and the Metro style apps.

Now, let's take a look at the Metro style control panel, because I want to show a scenario about really being in control of your machine. So, if you're like me what you do is, you have a machine, you do a clean install, and then you want to make sure you can revert back to a known state. And you've probably got a whole elaborate system of trying to put your files on the D drive, and doing all this other stuff. We've got a new bold way to think about how to do that.

We've got a new feature that's called Reset and Refresh. And here you are, it's to be able to refresh your PC without affecting any of your files. It's right here in the control panel. You go right here, you click Getting Started. Here's what's going to happen. Your files and personalization will not change. Your PC settings will be restored to all their defaults, and all of your Metro style apps will be kept, and all the other apps like malware and extra toolbars will be removed. I'm going to return to that part in a second.

And then, really, say you're done with your PC, you want to give it to a friend, donate it to charity, and you want to reset your PC and start completely over. Well, here's the other option, click Getting Started, and here's what's going to happen. Your personal files and apps will be removed, and your PC settings are restored to their defaults. It's just like your out-of-box experience.

We've got the Samsung Developer Preview machine set up to do this. Now, you probably immediately went, wait a minute, I do the clean install, and then I install more than Metro style apps. I'm going to install Visual Studio, I've got a bunch of tools. Well, it turns out what we've done to enable folks like you is, there's a super simple command line tool. You get everything set up, you run the command line tool, and that baseline becomes your refresh image. So, it's super easy. (Cheers and applause.)

Now, one of the reasons you might want to refresh your PC is because you want to do some performance work. You want to understand what is performing on my machine, and how does this machine perform. You might want to build a bunch of software. You might want to build a machine out, and then see what it's like before and after you install your apps. You might want to compare different machines, and different setups.

So, one of the things that we've done is, we've taken the tool from our lab, and we've built the Windows Assessment Console. And this is the way for you to run standard performance benchmarks on your hardware, and then be able to compare it over time on your hardware, or compare it to different machines. This is something that's available in our Windows Deployment Kit. It's really cool. You just go and you run these different suites of tests. In fact, you could actually you could do media experience, base Windows experience, boot and shutdown, hardware performance. We could do Windows 7 overall. We could even do things like run your battery down and give you an estimated battery life for that machine. Even idle energy efficiency. You could actually build your own series of tests, and take all the tests that we provide, and group them into a way that's really unique for you.

And so, then when you run the test, you get this really nice little chart, and it tells you all the things that are going on in the test, like this is video playback. It has frames dropped, and frames rendered. You get these little graphs. And then they line up and compare themselves to other machines, or other runs that you've done. And this is all just actually on the preview as well, and it's there available for you to take advantage of. (Applause.)

Now, of course, one of the key ways that you maintain control of machines is by remoting in, and using remote desktop. So, of course, we've built a Metro style remote desktop app. So, how is that? Let me watch remote desktop, and here's a Metro style app. Now, I'm now fully Metro, so you can see it's really fast and fluid. Now, the remote desktop client, and the desktop is still there. It has all the additional security features and things like that. I could share connectoids, and things like that. But I'm just going to go remote into this machine.

So, here I am remoted in. I now am remoted in on the start screen for another PC. Now, here's something that's super cool. I'm using a mouse and a keyboard for all this, but these monitors have USB ports, and actually have touch digitizers on them. So, I'm now remoted into a machine, and now let me touch this machine at hand. (Applause.)

But there are all these other affordances in the UI, and of course we've made them all easily available. So, if I'm just down, and I go to the bottom of the screen and right click, I actually get control of the terminal remote desktop client, and I could bring up the remote charm, and so these are the remote charms that I could go see. I could also go back to the bottom, and I could do things like bring up a keyboard to say, for example, just for fun, you're on your Samsung Developer Preview, and you want to remote in to your machine at home, you still have a keyboard that you can use virtually against that machine at home. A super cool way to interact with that.

We actually provide connection status, and also access if you're running an app to the app bar of that machine. So, I'm going to click here, and then these are all, these up along the top, just like Internet Explorer, using the standard Metro style controls, will be all the machines that you're remoted into with a live preview of the desktop that you're seeing. That's all with a Metro style remote desktop client.

So, now we've got remoting. We showed you local stuff. Now let's take a look at running some, I don't know, virtual things. A few of you might be using Hyper-V on the server. I'm running a 64-bit client with Flash, and this is Hyper-V running on Windows. (Cheers and applause.)

We've got a powerful enhanced Hyper-V Manager, all sorts of new stuff here. I'm just going to go ahead and create a new virtual machine. I can step through the wizard, new virtual machine. I can allocate memory. I can enable Hyper-V to manage that memory dynamically for me if I wanted. I can choose my network connection. I've got Internet access connection set up. I specified the VAC for storage, or use an existing one. I can also just go and install the operating system from a boot drive. I can even use the ISO, and so here's the ISO.

I've got some ISOs running over there. And I could just go ahead and keep running that. I could start it from right here and you guys know the drill. I just want to make sure you knew that we got Hyper-V and the Windows client for you to use. And of course, speaking of Hyper-V here's some VHDs and ISOs. I can double click on this VHD and that's going to open it and just like it's a local drive it's actually going to mount it as a drive right there in the new explorer.

I can go ahead and eject that and that drive will go away. Here's a handy little ISO, I could right click on it and mount it. I could also use the ribbon and mount it. I've got the new ribbon collapse here. I could go ahead and mount that ISO. ISO is getting mounted as DVD drives and then you could unmount them and mount them just like you would expect and so a super-cool way to interact with everything. (Applause.)

Now, it turns out what we've also done is enhance the desktop. So, it's not so, we've made the Windows professional platform even better for everybody to use in a day at work. We've got a new ribbon with a customizable quick access toolbar. So, I can take any one of my icons. I can right click on it and add it to the quick access toolbar. These can stick up here if you want or a default for that.

We've made a lot of enhancements, like one of the number one enhancements we made to all of Windows 8, all of it; this has added an up button to Explorer. (Cheers and applause.) And you could customize this quick access toolbar to have all the buttons that you would routinely use, if that's what you would like to do. Now, of course, most of us run multiple monitors. Even this Samsung machine is going to support multiple monitors. So, I bet you'd like to see a little bit of how we work on multiple monitors. Of course, the good old Windows key command still works and I'm going to go ahead and extend that monitor.

Now, you notice this desktop background is letterboxed a little bit. So, let me go ahead and extend this to two monitors. You're going to see both monitors up there and now notice how that desktop spans those monitors and is completely filled. That's because we finally enabled you to have a desktop background that fully spans multiple monitors. (Applause.)

Now, you're probably wondering like, hey, the task bar, so here it is set up as a default. So, let me right click on the task bar and bring up the properties of it. Now, this is the new task bar property sheet and it allows some new options for dealing with multiple monitors. So, right now I have it set to showing everything on both tab bars. So, if you're the kind of person that just moves back and forth between all of them, no big deal, but what about if you actually want to have something that's unique to each task bar. So, only apps that are running on a particular monitor are visible. So, then you notice everything fell off the bottom of the second monitor down here, but now I'm going to go ahead and drag this Explorer window over here. Watch this, there it shows up. (Applause.)

I notice now the running state of this Explorer window isn't there anymore and if I actually right clicked and ran another instance you see it starts up where the other one is and I drag it over here. Now, it's running here and running here, if I close it here it's no longer running there.

So, that's just a few of the options that we have for the new multi-monitor. We also have one that duplicates them on the main one and then if you have three monitors then the other two are going to be unique, as well. So, a couple of things on multi-monitors, now one of the things you're probably going is, wait a minute, how does this all work? Well, here we have the start screen and it's on your main monitor, but what if you want to shift it? Like, say, for example you've got some app you want to run, like you're going to run Visual Studio here, and then you're going to want it to just test out the apps over here. That's pretty easy, you just take this whole page down and it zips over to the other side, but over here back and forth, back and forth.

So, that was a keyboard shortcut and we also have a mouse command and a touch affordance for doing that very same thing. So, we have full control over the monitor layout and how we work even with the new start screen, and Metro style applications, so lots of stuff there.

Now, I'm just going to go back to a single monitor, so everybody can see what's going on a little better. And I just want to make sure everybody understands that, look, I'm a keyboard person and I want you to know that we thought first and foremost of keyboard people just as much.

So, I'm going to go ahead, like what's my favorite thing to go run on a keyboard, I do CMD and all of a sudden I'm in search. So, let me try that again, so you see what happened. So, here I am, start screen, nothing going on, I just go CMD and I've got that running. (Applause.) And of course I could tab around, I could search for settings, but I picked CMD, because it's our all-time favorite. What is it that you always do with CMD, so the first thing you do is, I've got to run that elevated. Guess what, right click on it, get it to see those options, run as administrator is right there.

So, that's there for all the applications, everything in the start screen has these kinds of applications just as well. Here's Visual Studio Express, I could pin it, unpin it, I could do all these advanced things right there. I can even pin it to the task bar on the desktop after it installs and installs on the start page. But, even cooler, I'm going to type CMD, control, shift enter, and I'm going to start an elevated command prompt just like we always have, just like you would expect to. So, straight from the start screen you have all the power of launching and starting applications in Windows just like you would have always expected. In fact, you've got keyboard shortcuts for all of these really cool things, like I can hit Windows C and bring up the little menu that's shows everything. I can even do I can do Windows F, no matter where I am and bring up search and start searching for files and for apps right there. I can also bring up if I'm in a Metro style application and I just want to stick to the keyboard, I can do Windows D and the app bar is going to show up for that application. Then I tab across, use the settings panel, and never leave the keyboard.

So, full use of the keyboard and mouse, even within all of the touch-first Metro style applications. So, we earlier showed you Internet Explorer 10. Of course, the whole reason for this is because we don't want you to compromise. We want you to have the full power of your PC, use the device in the form factor the way that you want to use it. That was a pretty bold thing that we set out to do. Here's Internet Explorer 10, this is actually Platform Preview 10. I started on a blank home page, but I'm just going to go automatically I get auto-complete just like you would expect. And then the keynote is live, I don't want to do that. That was not what I planned on, so I forgot that the keynote is going to be live.

So, here I am on the Bing page. So, this is pretty cool, because what I can do here is all the things I'm familiar with, like if you know all the keyboard shortcuts for using IE they all still work, like say I want to go first it's full screen and immersive, again, that chromeless experience. But, I want to go ahead, I like this Bing page, I want to go ahead and clone that. I hit control K and there's another tab. How do I know there's another tab? I right click up there, two tabs.

If I want to blank tab I hit control T, I get the same start screen you would have seen in Internet Explorer 9, with all my frequently visited pages. In fact, I go here to the Wikipedia page for HTML5. I can even do something like select something like HTML5 and I can do control-shift-L and it will do a search, sign on and do a search within that, the same as if I can type control-E and I get the search page, the search query for Internet Explorer.

So, all of these features for using the full screen Metro style browser, all the keyboard browsing works just like you'd expect. I can do things like right click and say copy link, open a link in a new page, all of this continues to work just like you would expect. In fact, let me show you Metro style IE a little bit more on this machine here and bring this up, because I want you to understand that this is Metro style IE, but it's the same HTML5/JavaScript Chakra rendering engine that's IE 10. And the IE 10 that's on your machine, which supports both let me show you one more thing, the IE 10 that's on this machine you can also go here and right click, and I can also open this up in desktop view. So, here's the desktop frame of IE. So, if you want to stick the desktop frame you could do that, all the Window Management, all the capabilities, it's the same rendering engine that you would have seen in Internet Explorer 10, the same rendering engine is across the same in Metro and in the desktop browser.

Going back to this tablet, I want to show you the Internet Explorer 10 Platform Preview 3. So, that's what's in the build that you have, it's Platform Preview 3. Here we've built a touch IE test drive. So, how many of you have had fun with the IE test drive? Well, here's some cool stuff that you can now do with IE 10. This is a multi-touch capable thing. So, here's one finger, here's two fingers, here's like five fingers all moving around, and this is all HTML5/JavaScript running on hardware-accelerated Internet Explorer 10, Platform Preview 3, so pretty cool stuff. (Applause.)

Now, Windows 8 is a product that's designed for everyone. Everyone around the world, no matter what your ability, no matter what languages you speak. And I want to make sure you see some of the features that we've built in to make Windows 8 universally accessible to people. So, I'm going to bring up the magnifier, and magnifier is the one that we've seen in Windows 7, but we've greatly enhanced it to support the Windows 8 Metro style UI and the desktop, as well.

So, I have these cool scroll bars on the side that light up. I could reduce and increase the magnification if I want. Then, I could also scroll over to the side and this is a touch machine and then I could go over here and touch out and show you the charms that show up, all using the magnifier. And that's pretty cool, because now I have full view and full access to everything. In fact, when I hit the start, now even if you're a developer and you don't normally use these tools you can actually zoom in and just see the pixels on a live tile and debug things really easily.

And one of the really neat things that we've built is that in this 2-D surface, you can sometimes sort of get a little bit disoriented. So, if I take my thumbs, and I hold them on both sides of the monitor, you are going to get this cool light up map that lets me find where I want to be on the screen. And then, as I let loose, then it zooms back into there. And this is just a way to make the product accessible for everybody. (Applause.)

But let me show you a few more of these kind of options, because I think this is super cool. So, I'm going to go up here and go to the ease of access settings. And so we have ease of access settings to support Metro style apps. Launch the little checkbox, we want you to test your apps running with these settings. But what if you've got just a giant monitor, a 4k monitor, and you just want to take advantage of making everything bigger. So, I just clicked on make everything bigger, and now when I'm using this, you'll notice now all the tiles are two across and much larger. So, this is an ease-of-access feature, but you're also going to find it pretty useful if you've got a lot of pixels going on. I'm going to go here, and go back to the control panel, and turn that off really quick.

We've also got a lot of support for people all around the world. So, I'm going to go into search. And as I'm searching, I can search for apps. But I want to bring up the onscreen keyboard. So, we have a bunch of different keyboard layouts, and a bunch of cool support. I have all the languages here that are installed on a machine. And I can quickly switch my onscreen keyboard to different languages, and have a whole lot of fun with that. I have three years of Russian in college, it's not going to help me now, and full access to all of the onscreen you have different layouts, here's the cool thumb-by-thumb layout, so if you're running your machine in landscape, you can have a great access. We've actually done a bunch of measurements to make this really cool. And we even have a new ink input panel, so that you can use ink input.

And so let me just show you some ink. One of the sample apps we have is an inking application. And I've got a pen. Now, this is super important, this is not just using a pen device as a styler. This is using a pen digitizer in addition to the touch digitizer. So, when I go to write, and I put my palm down, it's detecting that as touch. But as soon as I put the pen down, I can also write. And that's an incredibly important part of using a pen with Windows. (Applause.) I can erase, which I just think is super cool, and this app even shows off that this is not just an inking platform, it's a whole hand recognition and writing platform. I can click on the "recognize" button. That was not a good idea. And then I can show you in any language it works super well.

And then, finally, I have one more thing I want to show you here, which is that when Julie took her picture, and it showed a little more. Well, we have the ability to roam all of your settings across your Windows 8 devices. This is incredibly cool. So, first it's optional, but if you sign on to your Windows 8 machine with a Windows Live ID, all of your personal settings roam, your themes, your ease of access, your language preferences, your apps, your Web browser settings, your history, your favorites, a bunch of other stuff like task bars, settings, home group, mouse, and your account picture. And if your application wants to roam settings, it does; and if your application collects secured credentials, we can roam those. And Mike showed you some 3G and 4G data access. You can turn roaming off for your machine if you don't want to roam those settings on a 3G network. And this is all powered by Windows

Live. And I just want to make sure you see, if I'm on the desktop, there's that roaming desktop, because this machine has roamed up with the desktop that's in the back as well.

But all of this is powered by Windows Live, 542 million people are signing onto Windows Live uniquely every month. And so I think it would be really good to see how Windows 8 gets much better when you connect it up to an incredibly rich set of cloud-based services within Windows Live, and use some of the new Metro style apps that we've written to connect up with Windows Live.

So, no one is better equipped to do that than Chris Jones, the senior vice president for Windows Live. So, I want to invite Chris up to do a demo of cloud-based services for Windows 8. (Applause.)

CHRIS JONES: Thanks, Steven. I want to give everyone a sense of the things that we've been working on in Windows Live, and how a little bit of cloud, and new Metro style can really bring some new applications to life in the experience.

We took the bold step of actually rewriting all our applications for Metro style on Windows 8, and really making sure that they're connected and powered by the Live service in the cloud.

So, here I am on my start screen, and you can see that I've got Live Tiles right here. It's really easy for me to find out what's going on. I've got a new mail message from the Mail from my wife. I've got my calendar up, people messaging, and I can also see photos that I've shared or connected to the device. If I want to see what's happening with mail, I just click, and there, up pops Metro style mail. This is all written in HTML and JavaScript. And it's connected to my mailbox on Hotmail, but it's also connected to my mailbox at a glance on Exchange.

So, I've got all my mail applications right here, and I can switch between those. You can see that it's written to be immersive. So, I've got the inbox and the message. But if you're someone like me, you've got to go to your Exchange account, and you want to actually look at those folders. It's got folders right there. The full power delivered by Exchange Active Sync, the Hotmail to Exchange, or to other mail services that support Exchange access.

STEVEN SINOFSKY: Right. This Metro style mail client manages all of your mail accounts in one place?

CHRIS JONES: All of my mail accounts in one place, and because they're all stored in the cloud, I just type my Live ID into this PC, and they all just come down to this system. I don't have to worry about setting things up anymore, because all of the settings are roamed through Live.

You can see I can scroll through this list with touch. It does a really nice job. One of the things that I might want to do is actually check my calendar, and here is that Metro style calendar, and it's also written in HTML and JavaScript. If you'll notice, I can actually scroll through the events here. Really nice smooth scrolling, and I can scroll up and down here. And if I want to find out what's going on in my life, I look at all my calendars right here. So, this isn't just my calendar, but it's also any calendars that have been shared with me through the Live service show up here automatically. So, for me, my wife's

calendar is here, which means I can see what's happening with her, and with the kids, as well as what's going on in my life.

Again, I can switch between really nice views. There's a nice week view that I can flip through, or I can even go to month view in the calendar, and look at how fast and responsive it is to build this kind of application. And also, again, powered by the cloud connected to those services.

If I want to see what's happening with the people in my life, I can just click People, and let me go back to the top of this, and you'll notice that I've got People, and it's a connected address book. What the connected address book means, it means that for all of us we've got people we know on social networks, work email, personal email, and you want to bring one list of those folks together. So, we've written an app that does that. So, these are all my friends across Facebook, LinkedIn, my work, and my personal account, and I can actually just easily scroll through those and see what's happening.

STEVEN SINOFSKY: So, through the backend of Windows Live, when you connect up your Live ID to any of the connected sites, like Facebook, or anybody, you get all of those contacts available in this Metro style app.

CHRIS JONES: And it's just nice, because at a glance, I can see their contact information, what's happening with them, and I can go and catch up with what's new. And it aggregates that into a single contact card. So, I've got all their email addresses and other stuff that I want to use right on this PC.

The next application I want to show is photos. Photos is a great example of an application that's really designed to be cloud-powered. I take lots and lots of pictures, and probably all of us have tens of thousands of photos because of digital cameras. Some of them are even worth sharing with other people. And they're stored across the different devices that I have. So, I have ten thousand photos on my home PC, and I've got photos here.

STEVEN SINOFSKY: Mike has a hard drive for you.

CHRIS JONES: I've been looking for that 3- terabyte hard drive.

So, here for me, I've got now a photos app that keeps track of all of my photos in one place. I didn't have to tell this application my Live ID, because I'm already logged into Windows. It's also is connected to Facebook and Flickr because I've told Live about Facebook and Flickr, and now the photos app knows about those things.

So, right in this experience, I can actually just click in and start browsing through photos, and notice this is, again, written in HTML and JavaScript like Antoine showed.

STEVEN SINOFSKY: And all these animations, this is all built into the WinRC platform.

CHRIS JONES: Using those common controls and platforms, and you can see what kind of a rich experience you can build right from here.

So, if I want to go look at my Facebook photos, there's some mobile uploads, and notice that these are pictures that I've taken and uploaded to Facebook, and you can see that I have a nice picture from the BUILD conference. I took that this morning. I didn't have to put that on this PC. It's on Facebook, and because it's connected to Live, it just came down automatically nice in time for my demo. And then I've got photos on Flickr.

You'll see two other things here that I want to talk about and explain a little bit. One is this notion of a SkyDrive. You may have heard about SkyDrive, we've got a hundred million people using SkyDrive today. What we've done is really said, every Windows 8 user has a SkyDrive. Every Windows Phone user has a SkyDrive. In fact, if you've got a Live ID, you have a SkyDrive, and it's there for you to put your personal files and things you want to share.

It's also accessible to developers, and that's an important thing because it lets you as a developer access SkyDrive the same way you might have accessed the local file system. In our Photos app, we've done that accessing, and I want to show you. So, I can click on SkyDrive, and these are my SkyDrive photos that show up in the photo album.

STEVEN SINOFSKY: But you're navigating SkyDrive in our datacenters right here from this Metro style app?

CHRIS JONES: Right here in this Metro style app calling those APIs.

The other thing we've done is, we've made it so that you can actually connect your devices together through Live. Remember I talked about this notion of photos that are on my other PC? Well, you see this thing called "work," that's my work PC. And I can actually just browse right in here from the Photos app into my work PC.

STEVEN SINOFSKY: This PC is actually in Redmond, behind Microsoft's firewall.

CHRIS JONES: That's right.

STEVEN SINOFSKY: You're here, behind this firewall, and we're traversing, and just navigating your hard drive in your office.

CHRIS JONES: That's right and because we've got Live ID and a trusted authenticated connection on both of those PCs it's possible for that tunneling to happen. And just a little bit of cloud to do the firewall traversal, it really goes a long way in making the scenario happen. So, let me give you another quick demo on the SkyDrive stuff just to show you what's going on with SkyDrive and give you an example of the power of that when you talk about sharing in this Web of apps.

So, here I am in the pictures library, I navigated back and what I want to do is select some pictures to share. So, I'm just going to swipe to select and you know sometimes you just want to go through and find exactly the right photos, so I've got those three. Then I can swipe over, click the share charm and

notice that share comes up. Now, I'm going to click on Mail, the share for Mail, and there is that Mail app right there.

Notice that the three photos got captures and now they're going to be shared on SkyDrive. This isn't a feature that's unique to Hotmail, it's for any mail client you've got. So, I can send it right from my Microsoft email address.

STEVEN SINOFSKY: And you get auto-correct on the send, and also that whole pane is something you can build as an app developer so that when you implement the sharing contract you've got a great way to show all the pieces of your apps without the person leaving the context of the app that they're sharing from.

CHRIS JONES: Yes, and then I've got this connected contact list, so if I want to send mail to my friend Piero, I just type Piero, click it and there it is, and then I can type a subject, which is photos. And then right from there I'm done. I click share and send. So, that's going actually send that off hosted on SkyDrive and make an online photo album and then send a reference through the email. The fact that I can rely on that SkyDrive as an application developer is a very important thing, because it lets me just put stuff in that storage and then know that users can access it, because we've done all the work to host the datacenter and make sharing possible.

STEVEN SINOFSKY: It's really you're going to see, in this API that you've got available to you, it's going to be very rich and make it possible for you to integrate SkyDrive storage into your apps.

CHRIS JONES: So, let me actually I just brought up modern Internet Explorer and I want to actually show a couple of things, just for reference. So, this is SkyDrive the website. And then here, just to show you, those are the same photo albums rendering in the browser just using a Web browser connection. But, not only that, there's that work PC that I talked about. And I have full access to that work PC through the browser. Just to prove to you that I've got that full access there's the portrait gallery right there. So, I can click on that, navigate down to it, and let me just switch to tile view to show you, those are those photos. So, remotely through the browser I get back to any PC I've connected to live.

STEVEN SINOFSKY: You've shown a lot of photos, Chris, what about some other files?

CHRIS JONES: I know it's not the most interesting thing. So, let's actually just go and let's go right to the root of that drive and let's go into program files, like this is really the full the SQL Server Compact Engine, maybe I want to go fetch that. So, I just fetch any file that I want. As a developer maybe I've got projects on a PC where I want to go look at the source code for those things and I'm on a browser somewhere. And just go connect up to a browser, log into that PC and just go remotely browse through those files.

All right. So, that's a quick overview of what's happening here, why don't we switch over to the phone, because if you're like me you've got a phone that you use on a pretty regular basis, too, and that's important.

So, let me swipe up to my phone and here I am on my Windows Phone, this is Windows Phone 7.5 running on a new HTC phone. And the thing I really want to demonstrate here is that same power of having Live and a live service that powers the phone. So, what you can see here is, I showed those calendar appointments, well, there's that same set of calendar appointments coming down to my phone, so on the go I can see those. I showed those email messages, there's that same set of email messages showing up on my phone. All I did was type in my Live ID and then if you want to see photos, that's great. There's that same set of photo albums showing up on my phone, including the ones from SkyDrive and from Facebook.

Now, what I want to do right now is take a photo and actually show the audience. It's bright. I'm not going to take a photo of you. I'll make sure I take a photo of the clock right there. I'm going to take a photo and here on the phone you'll see that we've got a great feature we call camera roll. And camera roll is just a list of those photos that I've taken.

So, you can see up here I've got photos that I've taken of both that are on my camera roll. There's Les. We'll see Les later. And what happens is my camera roll is the same API connected to SkyDrive. So, it's just uploading photos as I take them to SkyDrive. Now, I'll switch to this great desktop PC and you'll see what happens for me to go and take that same experience, log in and be roamed. So, here I am on the desktop PC. I can swipe up.

STEVEN SINOFSKY: This is a cool all-in-one, touch-based desktop for Windows 7.

CHRIS JONES: This is an amazing system. It's built by Acer and it's got this great touch screen. Also, if you notice, this ability to tilt, you can really operate it almost like a table computer if you want to, for touch. So, here I am, I've got all the things showing up. So, there's those mail messages that you can see, which is great. So, I can go and see the same mail messages. What I did to set up this PC is the same thing I did for the others and the phone. I typed in my Live ID and my stuff came down.

Now I've got my calendar events that I can go check out. I can check out people on this PC. So, there are the people showing up. You can see those and now notice that all, it's going and fetching the tiles so all of the tiles are coming down. I can check in on a person if I want to, like Piero and I can actually see what's new with him, post funny pictures, and I can also browse to his photos. So, it's easy to stay in touch with somebody.

Then I can go to that Photos app and you notice that the Photos app is going to come up. I took these photos. So, let me go back to the stop, there's my SkyDrive and my camera roll, let's go into my camera roll over here, there it is, and the photo didn't show up, classic demo failure. Anyway, just to prove to you that that photo showed up let me go back to my work PC, or to my SkyDrive and I'll actually go into my photo section here. And let me go up to the SkyDrive camera roll, find it really quickly, there it is, and it still didn't show up, so I'm probably not connected to the wireless network, but we didn't get that to work.

I just wanted to quickly give you a preview of what's happening with our connected apps and the work that we've done through the cloud. Like I said, we're not releasing these applications today. This is a

first look, but we really have written them in the Metro style, as Metro style apps with the API. And a lot of the stuff that I showed you you're just going to get for free, because the settings for roaming and all of that just comes by writing an app and there are more sessions later on Live and SkyDrive and how you can take advantage of those services.

STEVEN SINOFSKY: Thanks, Chris. (Cheers and applause.)

So, you saw some awesome stuff with Windows Live and the cloud. First, just brand new Metro style apps, for Mail, Photos, Calendar, People. It connects not just to Windows Live, but to all of the services that you want to connect to through Windows Live. You can sync your settings across all your PCs and devices, and your phone, as well. You've got SkyDrive, not just for photos, or just for uploading documents through a browser, but you can access now your own PCs, all of your devices through the browser, or through the Metro style apps.

And as you'll learn this week, and they're live in the build, live APIs for SkyDrive, so you can build your own cloud-connected Metro style app that use storage. So, a huge amount of infrastructure is available to you as a developer, in order to tap into the power of Windows Live, but believe it or not there's a few things we haven't shown you.

There's hundreds of other features in Windows 8. Like I said, this is a bold reimagining of Windows. So, there are a lot of other features. So, quick, write that down, take notes, good luck OCRing that.

OK. So, we did show you some apps. We showed you a bunch of different apps; some of them were fun like building paper airplanes. They showed you some word games. We've got some animation games, we've got some sensor-based games. We've got all sorts of really cool stuff. Now, where do those apps all come from? They're all samples. Every single app you saw is a sample, none of them are shipping with Windows 8. They're just sample apps that exercise the platform.

So, how did we build those apps? It turns out we created 17 different teams at Microsoft, and each team has two or three developers. And then we started a clock and we gave them 10 weeks to build their apps and that was it, they had to go from scratch. It sounds pretty much like a challenge. And also, by the way, Windows 8, the build you got wasn't even done yet when they started.

So, they had a moving platform, moving tools, moving APIs, and they were busy building these really cool apps that you're going to become addicted to. Who were these volunteers? It turns out they were our college interns this summer. And, you know what? (Applause.) And 20 of them are right here, right now, who just want to say hi as the first Windows 8 developers. So, please, give a hand to the first Windows 8 at Metro style. Stand up guys. (Cheers and applause.)

How's that for a little end of summer event? I got to know these guys pretty well.

So, we showed you a lot of apps. We didn't even show you all the features of Windows. But, boy, there's a lot of stuff here. Let me show you the video of their summer of apps. They had a great time, and so they made this video for you.

(Video segment.)

Way to go, guys. (Applause.)

So, of course, you benefit enormously from their hard work because many of the sessions you're going to see this week are all based on the content and the work that we did to help all of them get up and running. And there's even a session that they're going to host this Friday that shows the work that they did over the summer. So, let's talk about getting this product out to people.

Boy, I bet you guys all want to know the path to us releasing this product. Well, the first thing first, there is a Windows 8 Developer Preview. IT includes Visual Studio 11 Express, Expression Blend 5, the SDK, the sample apps, and the Developer Preview. It's a pre-release product. You saw some of the little snafus today. There are going to be more of them. It is a developer pre-release.

But I will say it's something different than we did with Windows 7. You might remember with Windows 7, the preview didn't even have any of the new Windows 7 UI, and we didn't do that much UI. With the bold, new Metro style user interface in Windows 8, you're getting it all now, and it's at the same state of readiness.

Now then, we have some more milestones. After today, the next milestones will be the beta, then the release candidate, then RTM, then general availability of Windows 8. Does that sound familiar? It should. It's exactly what we did for Windows 7. Nothing is going to change there. We are going to focus our team, and our energy on first delivering the beta for everybody, and that will be a beta, which is designed for more broad use. And we're going to be driven by the quality and not by a date. And so, just focus on building apps right now, and that update. (Applause.)

We are going to do one more thing that's a little bit different, though, with the Windows 8 Developer Preview. We're actually going to be updating it along the way, and sending out some fixes for quality. We're going to keep the Defender Antivirus up to date. And so we're going to manage it a little bit as a training for our own update mechanism. And so you should expect to turn on the machine and see updates rolling through this pipe.

This pipe already scales to a billion PCs, but we always want to exercise it with new kinds of bits on the new platform.

There are going to be a lot of ways for everybody outside on the webcast to learn more, our blog on Building Windows 8, on Connect on Microsoft.com. The feedback tool in the product is very important to us, and also the customer experience improvement data that we get, that is what's going to drive the fixes that we're going to deliver, because if we see something crashing or hanging, we're going to work hard to get that fix out if it looks like it's affecting a broad set of people.

Our number one focus is on quality. Starting today, though, is a massive developer opportunity. Like I said, it looks like there could be 400 million seats that you could go after with the applications you

develop using this incredibly cool new Windows runtime, and the language that you choose. And so, how are we going to get this code out to more people than those of you here?

Well, we're going to let them download this Windows 8 Developer Preview tonight. So, you're going to go to Dev.Windows.com, the site hosted for developing Windows 8. Tonight, starting at 8 Pacific Time, which is 3:00 a.m. GMT, so all our folks over in GMT, get up early. And this preview is going to include the X86 code, 32 and 64-bit. It's going to be available in a couple of areas. You can get it with the Visual Studio and Expression tools on it, or just an ISO that has only the sample apps on it. Guess what, no activation. So, you just download it and install it. (Applause.) And also no support.

So, there you go. (Laughter.) Technically, that includes my inbox as well. So, that is the preview of Windows 8. And with that, what I would like to do is thank all of you for your attention this morning, and welcome you all to Windows 8, and the Developer Preview.

Thank you very, very much. (Applause.)

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