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EXPE - Expedia Inc to Participate in a Keynote Presentation at the AWS re:Invent

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CORPORATE PARTICIPANTS

Mark D. Okerstrom *Expedia, Inc. - CEO, President & Director*

CONFERENCE CALL PARTICIPANTS

Andrew R. Jassy *Amazon.com, Inc. - CEO of Amazon Web Services*

PRESENTATION

Operator

Ladies and gentlemen, please welcome, Chief Executive Officer of Amazon Web Services, Andy Jassy.

Andrew R. Jassy - *Amazon.com, Inc. - CEO of Amazon Web Services*

Thank you, and welcome to the Sixth Annual AWS re:Invent. This is our very favorite time of the year. It's our favorite week. And we're really excited that you're spending the week with us. You're here with 43,000 of your peers. There is another 60,000 plus in the live stream. For those of you here, there are over 1,300 sessions. You get to learn from your peers. Most of them are taught by customers and partners. And I have so much to share with you the next 2.5 hours. I can barely contain myself. I'm going to get right to it. So let's giddy up.

So I'm going to start with a quick update on AWS business. It's an \$18 billion revenue run-rate business with a 42% growth rate in the last financials that we released. It's pretty healthy clip on a reasonable sized business. We have millions of active customers. We consider an active customer, a non-Amazon entity that's used the platform in the last 30 days. And it's really a broad and diverse customer group. And you can see it in the start-ups, most of the successful technology start-ups use AWS and have built their business on top of us, and these are companies like Airbnb and Pinterest and Slack and Domo and Stripe and Robinhood and Intercom and Grail and OpenDoor. And then now, over the last few years, every imaginable vertical segment in the enterprise is using AWS in a meaningful way. In financial services, it's Capital One, and Intuit and FINRA and Barclays and Commonwealth Bank of Australia. In health care, as Johnson & Johnson and Bristol-Myers Squibb and Merck and Pfizer and Novartis. In oil and gas, Shell and BP and HAS and British Gas. In manufacturing, it's GE and Phillips and Siemens and Schneider Electric. In media, Netflix and Disney and HBO and Turner and Discovery and Fox. In consumer packaged goods, companies like Kellogg's and Coca-Cola and Nestle and Unilever. In consumer electronics, Samsung, LG and Hitachi. Every imaginable vertical business segment is now using AWS in a meaningful way. And you also see it in the public sector where we have nearly 3,000 government agencies worldwide using AWS. About 8,000 academic institutions and over 22,000 nonprofits, very diverse and broad customer base.

Since the very beginning of AWS, our partner ecosystem has been really strategic to us, and that's because we know the customers want help moving to the cloud and they want to use the same software they've used on premises, but just on our technology infrastructure platform. And so we have thousands of systems integrators who build practices on AWS and they range from the global SIs like Accenture and Deloitte and Capgemini and Cognizant and Infosys and Wipro, CSE to a lot of the born in the cloud SIs and regional SIs who have done a lot of the heavy lifting in the early days of the cloud, and these are companies like Slalom and 2nd Watch and Logicworks and Relus and Dedalus in Brazil, and Cloud Pack in Japan, and Cloud Reach in the U.K. And then we also have a very large ecosystem of ISVs and SaaS providers. And so what you see is that most ISVs will adapt their software to work on one technology infrastructure platform. Some will do 2, very few will do 3. And they start with AWS because we're such a significant market segment market segment leader. And so you see that across the board with companies like Aqua and Adobe and C3 IoT and Here and Heroku and Infor and Informatica and Pegasystems and Splunk and TIBCO. The lion's share of the cloud work goes for Salesforce and Workday on an AWS, much larger ISV ecosystem AWS than you'll find anywhere else.

This is Gartner's latest Magic Quadrant for infrastructure as a service. You can see once again that AWS is the clear leader in the top right. And then I thought this was an interesting analysis. This is Gartner's analysis of market segment share in this cloud computing segment. This is their last report which they issued in September or so. And you can see AWS is 44.1% market segment share and all the other 9 companies they evaluated on the left combined is less than half of that. So we have very significant market segment share -- leadership position. And by the way, that 44% is up year-over-year from 39%, so it's expanding.



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So when we -- what the team and I think every year about this keynote, we try to think about the sentiments of what we're hearing from builders. And you've heard me talk in the past about the cloud being the new normal or the freedoms and the superpowers that the cloud gives builders. And the theme that struck me this year is how builders are wanting to compose their applications and how, in many ways, is really similar to how music builders or musicians compose their songs. If you think about it, both want all the tools and instruments that allow them to create whatever's in their mind, with whatever richness and whatever layering they want. Musician doesn't want to have to use an acoustic guitar for every guitar part. Sometimes, they want to use a Gibson electric guitar. Or there's a horn part, I guess, you could play the whole horn part with a trumpet. But a lot of times, the parts call for a saxophone or a trombone. They don't want to be constrained, neither do technology builders. Both want the freedom to be free from abusive relationships that stop them from doing what they want. In the music, that's often the labels. In the technology industry, it's old guard technology providers optimizing for themselves. Both have to have conviction about their ideas because they're inventing something that wasn't there before. And people are going to doubt them. So they need conviction for those ideas, but they also need ways to check in to make sure they're steeped in reality. In this day and age, both want information about their fans or their customers, so they can try to predict what they might like and deliver that. And then both, when they have an idea, don't want to have to wait to implement that idea. They're impatient to get out there in the world.

For technology builders, AWS, on all these dimensions, radically changes what's possible. Not just versus all other alternatives out there today, versus what's been possible in the past. So we're going to talk about some of these themes today during the keynote. We're going to try something a little bit different today. We have an awesome house band here on stage. And we're going to play 5 songs that have lyrics that I think capture the sentiments of what builders really want. And apart from enjoying music, I encourage you to listen and follow the words on the string because we're going to talk about each of those after we get through some of those songs. So to kick us off in our musical journey, we're going to start off with the amazing iconic Lauryn Hill.

(presentation)

Andrew R. Jassy - *Amazon.com, Inc. - CEO of Amazon Web Services*

Everything is everything. After winter, must come spring. So I'm going to get back to that parenthetical at the end of my presentation. But for now, let's focus on everything is everything. And when you first hear that, it might sound redundant or might sound a little nonsensical. But if you listen to the words in Lauryn Hill's song, it's really profound, what she's saying, is that people shouldn't have to suffer getting just a part of the way there when it comes to civil rights or they shouldn't have to suffer all kinds of indignities on the way there to equality. And while I would say that technology is a lot less profound the topic as civil rights, I think Lauryn Hill's words and message applies to lots of different situations and industries, including technology.

If you think about it, when you're choosing the infrastructure technology platform that you're going to build all of your applications and really, your business on top of, it's an incredibly important decision. It can be the difference between whether you have a customer experience that's performing and available, whether or not you can innovate at the pace you need to, whether you can compete with other companies moving and inventing really fast, it can really relate to your survival. And when builders think about moving all their applications to a cloud and being able to build whatever they could imagine, they don't want to settle for a fraction of the functionality of the leader. They don't want to have less than their peers have because they realize that having everything is everything. And there's nobody that has close to the functionality that AWS has.

And so you can look at -- this is -- I won't go through this whole architecture. But AWS, thankfully, AWS has an incredibly robust and diverse and fully featured technology infrastructure platform with over 100 services. And we have -- at the bottom layer, we have 16 regions, a region for us is a place in the world where we have multiple data centers and 44 availability zones within those with another 7 that we've announced, and 17 availability zones coming, we have every imaginable form of compute, which we'll talk about a little bit later. We have object storage and block storage and archival storage and a storage Gateway. We have lots of flavors of relational database, very low latency, fast non-relational database. We have an in-memory store with managed Redis and managed (inaudible) G. We have a broad array of analytics offerings, a broad array of machine learning offerings, a broad array of mobile offerings. We have a lot of application services. These are services like caching and notifications and search and e-mail. We have the only place where you can use the same software that you used last 10 years to manage your infrastructure on premises, VMware and run it seamlessly on top of the AWS cloud as well. We have depth in media services. You might have seen on Monday, we announced 5 new AWS elemental media services. We have all kinds of capabilities. If you think about it at the people level, where we have lots of



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account managers and Professional Services and solutions architects and technical account managers and then the largest, by far, marketplace you'll find around. This is the most functional, most capable technology infrastructure platform by a lot.

Not only do we have lots of services, more than you'll find elsewhere, but we're also iterating at a faster clip. Last year alone, we launched -- we considered over 1,000 significant service and features. This year, we anticipate that number will be over 1,300. So the pace of innovation is continuing to expand.

Not only more services, but we also have a lot more depth and features within each of those services. And I could have filled several streams of different material here, but I just chose these 6. You can look at with storage, with block storage and object storage as well as third-party storage, partner integrations, nobody has much more than half of what AWS has. Or look at relational databases. We have 6 flavors of relational databases. We have MySQL, Post, MariaDB, Oracle, SQL Server and Aurora, which is the engine we built ourselves. Nobody else has more than 2. Or you can look at server-less computing, where you want to actually be able to have, set up a bunch of triggers that then trigger code that you want to run. You need a lot of services that you can set triggers in. AWS has 18 of those today and counting, nobody else has more than 6. Or you can look at key management or security and compliance capabilities. Again, you won't find others who have much more than half of what AWS has. The huge difference of functionality.

This is a comment that I think kind of sums up how a lot of enterprises, particularly mainstream enterprises, were now making their move to the cloud feel when they actually start using AWS in the cloud. And this is from an IT manager at Whirlpool, which is a traditional mainstream enterprise. It's traditionally been an IBM shop. And here's what he said recently. He said, "I can't express how exciting it has been the last week to have a service and platform that creates demand. We were talking through AWS storage solutions with an internal team. And they kept asking questions and we kept getting to say yes. Encryption? Yes. Customer encryption keys? Yes. PCI compliant? Yes. Life cycle rules? Yes. Will it save us money? Yes. How long will it take? Give me a week. And then they said, hold up, we can't move that fast. We need it in 2 months. No problem." This is the type of enablement you get when you move to a platform that has this type of capability like AWS. To share a little bit about how they're using the breadth and depth of AWS' platform and it's been a big part of leading to their deciding to go all in with AWS, it's my pleasure to introduce to the stage, the CEO of Expedia, Mark Okerstrom.

Mark D. Okerstrom - *Expedia, Inc. - CEO, President & Director*

All right. Well, hello, re:Invent and thank you, Andy. It's wonderful to be here. So how many people here have heard of Expedia? Yes, Expedia. It's all about travel, right? Well, underneath the veneer, it's actually all about tech. Expedia is actually one of the largest global e-commerce tech companies in the world with over 22,000 employees and nearly \$90 billion in gross travel sales.

We operate an incredible portfolio of the world's leading travel brands. I know you're leaning over beside you and saying, I didn't know they own that. I'll let you on a little bit of secret. But underneath those brands is an incredibly powerful platform. Platform you say, Mark? Now I've got your interest. Don't I? Yes, Expedia is actually the largest, most global, diversified travel platform in the world. Every month, 600 million visits come and hit our websites around the world. Over 1.6 million corporate travelers use our platform. We handle over 55 million phone calls every year in over 40 different languages. That's a lot of people, and that's a lot of people going to a lot of places. And our job is to connect those people with the vast and diverse array of travel service providers that are also on our platform.

We're the only global platform that can literally take any person from any place to any place by almost any means. We call ourselves a travel company or a tech company. In reality, we're a people logistics company.

Now you'd imagine a platform like that has some pretty impressive stats and we've got some pretty impressive stats. If you look at daily search volume from external users, you can take a look at the number of inventory and pricing calculations, the number of automated, translated, generated words we do, some of the numbers are absolutely staggering. But of course, we didn't get there overnight. And of course, we were not born in the cloud.

We started in 1996 as a small division within Microsoft and have since gone through a series of reinventions. 2009, we started a massive replatforming effort to essentially rewrite every line of code. Recently, we retired our 10 millionth line of C++ code, pretty remarkable. So now, we're on this next



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journey of reinvention, which is reinventing into the cloud. And we sit here with about 45,000 servers, about 35 petabytes of data, over \$600 million of physical assets in our data centers, and we think about it, it's kind of like swapping out the engines, the navigation system, probably the interiors of a 747 at 40,000 feet over the Atlantic.

But we are absolutely up for it because in essence, Expedia, me and the 10 other Expedians who are speaking at this event, can represent ourselves as in fact serial reinvestors.

We started with AWS testing in the true Expedia way of test and learn in 2012 and over the course of the last 5 years, have created increased confidence that this is absolutely the right move. And we've set some really bold goals. Over the next 2 to 3 years, we'll have 80% of our mission-critical apps in AWS. And we're making some serious financial commitments. We spent over \$100 million this year. Next year, we'll be north of \$150 million.

So why, why, why would we possibly do this? Why? Well, 3 important reasons: Resiliency, optimization, and performance. Let's talk about resiliency for a second. Who likes of these 2 words, disaster recovery? Yes, who's involved in these exercises? Well, Expedia, these things are done with military precision. Every second mapped out, not calls on the bridge hourly, pizza for everyone at 2 a.m. But then increasingly is looking like the past, very recently, earlier this year, we had a taste of the future. Our flagship site, Expedia.com, which takes over 100 million hits a day, was experiencing some challenges. Within hours, we rolled the whole front end up into AWS, no issues, no preserved customer latency, no pizza required. So the future for disaster recovery for us is about always on with AWS.

Let's talk about optimization. Optimization for us has come in the form of develop or empowerment. Our engineers used to write code, pass it off to test, pass it off to DevOps, somewhere in there, someone will call the data center guys and say I need 10 boxes. Better make that 30. I know you did that. I used to be the CFO.

Today, it's completely different. Our engineers have end-to-end autonomy, end-to-end accountability. They're building, they're deploying, they're optimized. You give an engineer immediate feedback and a goal, boy, they do amazing things. Our engineers have already saved us millions this year just by writing more efficient code. You talk about performance, whether it's the fact that we spent over \$0.5 billion in marketing algorithmically and are now actually processing real-time, whether it's the fact that our engineers are now deploying code 2,000x per day over 4,000 cloud native apps, we've essentially been able to take the innovation curve and actually stand it on its tail, and we're super excited about what comes next. Whether it's customer experience, the fact that we've improved site performance for our Asian customers by over 4x, performance is remarkable. And we really put it to test a couple of years ago. We took this guy, the Gnome. Remember the Gnome? This is a site that has millions of hits a day. And within 91 business days, we took it off of this existing infrastructure and migrated on to the Brand Expedia platform. How did we do it? With near infinite traffic routing, scalability and AWS. In fact, it changed the way we thought about acquisition integrations. And since Travelocity, we've done several more to huge success. Of course, AWS started as a data center outsourcer. But since that, it's become this incredible ecosystem of services. You can talk to the Expedians who are probably using most of this. Thank you for giving back to the ecosystem.

But of course, none of this really matters for Expedia unless we're delivering on our core mission. We're incredibly passionate about being customer-centric. For us, it's getting closer to absolute personalization, being able to deliver to you, to you, to you the perfect set of travel search results for when you're going and what you want to do. We're scoring over 300,000 hotels every second, increasingly taking more personalized data to actually get you the perfect results and handling nearly 18 million images over 35 terabytes of data in AWS, we're able to serve up the perfect image to help you make the perfect choice nearly instant.

We're also very passionate about being locally relevant in every market in which we operate. Our Malaysian customers need to have perfect translation. We need to have all the local places, all the local hotels and it needs to be fast. By moving our code closer to our customer, our Malaysian customers are getting absolutely that. But let me take it up a notch. In this crazy world of ours, we're probably more interconnected than we've ever been. But if you read the news like I do, it seems like we're drifting further apart. What's the solution? Well, there is a hint in something that Mark Twain once said, which is, "travel is fatal to bigotry, prejudice and narrow mindedness." In therein lies the fact that if we can physically connect with each other, understand each other's cultures, we can make this world a better place. As the world's largest travel platform and the only place that connect anyone to anyplace by any means, Expedia has an incredible responsibility to the world. It's something we take seriously. It's something we're humbled by, but it's something that we're incredibly energized by. And we're absolutely thrilled to have AWS alongside us each step of the way. Thank you.



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