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# EDITED TRANSCRIPT

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## PRESENTATION

### Unidentified Participant

Please welcome, President of Cisco EMEA, Wendy Mars.

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### Wendy Mars - Cisco Systems, Inc. - President of EMEAR

Hello, and welcome to Cisco Live! in Barcelona. You have come from all across Europe, Middle East, Africa, Russia and beyond to be here with us. And we're all here because we believe in technology. We are excited about technology. We believe that it provides answers to many of the challenges that we face on a daily basis. But also, we believe that it creates opportunities for us for challenges that we didn't even know existed years ago.

We all have a musculoskeletal reflex. But in addition to that, we have a digital reflex. And did you know that actually, 61% of us admit, the first thing we wake up in the morning, we actually go straight to our digital device before we even talk to anybody. And actually, I, like many of you, will use



multiple digital devices first thing in the morning, be that engaging -- before I go for breakfast, engaging with Alexa, engaging with a robot to do the housework. Now whilst we're so reliant on those digital services, when they don't work, 44% of us admit that we actually use bad language, and I mean, out loud. So we're actually dependent, we're hooked and we love it.

We are -- as consumers, we can have what we want. We can have whatever we choose, and we are able to make very well-informed choices. And of course, we expect things instantly. We require from our suppliers not only the products and the services capability that we know that we're interested in, but also we look at integrity and values associated with those organizations as well. We are in a wonderful place as consumers. The Internet truly has built our expectations sky high. And if we look through that telescope, we see a wonderful world full of possibilities. We're like a child in a sweet shop. Whatever we want -- we can have whatever we want, and we want it now. But actually, the expectations of the Internet of the future have built more than ever before.

Now actually, if you look through the other end of the telescope, we find ourselves in a very different place. That's where actually it's back to us, all of us here in this room. We have to deliver on those digital services. We have to deliver them in a unique and a personalized way with the highest standards of integrity and trust that our customers expect. So actually, life at this end of the telescope, put bluntly, is a little bit harder. Actually, sometimes it's a lot harder.

But actually, there's going to be days when you find that you feel everything is out of control. Problems for us will be opportunities or feel like they are for our competition and for startups that are out there. But we have whole industries are being reshaped, and they're reshaping as the way that we shop changes, the way that we date changes, the way that we exercise changes and also the way that we relax changes. New technology is being introduced that, of course, may help to solve some of these challenges. New technology in the form of robotics, of security, of AI and also 5G. But actually, what's most important, that all of this new innovation and new technology provides value to your business. Because at the end of the day, it is all about the use case that is relevant for you.

So whilst you may feel that sometimes you're in the center of that vortex, surrounded by stormy weather swirling around you, and you're actually at the risk that digital disruption will hit your business and hit your industry, and it may hit it really hard, but you know, we are all in this together. Those disruptors for us at Cisco came in the form of cloud, of SaaS delivery models. You may have that same experience in your business or others. Actually, they're more specific to the environment in which you operate in. But we all will travel through this together.

And actually, if I look at this and think about digital transformation overall, whilst this can feel overwhelming, there are 3 main things that are so important to work on: It's actually the business model. So with that, as our business models evolve, which, of course, they do with this transformation agenda, thinking about how we innovate constantly in our portfolio, innovating in our portfolio to stay attractive to our customers. Also making sure that we deliver a phenomenal customer experience at all times. It's about the business operations, making sure that we think about our processes, our tools and our systems and how we run our businesses efficiently. But also, and maybe most importantly, it's about our people and the culture that we operate with. Because at the end of the day, if you don't have that, the transformation will not happen, never mind operate smoothly. And of course, as you look at these things, every change that you make in one of these 3 areas from a business requirement creates a technology change requirement. And that technology change requirement may be a new connection, it may be new requirements from an analytics perspective or it may be a new process.

And of course, as I think about this, for me, it feels like a wheel. As you look at this graphic, it feels like a wheel. It's important to keep it balanced. And any change, even if it's a slight change at the center, can result in a really significant change at the edge. So you have to manage through it in the right way. And as you think about that wheel, if you move too slowly, it will fall over. If you move too fast, you will lose control of the direction in which you're going. And if you get it wrong, the wheel will buckle and it will break and then you end up going nowhere. But if you get that right, you will have a fabulous force multiplier. You will be in control of your direction. You will have the velocity that you need, and you will get to the destination of your dreams. But you know it's tough, it's exciting, but it takes time.

But in addition, for us, within this region, this is an exciting region for all of us to be in. It's very diverse with all of the different countries that we operate within. But within that diversity, we have strong and unifying forces that hold us together. We lead the conversation in the world in many different topics as well. And one of the key elements that we talk about is trust and privacy is important for all of us. You push us quite rightly on



transparency, on trust, on privacy and security. And you do that because they are key conversations that you are having with your customers. And quite rightly, you should push us on that.

And did you know it's actually Data Privacy Day today? Europe has led the conversation within GDPR. And actually, it's important for us now within the Middle East and Africa regions as well. Data and data sharing are very important and foundational for us from this digital transformation journey. In Europe, the conversation is about data sharing. Actually, in the Middle East and Africa, it will be about the data movement. So governments' engagements and conversations are getting more involved there, thinking about regulation and how do we manage through some of those different steps as well. And what does this mean? It impacts how we share stuff. And that, of course, is critically important for us.

But in addition as well, it is really important our customers care about our sense of purpose, our values and our purpose as organizations. The European parliaments and commission is looking at how do we use technology not only to drive economic value but also societal value, and of course, as we manage through this transformation, thinking about how we do this in an inclusive way, an ethical way and also looking at the sustainable elements and meeting our sustainability targets, thinking about skills and thinking about diversity elements as well. The European Commission under Ursula von der Leyen has recently introduced with her Green Deal the promise to try and get Europe, from a continent standpoint, to be carbon neutral by 2050. And also here, within Spain, within the new government, one of the top 3 priorities is actually on climate change.

So as we think about this week ahead, we are in a world of continuous change, and technology has been the cause of a lot of that. But actually, technology is the answer also to a lot of that and provides a huge amount of solutions. So you will be thinking in the week ahead about how you evolve the requirements in your business and what that means for your applications. You'll be thinking about how you secure your data, how you transform your infrastructure in order to always be agile and to be ready and how you empower your teams.

But also, for those of you who are taking certification exams this week, I wish you good luck. I know from my own experience, back in 1998 when I took the CCA, just how hard that is. But also I know how it's worth it when you get there. So I wish you good luck with that.

Now we're going to transition to David Goeckeler and the engineering team. We're going to get techy. But first, let's go to the video.

(presentation)

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### Unidentified Participant

Please welcome, EVP and GM Networking and Security business, David Goeckeler.

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### David Goeckeler - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All right. Good morning, everyone. Everybody ready to go? Everybody ready to talk some technology? Thanks, Wendy. That was a fantastic start. All right. It's always great to be back in Europe. It's also really good to be back in Barcelona for the start of Cisco Live! This is a fantastic week if you're a Cisco engineer because we get to talk about all the stuff that we've been building, sometimes for years, before we get here and start to talk about it.

Now what's also great, if you're in my position, is you get to start with a video like that. You get somebody like Michael Bay to create a video for you, one of the most innovative people in the world. And I have kind of 2 takeaways from that: First of all, we need to explain to Michael what a terabit is. It's not a dinosaur. So we're going to go work on that. That should be pretty straightforward. But the really interesting part of it is here, you have somebody that's one of the most creative people in the world talking about technology is in its infancy and we're just getting started. And that's kind of amazing for all of us because we've been doing this our whole career. This whole thing has been moving so fast, it feels like we're going so quick. Technology is evolving so fast. And here are the people that are using this technology, and they're talking about, "Wow, this is just in its infancy. If I start to look and see what I can do with all this technology, it's amazing." And that's what's so exciting about what we're going to do here today.

Not only are we in Barcelona to kick off Cisco Live! We're here to kick off Cisco Live! 2020, so a start of a whole new decade of technology that's going to start right here. And if we look back, let's look back at the last decade, what happened. It really was about the application. It was the rise of the application, whatever we want to call it. There's lots of words for it. There's the rise of the application economy. There's every business is a software business. There's digitization. Whatever you call it, there's been all of these accelerants, cloud computing, the mobile ecosystem, data science, that have really, really accelerated the development of the most sophisticated applications in the world. And they drive everything we do. Application is king.

Towards the end of that decade, the infrastructure business that we're all a part of started to keep up, started to catch up. It's only been less than 3 years ago that we announced intent-based networking. And what I think this decade is going to be about is how these 2 worlds come together even more seamlessly to power this world of the most advanced applications. As Michael Bay said, we're just getting started. And we're going to talk about a lot of that technology here today.

Right. Last year, on this stage, I spent a lot of time talking about a multi-domain architecture, about what Cisco is driving to transform all of the infrastructure. It's not just about innovating in one part of your infrastructure. It's not just how you evolve your campus network or how we evolve the data center or the multi-cloud environment. It's how we bring this all together into a multi-domain architecture to build that integrated, automated and secure infrastructure to drive that world that the people like Michael Bay are going to innovate on top of.

But let's zoom up for a second. We're going to talk about more than that here today. We're going to cover the whole portfolio. We're going to talk about all the outcomes that you need to drive. And at Cisco, we think about 4 of those: One, how do you reimagine your application? We're going to start with that. Two, how do you secure your data? One thing that's not going to change from the last decade to this decade is the importance of security. It's been the #1 or #2 CIO concern for years and years, continue to be that way. Cisco's largest enterprise, cybersecurity company, we're driving that portfolio across the entire infrastructure. Three, how do you transform your infrastructure? Intent-based networking, we've talked about that. And four, empowering your teams. We're going to talk about the Collaboration portfolio. But it's more than that. It's how -- it's our customer experience team and how do we work with you. It's DevNet. How do we change -- how do all of us change to deal with the new technology we're using every day?

All right. Let's get started. We got a lot to cover. There's a lot of things we've been working on we're going to talk about here. I got all kinds of friends that are going to come up and talk about them. But before we jump into it, I want to introduce one person sitting in the front row up here. All you people should know Gerri Elliott here, Global Head of Sales and Marketing for Cisco. Gerri, welcome. All of you have a tremendous advocate in Gerri and her entire team at Cisco.

All right. I'm going to keep us grounded as we go through all of these because, again, it's a big portfolio. There's lots of stuff to cover. There's lots of innovation we've been driving. We're going to start with the application. Where better to start? We're going to start with the application, talk about the evolution of the portfolio around AppDynamics and what we've been doing. But I want you to really pay attention to this because there's going to be some surprising things that come out here.

All right. Danny Winokur leads that business for us. Danny, take it away.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Thank you, David. Good morning, everybody. So as David said, applications over the past decade have moved from this role that they used to have of supporting our business to now playing a role where they actually are our business. And this has put all of us in IT under a lot of pressure. We're being expected to support constant change across hybrid, multi-cloud environments. That have to now keep pace our developers on those environments, have to keep pace with the demands of experience-driven digital businesses. And this is really hard, right, because the environment that we're all operating in have become enormously complex. We have different layered technology stacks across public and private cloud and traditional data center technologies. And it begs for us the question of how do we actually manage all of this exploding complexity and the constant change without breaking things, making sure that these applications that we're delivering remain flawless, which they have to do.



Well, the way we need to do that is we need to get visibility to see what's going on. But visibility is not enough. We also need a lens through that visibility that allows us to actually prioritize what is really important so that we focus on what matters most and can avoid and eliminate the distraction of all of that noise, right? This is what AppDynamics does. Right? What AppDynamics does is we tag and trace each component within your hybrid multi-cloud application and the calls among and between all of those components. And once we do that, we're able to monitor key performance indicators for the technical performance of the application, but we also correlate those to business performance metrics that actually are the ultimate thing that you need to accomplish as a business, right, because the business, again, is inside that application. And we do this through the lens of what we refer to as a business transaction. And you can think of a business transaction as a pathway through your application to deliver a key outcome for your users, right?

So while this is a powerful lens, we're really excited today that we're going to be introducing an additional new lens, and it complements the business transaction. So the business transaction allows you, when something goes wrong on the back end components of your application, to immediately pinpoint what went wrong on the back-end and look through that lens and focus right there on that root cause. The new feature that we're introducing today is going to complement that by giving you a view on the front-end user experience, where the screens are that the user is actually seeing on the front side of their application.

So what I'd like to do is jump in and let you take a look at how this feature actually works. So here you see AppDynamics monitoring a fictional application, an application we call NextGen Financial. And like most businesses, they rely upon their mobile and their web applications in order to interact and deliver all of their products and services to their customers, just like you would expect from an online bank. And you can see that they offer things like insurance quotes and loans and online bill pay. And AppDynamics is looking at the key business metrics at the top of the screen. And you can see that we actually have a problem, a yellow warning, on the dollars that are being generated by the insurance quotes. Down below, you see a list of all of the individual business transactions. Those business transactions are again those pathways through the application that are delivering those key outcomes. We've got a couple of issues there as well. You can see that we've got a challenge with quotes being sent. And then further down in the middle, we've got a challenge with response time on applying discounts. Wouldn't it be helpful if we could actually correlate these different warnings through that lens of user experience in order to understand if and how they're related and what we should do about it.

That takes us, if we click on the 450,000 warning, directly into the new feature that we're announcing today. This is the AppDynamics experience journey map. It uses AI and machine learning in order to automatically map the journey your users are taking through the actual front-end screens that make up this application. And you can see that it's found 3 top journeys through the application that, of course, correspond to the top business metrics that we started with, right? So you can see that we have there paying the bills, the loans and the quoting. And if you follow the quoting journey, the bottom one of the 3, you shouldn't be surprised to see that, in fact, there is a problem with applying discounts because we saw that in the prior screens.

And where they are able to see not only that we have a technical problem, but you can also see that it's correlated to an important business metric, which is user abandonment, right? So we're losing 70% of our users at that stage in the journey. But just as importantly, if you follow that path through the journey all the way to the quotes being sent, you'll notice that there's no user experience problem there, right? Our abandonment is the same as normal, and our technical performance is the same as normal on that screen even though we saw on the back end that there were some technical issues with components there.

So we can click in and get more detail. But what we've learned now is that we actually don't need to immediately prioritize the quotes being sent. We need to focus our efforts on the challenges of applying discounts because that's what's actually affecting our users. And so we can now go up and click on Dashboards and Reports and go -- dig down deeper, AppDynamics has a wealth of additional information, and we can begin to drill in and say, "Okay, let's look at what's going on in the stack that is supporting the application." So we've got some challenges on the application servers and in the VMs. But we know from the prior view and the application -- sorry, in the experience journey map that we need to worry more about the discount services and the VMs there than we do about the application server problem on quotes being sent.

Now with any other APM tool, this is where we'd likely get stuck. Because we would have siloed information for the app ops team and separate siloed information for the infrastructure ops team, and we get into pointing fingers at each other and not know how to come to agreement on what the real source of the problem is. But I'm excited to let you know that we have another new innovation that we're announcing today, and so to help me with this, I would like to invite my colleague, Liz Centoni, onstage to help us troubleshoot.



Liz? Hi, Liz.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Hi, Danny. I can help you with that.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

You think so?

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Absolutely.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

All right. Let's do it.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

To do that, I've got to go into Intersight. And actually, before I do that, let me do a brief summary because I can't expect that everybody would know what Intersight is about. So think about Intersight as our Management as a Service platform. So our customers actually use it to set up and manage their UCS servers, their HyperFlex clusters, their storage arrays, and it actually does the full life cycle management of the infrastructure as well. So think things like [former] reversion, OS upgrades. And it is a cloud service, so it can connect back to Cisco. And so if you have a machine that's not well, it can actually log a service request with Cisco tech, send things like logs and files and do this with very minimal human intervention. So we can get to root cause much faster.

But today, I'm excited to announce that we have new capabilities within Intersight, and it's called the Workload Optimizer. So let's go into what the Workload Optimizer looks like. So the first thing that you see when we launch the Workload Optimizer is a dependency graph on that left side. Each of those circles actually represent a different entity. What the dependency graph is saying is that each one of these entities is dependent on something else or uses those resources. So here, as you can see, we have 11 business applications. They're dependent on a number of app servers, VMs, and it goes all the way down to the storage LUNs to the servers, even down to the switch ports.

So in a sense, what it's doing is it's giving you a view of everything from the infrastructure all the way to the application. Now the question would be is, how does Intersight get to know all of this? We actually make API calls to all of those entities. And we're able to find out the immediate dependency of each one of this, correlated, connected, and it builds out the dependency graph. Now the Workload Optimizer also has a new capability, which is a recommendation engine. And that recommendation engine pulls together performance, efficiency, compliance constraints. It takes a look also at historical usage patterns. It can spit out a bunch of actions in terms of saying, "Here's what you need to need to do in terms of troubleshooting," as well as how do you optimize your resources, especially in a hybrid multi-cloud world. So pretty cool stuff.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Very cool stuff. So it looks like you're actually pulling in all of the application topology data from AppDynamics. You're joining it with other data that you've collected from other elements in the infrastructure. And in this view, it looks like you're actually monitoring all the applications in the estate, not just NextGen Financial.

**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

You're right. And the recommendation engine is pretty powerful. So as you can see, not all those circles on there are green. Some of them are yellow and red. So the recommendation engine is saying, "Hey, look, you've got a couple of alerts. You can go check them out and take action on it."

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Okay. So Liz, this looks pretty powerful. But what about NextGen Financial? That's the problem we need to solve.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

That's what I came up here to talk about, right? I got a little carried away. All right. So let's go into what Next-Gen Financial looks like. I'm going to click on the application button, and it takes you down to -- it shows you the 11 applications. And by the way, we pull this information from AppD. So I'm going to kick -- as you can see, the third one on there is NextGen Financial, and I'm going to click on that. It opens up and builds out the dependency map just specific to Next-Gen Financial. It again makes those same API calls, looks at the immediacy and builds that out.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Very cool.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Now as you can see on here is the app actually looks green. Nothing wrong with it. But both the app server and VM actually shows that it's yellow. So if I click on the VM, what it does is it shows me that both VM 3 and VM 4, by the way, these are the same 2 VMs that you showed on the AppD graph or in the AppD dashboard, they're running a little hot. So the recommendation is saying, "Hey, increase the memory allocation by about 1 GB, and you can actually bring the application back to its optimal performance." And all the other capacity stats look pretty fine.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

So that's pretty amazing. You've actually got the exact same VMs, the same data that we had in AppDynamics, but you've been able to drill all the way down into all of the infrastructure dependencies and root cause immediately to the memory congestion with a recommendation on what we can do to actually fix it.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

That's right. And actually, it's pretty simple. All you do is actually click apply, and the action is taken. By the way, our teams, in terms of the infra ops teams and the app ops teams, they have the same view to this correlated data set. So they'd be actually working on this already and taking proactive action before you actually even see your application or your end user having an experience issue.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Excellent. So should we go look at AppDynamics again and see if the app is better?

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Here's the result of it.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

All right. Look at this, you fixed my problem. Everything is green. Thank you. Now I'm not aware of a single other application performance management tool that can do this, right, where we can actually go from the application all the way down into the infrastructure stack and actually solve something together across teams that quickly.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

If you think that's cool, I've got another use case for you.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Okay. What else do you have?

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So we looked at proactive troubleshooting. Let's go and take a look at how do we optimize resources, especially in a hybrid multi-cloud world. Because I think everyone in the audience would say, "If I get an opportunity to save money. I absolutely want to do that." So I'm going to take you back into Workload Optimizer. This time, the dependency graph that you're seeing is in the hybrid view. So it's looking at all the resources that the application uses, but not just on-premises but in the cloud as well. Again, it makes API calls to the multiple cloud providers and is able to actually pull up this information.

So I'm going to hover over the VMs because it's actually showing that there's a number of severities, both in red and yellow. I'm going to click on the ones that have actions against it in yellow, and it gives you a whole list of them. If I highlight one that's related to the cloud and expand on that, what it does show you is actually your application can move to a different instance type and it can save money. And it gives you this very granular view, down to the decimal, in terms of how much money that you can save.

Because when you think about it, optimizing for the cloud brings its own set of challenges. I mean think about it. Last year, you probably had a set of instance types. Today, when you look at it, you probably have more than double that. And each instance type comes in that's curated for its own memory, compute, storage, bandwidth and capacity, and they've got their own rate cards. And usually, when you're deploying your application, you use the most optimal for what's needed for your application. That's important. But it's not sufficient because you've got to look at the whole life cycle of the application, and as it changes, how do you continue to optimize resources. That's exactly what Workload Optimizer does for you.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Sure. So that looks pretty powerful. And it looks like you're actually optimizing across both public cloud instances and on-premise instances. Are you using machine learning to actually accomplish that?

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

We have to because we're pulling in massive amounts of information. Because when you look out there, you get examples of where this is done at the infra layer, or it's done at the virtualization layer or it's even been done at the app layer. This is the first time where actually where we're showing a full-stack view from the infrastructure all the way to the application.

**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Wow. It's really, really powerful. So if I take a look now at the combination of what we've just been able to build, we're now all the way up at the experienced journey level and the business information, looking through that lens of user experience. We see a problem, we've now gone down into Intersight and actually shown that the data is transmitting from one to the other, so that our teams can work together in this new powerful closed-loop operating model.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

That's right. And in addition to that closed-loop operating model, in terms of predictive troubleshooting, it also helps you optimize the resources in this hybrid multi-cloud world. So think about it. The infrastructure is dynamic. It's now moving and changing to the changing needs of this experience-driven application.

There's a lot more that we're launching today. And we can go through this in a little bit more detail. So actually, come see us in the Launch Zone or in the World of Solutions.

So David, I'll hand it back to you.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All right. Thanks, guys. Fantastic stuff. All right. So Danny, first of all, just to make sure I got it. That was a lot in 15 minutes.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

It was.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

And to your point, Liz, they can be out there in the Launch Zone or in the World of Solutions.

But first of all, journey maps at the application level. So more detail, more granularity, application is king, get more detail into exactly what's wrong and where problems are.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Exactly.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

And then, Liz, the ability to actually -- even in a hybrid cloud world, which everybody uses, the ability to drill down into the infrastructure and correlate the application world to the infrastructure, and not only correlate it for troubleshooting, but optimize the infrastructure to get the best performance possible.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

You summarized it well.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Perfect.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All right. Fantastic. Thank you.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Thanks.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

I think we're just going to continue to see more and more integration. I think one of the things I talked about last year is every click of the portfolio, when we launch more technology, you're going to see this broad portfolio we have get closer and closer integrated to deliver a very different value proposition to all of you in running your business.

All right. Let's go on to the intent-based networking. I talk about that in the open. Big change in the way networks are built. We launched this not even 3 years ago now. And in Cisco, we've now brought the entire portfolio from the campus, wireless switching to the branch, to the data center, all under one leader. That's Scott Harrell. He's going to come on stage and talk to you about what's latest in intent-based networking.

Scott, take it away.

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**Scott Harrell** - Cisco Systems, Inc. - Senior VP & GM of Intent Based Networking Group

All right. It's awesome to be here. We just got done talking a lot about applications. But this is Cisco Live! so it seems imperative that we talk about the network as well. And there's no bigger change in the network right now than the move from SDN, software-defined networking, to intent-based networking. And really, when we break this down about what is so different about intent-based networking, it's about the idea that you're going to use English language policy and use a network-wide fabric to program the network. But also increasingly important is every single controller that Cisco is building, everything we're doing that's around the network, we're also now bringing in a next-generation of analytics layer to bear. And we're doing this across everything we make, whether it's in the branch, in the campus, whether it's in the data center, the IoT infrastructure or out to the cloud.

And the goal here at the end of the day is for you that are operating these complex networks, these global networks, to simplify things. Because we know your world is getting more dynamic. There's more change than ever, and you need to run at a faster speed. But at the same time, security never goes away as a care about, as David said. And we know that things like segmentation now need to be able to be done everywhere you have a network instance to provide that better security. And this is another outcome intent-based networking can drive.

But one of the things we're really focused on is also about how this interacts with the cloud. The multi-domain story that David was talking about now is inclusive of the cloud. And that's where I wanted to start with automation. And for a lot of your organizations, the cloud is just this magical, wonderful place. It's a serene place that you want to go hang out, and it's going to solve all your IT problems. The reality is though, for many of you in IT operations, this is anything but the truth. Instead of this incredibly peaceful scene, it's much more like the running of the bulls in Pamplona is

what you feel every day because now your world has become more dynamic. You become responsible for those workloads in the cloud that Liz was talking about. You become responsible for the connectivity out to that cloud and the security. And that increases the things you have to deal with as an IT organization.

And so what we're doing, and what Liz and Danny showed you at the end there, is we're starting to bridge those 2 worlds. We're starting to bring IT operation consistency between the cloud and on-prem so that your single tool can now help you manage both. And what you saw was how we do that for app and workload management. But we're doing the exact same thing for security. We're doing the exact same thing for networking. In fact, last year, here at Cisco Live! Barcelona, we launched something called ACI Anywhere, which is about how you take your policies from your data center and seamlessly migrate them into the cloud. And we basically make it simple to do by calling the APIs, by taking all the semantics that are native to different -- that are different between AWS and Azure and GCP and abstracting that all the way so you can have the same segmentation policy on-prem as in the cloud. And as new applications appear in either place, it can dynamically adjust.

And so we're going to continue to do this from a networking point of view, and there's no hotter market right now in networking than SD-WAN. And what we're doing at SD-WAN is, of course, we're automating across any type of WAN connectivity, whether it's cellular, whether it's classical MPLS or whether it's broadband. But increasingly, we're being asked by our customers to not just integrate and automate out from the branch, but into the cloud, into your SaaS providers, into your IaaS providers, into your colo facility. And this is where we've been making a ton of incremental investment, and it's been extremely well-received. In fact, of our customer base, 70% of the Fortune 100 customers now have Cisco SD-WAN. Amazing take-up.

And we know that for many of you, you either have a project for SD-WAN or you're going to have one in the next couple of years. And what I would encourage you to think about as you go down this path is not just think about selecting SD-WAN as a connectivity medium from the branch, but starting to think about how you actually are going to use SD-WAN to automate your on-ramp to the cloud and what we're going to do to interconnect it with your SaaS services, your IaaS services, your colo services so that your SD-WAN fabric now extends into the cloud itself.

So I'll give you some idea about how we do this. When you think about Office 365, it's a suite of applications. We have integrated with the APIs directly from our centralized SD-WAN console so that we dynamically and automatically optimize those connections for all your users. And what it means for your users is they're going to get up to a 40% performance improvement when they use Office 365 with Cisco SD-WAN.

We're doing the same type of thing with your IaaS providers, your Infrastructure as a service providers, AWS, Azure, where we're interconnecting SD-WAN directly into their clouds. And so that as new VPCs are discovered or VNets are created, we automatically configure segmentation, we automatically configure connectivity and security into that cloud using that same central SD-WAN console.

And then a lot of you are actually starting to embrace the colo and start to use the colo as a local DMZ, a drop-off point for your traffic. And we've partnered with people like Equinix to make that simple as well, so that when you want to extend your SD-WAN fabric into that colo, we can make that a 1-click as well. And in fact, we even brought into the same management console the ability to orchestrate security services for that colo.

So the sum of all this is that we come back to what I started with there, which is around IT consistency. How do we make your life simpler? How do we enable you to expand to the cloud in a much simpler way and actually retain your sanity, make sure that you have the same type of kind of zen moment that, that picture implied when your organization adopts the cloud? So that's a lot about where we're innovating in automation.

But when I started talking about intent-based networking, I said one of the biggest changes is this need to actually start to adopt analytics. And we at Cisco, we believe strongly that every network element must become a sensor. Every network element, whether it's a switch, whether it's an AP or whether it's a router must produce data really to drive 3 primary outcomes: one is around security insights, two is around business insights and three is around IT insights.

When we talk about security insights, this is really around how we start to do new things that have never been possible before, how we start to balance the needs for security for an enterprise with the privacy of an individual using technology like encrypted traffic analytics, where we can inspect the flow without ever decrypting it and assert whether or not it's potentially malicious. Nobody else in the world can do this. And we can do this by using the data that comes from the network.

About 6 or 7 months ago, we actually launched something new called DNA Spaces. And DNA Spaces is really about taking the data that's available from the network and allowing you to [match] it up with other sources of data in your enterprise and actually drive outcomes that drive business outcomes, drive better customer engagement when they are in your facilities, help your users and your employees actually be more intelligent about how they use the environment they're in, things like wayfinding, things like loyalty engagement programs and make your environment more dynamic and leverage the power of the network to do that.

But I know many of you in the audience, you're in the business of running a network. And so there's probably no bigger concern than the IT insight side of this. And we've been investing heavily in the IT insight side, bringing analytics to all the different controllers we make. And Liz and Danny talked a lot about how we can use those analytics to simplify how you troubleshoot apps. But the reality is we know from a lot of experience, many people in the room know, that the first thing that's usually blamed whenever there's a problem, whether it's with the user or with the app, is always the network. And we want to help you with that problem. We want to help you actually troubleshoot that network when it's in the data center. And the challenge here is that data center has gotten much more complex to troubleshoot. We know that as the workloads increase and the amount of workloads that you're trying to manage become more dynamic, the troubleshooting of that environment becomes increasingly complex.

And you're going to have issues. 97% of you, so pretty much everybody in the room, your company's experienced some kind of critical business application outage in the last 6 months. And when those happen, time is money. The average cost per hour of an outage is around EUR 228,000 per hour. And so this ability to synthesize all this data and get you to the root cause fast is critical. And sometimes you're going to start from the app layer. Sometimes you're going to start from the compute layer. And sometimes, you're going to start from the network layer. And this is where Cisco data center Network Insights comes in. It's a brand-new solution that actually integrates directly inside of your existing products, ACI, DCNM, and for your data center and allows you to actually use those tools to get to a root cause.

And we can do things that nobody else can do. We can actually not only bring out all the stats and the data that we know from your Nexus switches, but we can also combine that with flow data because our cloud-scale ASICs produce the richest set of flow data of any ASICs on the market. And we can use that to quickly pinpoint an issue with an application and get you down to which leaf potentially had a problem, gets you down to whether it was the switch or whether it was the server or whether it was a particular app.

This is something uniquely that Cisco can do. It's available now, and it's available, integrated inside of ACI and DCNM.

All right. So that's all about analytics. So we talked about automation. We talked about analytics. We talked about how important they are for intent-based network and how you want to send them to the cloud. But all of us still have our on-premise facilities. And what we see happening in our on-prem facilities is actually that one of the biggest disruptions is the marriage of IT and OT. And the fact that many of you that have historically been in IT are now being asked to take over the management of OT. And we've extended our intent-based networking solutions into the OT. We've actually brought them together so you can manage it in a simple way, manage it as a unified solution so that you can produce outcomes like better security for your organization.

And rather than me talk about it, I actually want to bring up our IoT expert, who happens to be Liz Centoni, back up on stage and talk to you about it.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Thanks, Scott.

Last year, when we were here in Barcelona, we talked about how we're extending intent-based networking to the IoT edge. So think about it in terms of we're helping you connect your factories, your ports, your refineries, your [mines]. Your network is actually becoming even more important to meeting operational goals like availability, reliability and safety.

But the top concerns still remain. Questions I get asked is how do I protect my critical infrastructure? How do I make sure that I have complete control of my operations so that they do exactly what I need it to do? And how do I keep my people and assets safe? So I was talking to somebody



who actually lives this every single day, thinking about this every single day. So I asked him to come in and join us. So please help me welcome the Head of Product Security for Airbus Helicopter, Stephane Chopart.

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**Stephane Chopart;Airbus Helicopters;Head of Product Security**

Hello, Liz. Hello, everyone.

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## QUESTIONS AND ANSWERS

**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Thank you so much. I realize that I went by the slides and also missed the fact that 68% of our customers actually talk about security every single day, which is something that you had confirmed as well.

So Stephane, when we were talking about this, one of the things that you mentioned surprised me. You said that Airbus makes one out of every 2 helicopters in the world.

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**Stephane Chopart;Airbus Helicopters;Head of Product Security**

Yes, that's right. It's almost half of these are going to military forces. That's why it's very important for Airbus to protect our IP and trade secrets.

But we have also to ensure the resilience of our manufacturing facilities in order to be able to deliver to our customer on time and that our product meets the highest quality standards. One day of lost production anywhere in Airbus [Heli Co] may have a huge financial impact. And even worst, if a worker who modify the configuration of our industrial asset, it can put our workers, our customer at risk, and that's not acceptable.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So let me see, I'm just going to summarize what you just said in terms of -- because you had a long list.

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**Stephane Chopart;Airbus Helicopters;Head of Product Security**

Yes.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

You want everything from -- you want your production running 24/7, you want the highest quality and you want to keep people safe and assets safe as well. And when we were talking, we were talking about the challenges that industrial network space because these networks have been around for -- or industrial environments have been around for a very long time. So how are you going about -- and this is what the audience would like to know, securing your production facilities?

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**Stephane Chopart;Airbus Helicopters;Head of Product Security**

So we initiated a program to better protect our industrial control system. The ICS network is a network controlling of [CMCs] or sensors on all the assets we use to manufacture and assemble the various component of a helicopter. But over the years, we added many new industrial assets, many new network equipment and connectivity. And the business was more focusing on the operational objective than under security architecture.



So the first thing we did was to perform a full risk assessment on the OT domain.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So you use Cyber Vision to do that. Now as you went through that security assessment, did you find anything surprising?

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**Stephane Chopart;Airbus Helicopters;Head of Product Security**

So we worked with our -- one of our CyberSecurity partner, Orange Cyberdefense, to perform this assessment, and we used Cyber Vision to discover the asset. This solution is great because it listens to your network and automatically discover the assets and map the communication flows.

Finally, this assessment gave us 3 main things. First, a list of vulnerabilities or equipment (inaudible), and now we have a plan to fix it where possible. Second, we have an exhaustive list of the machine with cellular capabilities for remote maintenance and now we can better control the access; and third, we have a list of machine, which were not correctly or adequately configured, and we have a plan for optimization.

As you may know, many ICS network are flat, and we wanted to work on segmentation in order to avoid the threat can propagate over the ICS network. And at this stage, the inventory of asset was a key first step.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So just have been looking at your list, right. So assessment gave you, hey, these devices are vulnerable so you patch them. You made sure that people only who need access to the machine should get access to it, not everybody else should and now you're proceeding with segmentation. Does that cover it comprehensively?

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**Stephane Chopart;Airbus Helicopters;Head of Product Security**

No, not totally. But the integration of Cyber Vision with [ISC] will help the deployment of this segmentation project. We are preparing the move to industry for the 0. And the fact that Cyber Vision is now natively built in Cisco switches will speed up and help the deployment of this project.

What we have to look at now is how to integrate this in our security operation center. The plan is to streamline the investigation and the remediation of both IT and OT incidents. But perhaps in this area, you can help again.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So I'm going to talk about that a little bit more in terms of how we're helping IT and OT, 2 teams that most often don't talk to each other -- that's another thing that we talked about as well, come together to solve these security issues.

Stephane, thank you so much. Appreciate having you here.

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**Stephane Chopart;Airbus Helicopters;Head of Product Security**

Okay. Thank you. Thank you so much.

**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So as Stephane talked about the fact is that you have to start with visibility. He needed to know what was in his environment before they even take the next step.

So when we look at this is, we look at it and go visibility is that first key step that you take before you do anything else. Because once you do visibility, you then get the identity of the device. You know what the devices are, you can actually group these together and once you do that, you can define policy which then gets executed. And when that is established, you can now monitor for changes that are happening in this environment. Because not every change is malicious. It could just even be plain human error.

For us, Cyber Vision is a key part of our IoT security portfolio. It automates the discovery of a number of operational assets that actually sits on things like a factory floor, a PLC, which is a programmable logic controller; it could be an IO, it could be a drive. In a utility area, it could be a remote terminal unit. And Cyber Vision actually uses passive DPI. So it never gets in the way of your industrial processes. And it decodes a lot of protocols like PROFINET, MODBUS, EtherNet/IP. And the information that it actually pulls out is very, very granular. You get make of the device, you get the model number, you get the serial number, you get the firmware version. It tells you the vulnerability. It tells you what assets are talking to what other assets.

And what changes are being made? If somebody actually comes in and modifies that program that you have on the PLC, which is very critical and absolutely running that production line better. And it actually can pull all this information out into a dashboard, so somebody like a plant manager on an Airbus factory floor can drill down and look at just the information that they need for their job. And by the way, industrial networks are not just, as we know, contained in one factory. It could go across an entire country. It could go to many remote locations as well.

So how do you do this visibility and identity of the devices at scale and at a reasonable cost? This is why we took the Cyber Vision sensor, and we've integrated that into our industrial switches and our routers and our APs. So now you're decoding all that traffic locally, and you're only sending back a summary. So think about it as a summary of that network traffic.

That simplicity at scale, good performance at a pretty reasonable cost. And we've integrated Cyber Vision into ICE so you can do things like bringing segmentation and microsegmentation, things that you're doing in the enterprise now down into these industrial control systems environments.

And for those of you who actually use Stealthwatch, we take this traffic, we take all the device information and pass it into Stealthwatch. So from that Stealthwatch console, now when you look at it, you can get granular information on what is sitting behind that IP address, whether it's a PLC, it's an I/O, a drive or a vision camera.

So to meet the threats of today and address them going forward as well, you need to help IT and OT come together, helping IT bring the tools and the capabilities that you've been working with and knowledge that you have for the past 10-plus years; and where OT brings in the business context. We're helping IT and OT come together, driven by security.

So David, I'll hand it back to you.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All right. Thanks, Liz. Wow, Liz, you've been busy. You're getting a lot of stuff done here today.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Just a little bit.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

So we -- you've been driving this IoT business now for a couple of years. And again, you see, we just continue to drive the portfolio together. First DNA Center that covers the IT and the OT environment. Then Polaris across all the [regulated] switches and now in security, bringing all the industrial protocols into the whole security architecture.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

I'm very proud to say we have the assets, and we're driving the integration to bring IT and OT together.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

Okay, great. Thank you, Liz.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Thank you.

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## PRESENTATION

**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All right. Let's change gears real quick. Let's talk about the big I, Internet, that big, big, big Internet and all the technology it takes to build that network. And if I go back to the video, and Michael Bay was talking about streaming 250 terabits. How do we think about the technology it takes to build the largest networks in the world and to build the Internet that we're going to need for the next decade or more?

That's a problem we've been working on at Cisco, of building that fundamental technology. These are projects that are years and years in the works, and we're now coming out with a whole new set of technology across the fundamental parts of networking to build the largest networks in the world.

To tell you about that, Jonathan Davidson, who leads our service provider business, come on up, take us through it.

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**Jonathan Davidson** - Cisco Systems, Inc. - Senior VP & GM of Service Provider Business

All right. Thank you very much, David. I am excited to be back here in Barcelona with all of you. It's not very often that you get to have the opportunity to explain how we've been building technology for the next phase of the Internet for the past 4 years, and we've had the opportunity to spend well over \$1 billion doing it. So it's a big burden to be able to spend \$1 billion, but it's well worth it and you'll see that in the coming future.

But before we get there, I want to explain why we decided that we needed to go and spend all of this money to help create the innovation necessary to propel us into the next version of the Internet. And it comes down to some simple factors. And those of you who are in the service provider domain know that your CapEx budget has basically stayed flat since 2012. However, the data rate on the Internet is still growing at 30% annually. In fact, mobile traffic continues to grow at almost 50% annually. So if your budgets are flat but bandwidth continues to grow, that means a single dollar or a single euro needs to do 11x the amount of work today than it did just a few years ago. And that's only part of the problem. Because for every single dollar or euro of Capex, you have \$5 additional that go into the OpEx side of the business, managing all of that infrastructure, the buildings, the power and all of the things that you need to pay for to actually keep that infrastructure running.

So what we did is we wanted to go and focus on the key elements, the seminal technology that actually will help you transform and build that next version of the Internet. We focused on 3 key things. One is specifically around silicon, optics, software and how those all come together in systems. So let me dive into each one of those for the next few minutes.

First, in December, we announced an entirely new family of silicon, starting with Silicon One. This is the first piece of silicon that breaks the 10-terabit barrier for routing. Now we wanted to have a clean sheet architecture. We didn't use any prior silicon families. We started it completely clean from the ground up, which enabled us to focus on having the benefits of switching with all the feature sets that you need for routing including big buffers. It has 2x the bandwidth and 3x the packets-per-second of the next nearest, closest routing silicon. This is industry leading. Not only that, but it has over 80% less power utilization per hundred gigabit than the next nearest routing silicon. So the team set out to do something that was thought of as not being possible.

And then made it possible with Silicon One, and something we all very, very excited about. Now if we move forward, to what's happening with Optics. Now Cisco, you may not know, but we actually have been building optics for well over 10 years now. But over the last 12 months, we have spent \$3 billion to acquire 2 new optic technology companies. One, Luxtera, to help us automate the actual building of optics themselves, specifically around 100-gig CWDM, but we also announced the intention to acquire a company called Acacia that is going to help us, when that closes later this year, go and move into the coherent optics space.

Now it's important to note that if you go back, one of the reasons why we did this is not only for architectural change, but also how money is being spent. If you go back 10 years or so ago, and you look at the cost to move a bit from point A to point B, about 90% of the cost was actually in the router and 10% was in the optic.

If you go to today, you're looking at well over 50% of the cost is in the optic and the rest of that is in the network element. If you move to a coherent world, you're looking at well over 80% of the cost is now in the optic and then the rest of that are in the network elements. So not only is the -- where the cost is changing, is moving around, but also the fact that we have this new technologies with silicon and optics coming closer together, there's new architectures that we can take advantage of as well.

So later this year, there's actually going to be a new type of optic coming out called ZR and then following that, called ZR+ for longer reach. That's going to enable you to take a transponder that was traditionally in a separate chassis and actually put it into the pluggable and then plug that directly into your routed elements. This means that you can dramatically simplify your infrastructure, have fewer network elements inside the infrastructure and make it easier to automate that infrastructure. This is something you'll be hearing more about as the year progresses.

All right. We talked about silicon, we talked about optics. It's time to talk about software. Cisco IOS XR powers the majority of the world's Internet. But it's also 20 years old, and we determined it was time to reimagine this OS. And so we've been spending the last several years going through and simplifying it, optimizing it, actually removing code out of this software so that we can go and make it easier to deploy by shrinking the image down. We also can simplify it with new and greater open interfaces, so it can tie more easily into your automation systems. And we've also created a whole new level of trust inside of XR as well that starts with hardware and goes all the way up through the OS. But this is also the first operating system for critical infrastructure that is cloud enhanced or cloud augmented. And let me talk to you a little bit about what that is.

So first of all, Cisco Crosswork is taking intent-based networking and applying that automation portfolio to the service provider. It's a set of on-premise applications, but also we've now augmented that with a set of cloud-based applications.

The first of which I want to tell you about is Cisco Crosswork Network Insights, which helps you understand if any of your BGP routes have been hijacked anywhere in the world. We have real-time data on over 300 million BGP routes globally, and we can notify you within seconds if anyone accidentally or maliciously has tried to take control of your routes anywhere in the world. That's number one.

The second is Trust Insights. We want to make sure that you know that you have an immutable source of truth so that the hardware that's deployed is known good hardware and then the software that's deployed is known good software as well. And that's Cisco Crosswork Trust Insights.



The third one is all about the qualification environment. One of the things that people tell me is the amount of time that it takes from when we deploy new software and put it on cisco.com to the -- all the testing that needs to happen for you to then go and put that software into your network. We wanted to make it a lot easier for you. So what we've done is we've created a cloud service where you can upload your configuration, you can select what hardware platform you have and what version of code you want to test on and using machine learning, we actually dynamically build a test plan for you, which you can then run in the cloud or you can have a connectivity back to your own lab and you can actually run the tests from the cloud, utilizing your own equipment in your own lab.

We expect this to dramatically decrease the amount of time between when we put out a new software release to when you're actually able to deploy that release into your infrastructure. So you can go from 3, 6, 9 months of manual testing that you might do down to a few days of testing or even less than that, something we're very excited about.

All right. Now if you take the silicon, you take the optics, you take the software, you need to be able to put that together in market-leading systems. And what we have now is an entirely new platform called the Cisco 8000 family that in a single RU, you can have 10.8 terabits per second in a single router device. And if that wasn't enough, you actually can go and have a modular platform going all the way up to 18 slots at 14.4 terabits per slot and you can have a grand total of 260 terabits in a single platform. This is going to enable the next version of the Internet with all of these great architectural foundations coming together.

So with that, a real recap just because there's a lot coming at you. Number one, the most advanced silicon in the world is now out, Silicon One. We have cloud-enhanced operations with XR7 with a whole new level of trust, and we have a whole new family of portfolio, the Cisco 8000. You can go out into the World of Solutions, take a look at the platform family itself and you also could take a look at the silicon as well.

Don't forget to take a selfie. All right, David, back to you.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All right. Thanks, Jonathan. All right. Jonathan, I always think of -- when I think of our portfolio, I think of my business networking, silicon, software, optics. How do you put all 3 together, you get networks. And all 3 are new. Is that right?

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**Jonathan Davidson** - Cisco Systems, Inc. - Senior VP & GM of Service Provider Business

You got it.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All 3 are new from the ground up. Okay. Thank you very much.

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**Jonathan Davidson** - Cisco Systems, Inc. - Senior VP & GM of Service Provider Business

Thank you.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All right. That's a lot. Everybody hanging in there? Good, good, good.

All right. Now we're going to get to the coolest part of the portfolio. The part of the portfolio that everybody can reach out and touch and talk about all the new things going on in collaboration. Sri, come up and take it away.



**Sri Srinivasan** - Cisco Systems, Inc. - Senior VP & GM of Webex Meetings, Teams, Calling & Devices

Thank you, David. (foreign language), everyone. I am so happy to be in front of our -- in the midst of our best customers in this beautiful city, at the start of this decade, talking Cisco Collaboration. What more can a geek want in life?

So if you haven't seen Cisco Collaboration lately, you're in for a big surprise. It's a whole new world. A modern workplace, a modern portfolio beckons your workplace, your employee experience and your customer experience.

Now rather than me telling you, let's hear from one of our customers, one of you.

(presentation)

Wow! [All this] is taking advantage of the entire portfolio. They are pretty much not only transforming their employee and customer experience. They changed how they do business. Now we've gone from disparate apps from calling, meetings, messaging into one single, simple, gorgeous app that meets all their needs. This new app, Webex Teams, is fully personalizable to bring your brand into the workplace rightfully so. Modular to work the way you want it, if you only want to use Meetings. If you are a person who just loves to make calls or a message, any combination thereof, you've got it. It's live now.

Now this app, here's the kicker. It's part -- it's the tip of a very large platform iceberg. And one of the potent benefits of this, important in here in Europe, is the immense security blanket enveloping this platform. We've taken a security and privacy respectful approach to our intelligence platform, Cognitive Collaboration.

Now let me tell you how that works. I'm sure you can empathize with me. We all spend way too much time in meetings, don't we? What's with all those action items you have to keep track of every single day? Even harder, trying to remember what was said in those meetings. When you go back at the end of the day and try to remember one of those small tidbits, it's so hard, right? If you have that problem, we've got a solution for that. Our WebEx platform now comes with real-time transcription and translation capabilities so that you can track those action items with ease and fear of forgetting what was said in the meeting, a thing of the past. Let's take a listen.

(presentation)

Cool, eh? WebEx speaks Spanish. I'm sure many of you in this room are wondering skeptically, is my data stored right here in Europe? Is it encrypted? Is it secure? Do I have the privacy controls? I would be one of you, too. I got you covered. WebEx rest assured has the privacy controls, is GDPR compliant.

Now what I just showed you, this app, for all types of WebEx users, all types of WebEx users globally connects to one single platform. So there's something missing in this story of mine. Interoperability. Good news, folks. Now we connect to Microsoft, Google, Apple and all the other applications your employees live in every single day. Hello, ecosystem. Let's take a closer look.

(presentation)

I'm sure many of you are wondering. Did he just say Microsoft on stage here. Yes. Yes, I did. For too long, Microsoft has been an Or. Microsoft or Cisco. Now it's an And, Cisco and Microsoft. Now let's take a look at one of those example scenarios.

I've got a Microsoft Teams meeting here, you can see the purple band with a bunch of folks joined on their desktop, on their mobile phone. And we've got this beautiful Cisco device there in this large meeting room of ours, waiting to join that meeting. Neil, can you hit that green button?

Now as soon as you hit that green button, we go from the Cisco Webex cloud securely all the way into Azure into Office 365 and bring that into [ROP] across these 2 worlds that have been separate for far too long. It does take a little bit. And as you can see, it's now there. It's connected right in so the lights are shining bright. And Neil, can you change the layout from prominent to equal? So that we can see that the device is fully joined.



It will be better in a smaller meeting room. And as you can see, we come with all the rich layouts that you've come to see in our device portfolio. Thank you, Neil.

As you can see, we're only getting warmed up. We're getting started for the sake of the choices our end users make. Not only with devices but also calling.

Now on the subject of calling, if you happen to be one of our CallManager customers, one of the 92 million users, despair not. We've got something for you, too. This unified app connects directly to CallManager blowing open the door to all the innovation I talked about: Meetings, messaging, transcription, cloud-based innovation without any additional deployment cost to you, resulting benefit to you, a killer employee experience. Webex now is the connective tissue driving modern-day workplace transformation, whether you're on your mobile phone, in front of a desk, in a meeting room, we make sure you get the same information wherever you go.

Now no session of ours is complete if we haven't shown you one of our brilliant devices. I've got a few up my sleeve today, and I plan to show you at least 2 of them. So the very first one, announcing the instant office, the WebEx Desk Pro and joining us, Annemarie from Oslo.

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**Annemarie Hauge;Technology Evangelist;Oslo Experience Center**

Yes. Hi, Sri, and hi, everyone. Great to see you all. So I'm now joining you from the amazing new Desk Pro. And these new features are so cool. Right now for example, I've been sitting down for a couple of hours. If you guys don't mind, I'll just get up and stretch my legs a little bit. You see that? The camera is automatically following me.

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**QUESTIONS AND ANSWERS**

**Sri Srinivasan** - Cisco Systems, Inc. - Senior VP & GM of Webex Meetings, Teams, Calling & Devices

So Annemarie, you've got a pretty messy office back there.

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**Annemarie Hauge;Technology Evangelist;Oslo Experience Center**

You think?

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**Sri Srinivasan** - Cisco Systems, Inc. - Senior VP & GM of Webex Meetings, Teams, Calling & Devices

Yes.

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**Annemarie Hauge;Technology Evangelist;Oslo Experience Center**

What mess?

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**Sri Srinivasan** - Cisco Systems, Inc. - Senior VP & GM of Webex Meetings, Teams, Calling & Devices

That's cool, right? So this adoring audience that has just woken up would love to see you right here in Barcelona, showing these devices.

**Annemarie Hauge;Technology Evangelist;Oslo Experience Center**

Sure thing. So thanks to my Desk Pro, I can actually now join meetings from anywhere and look professional in any meeting.

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**Sri Srinivasan - Cisco Systems, Inc. - Senior VP & GM of Webex Meetings, Teams, Calling & Devices**

Thank you, Annemarie. The Webex Desk Pro, everyone. You guys ready for this piece of innovation, join us at the World of Solutions and see how this device is going to transform every desk in your office or the remote office.

Now you've been table pounding for a long, long time for a new immersive, rich experience for C suites, boardrooms and executive rooms the world over.

Alas, the wait is over. For the first time in Europe, announcing the new Webex Room Panorama, everyone. With Annemarie, again.

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**Annemarie Hauge;Technology Evangelist;Oslo Experience Center**

Welcome back. And I now moved into the boardroom, right, and we're using the brand-new room, Panorama. So that's the same setup as you guys have on your side. And this is our new flexible, immersive flagship experience. So instead of cutting the table in half, we're now cutting the room in half. And flexibility means more options in room design. It could be bigger rooms like the one we are in, it could be the more classic immersive scenarios that you all know or anything in between.

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**Unidentified Participant**

It also means we support any type of meeting, immersive or multipurpose, you name it. So it's really a great experience for me to sit here and being able to easily engage with all of my colleagues here in this room. And at the same time, being able to look down the table and fully connect with all of you. Well, I should say, almost all of you. So back to you, Sri.

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**Sri Srinivasan - Cisco Systems, Inc. - Senior VP & GM of Webex Meetings, Teams, Calling & Devices**

Thank you. Thank you to Annemarie, [Tobias] and the whole Oslo team. They are just fantastic, aren't they?

Come back at the end of the session, you can come and check out this beautiful Webex Room Panorama, join us in the World of Solutions We've got a device there, too.

Now as you saw from the (inaudible) video that I shared with you earlier, it's not just about employee experience when you're transforming your business. It's also about your customer experience. Let me show you how WebEx Contact Center can help. Today, more and more companies, as you know, are selling experiences, not just products, like these companies out here. We, as enterprises in this room, we as consumers in this room, are used to that best experience where there's no support call. Enterprises in this room know that a support call is just inevitable.

But are we proactively ready to handle today's changing customer expectations? Can we preempt issues? Can we self-heal problems as they manifest? Do we learn from every support incident? Is the product getting better? Now customer buying patterns today are influenced by stellar customer experiences, more than just product.

With Cisco Webex Contact Center, we are infusing intelligence into every facet of that engagement. Intelligent, experienced management to bring awareness of that customer journey, that important customer journey. AI-powered super agents with the right information at their fingertips to expediently resolve issues. No more reactive agents. And finally, Cognitive Collaboration. You heard (inaudible) talk about this. Bring the human back into the interaction with the customer.

More and more, you have to leave an indelible positive mark with that customer, and our customers are future buyers, too. Let's take a look at how our Contact Center is transforming the experience at T-Mobile.

(presentation)

Wow, what an incredible story. You saw (inaudible) and T-Mobile powering some amazing transformations. We are here to learn. We are invested in your future with our innovation engines, modern Cisco Collaboration with its focus on AI, security and privacy, respectful approaches beckons you.

Thank you. Back to you, David.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All right, Sri. That was a lot. WebEx translates Spanish in real-time, integration with Teams and whole new devices for the desktop, for the whole room. Fantastic stuff. Thank you very much. Take care.

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**Sri Srinivasan** - Cisco Systems, Inc. - Senior VP & GM of Webex Meetings, Teams, Calling & Devices

Slightly busy. Thank you, David.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All right. We've covered an enormous amount of technology here today. And we've got one group that's going to take us home, which is all about how do we help you consume all of this technology, which is really important to us. And how do we engage with you and there's been a lot of changes in that space in Cisco over the last couple of years. And of course, it wouldn't be a keynote if we didn't cover DevNet.

So to take us home, Alistair Wildman and Susie Wee. Come on up. Take it over.

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## PRESENTATION

**Alistair Wildman; Head, EMEA Customer Experience Group**

Thank you, David. Thank you. First, let me start by welcoming you all to Cisco Live 2020, and thank you all for being here today. I'd also like to just say that it's a year since we've been here, but our company mission hasn't changed. Our #1 mission is to make sure that we make you successful. And what I'd like to start to do first is to run a video of a customer we've been working with this year to help them be successful. They're from Dubai, from the Middle East. And they're preparing for the world's greatest show. Roll the video.

(presentation)

Amazing. And this is an incredible project. And well done to the team behind this.

In October 2020, 25 million people will visit Dubai for the World Expo. And it's an incredible example of how everything has to be faster, it has to be bigger, and it has to be better. And that's exactly what you're telling us. We heard from Wendy in the opening keynote today about how the digital transformations are driving us all forward. And we know that every one of you in this audience today is working for a company that is doing some form of digital transformation. No matter what your sector is or no matter what size that company, you're all transforming.



And we also know that digital transformation is difficult because you're transforming technology and business at the same time, and it can no longer be business as usual. As you saw from David and all that amazing technology that we showed today, there is an implicit expectation. As you move to a software and subscription model that you need to move the entire business process to a life cycle methodology. And it's really, really important that we get this right. We can no longer just learn the technology, and we have to do it together and we have to do it at scale. And the great news is Cisco and our amazing partners are here to help you as we help you move through that life cycle, and we're also helping you to bridge the new skills gap as we move into this brave new world.

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### **Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

So as Alistair said, it's not business as usual. And what happens is, as we talk to all of you, our customers, what you're doing is you're coming to us to Cisco and our partners and asking different questions, so before you came and asked for networking and connectivity. But now the questions are different as your businesses have grown, your networks have grown, and they're starting to get more complex. So now our customers are asking, help me automate my infrastructure, help me automate, automate, automate. And help me use it, help me use my infrastructure to solve my business problems.

So that represents a big technology transformation, where we can use the capabilities of the new network to automate, but a shift where we actually use the infrastructure to solve business problems. And the reason that we can do that is because it's an entirely new network with new capabilities. The network from 5, 10, 25 years ago is different from today's network, as you saw from David and the team. This network uses intent-based networking and multi-domain networking. It's programmable. It has APIs, which lets us support DevOps workflows and automation; and application areas like IoT and Edge computing and cognitive collaboration all come together; and then capabilities like AI and machine learning and security are built into the network, not just done separately. And so as we put those together, that's how we can use the network to accelerate business, to do automation at scale, to gain insights and intelligence and then also to drive business outcomes.

Now Alistair always likes to talk about the future and think about the future. So what we're going to do is show you some innovations and collaborative intelligence that will be coming to you.

(presentation)

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### **Alistair Wildman;Head, EMEA Customer Experience Group**

Thank you. Collaborative intelligence is the future of the customer experience solutions. It's an incredible, incredible platform that we're developing. And I was trying to think of what's the right analogy to explain how we're bringing this to market. And I thought about this new smart meter that I've just got into my kitchen.

And before that, I used to get a gas bill or electricity bill and I use to pay it by direct debit every month. I never ever looked at the bill. And about a year ago, I got a smart meter. I got this lovely little device with a user interface, and I can press buttons and I get a graphical interface of all that interesting information behind it.

I didn't actually know that electricity was 50% cheaper in the evening than it was during the day. But now I've got that intelligence because of that user interface. And what we're doing with collaborative intelligence is the future. We're going to provide you with a digital experience. And we're going to take all the amazing telemetry and data out of all the products and solutions in Cisco. And then we're going to map them to the use cases that you used to buy those solutions and your life cycle journey with those solutions.

And then we're going to add experts, and they could be Cisco experts. They could be partner experts, or we'll hopefully make you the experts as well and bringing them all together that will give you that incredible collaborative intelligent experience.

Now not only is this new, we're also showing this in a World of Solutions. So if you have time this week, please come and join us at the Customer Experience booth. And we've got 5 demo pods, and we'll be happy to show you the future of the customer experience solutions.

And not only with this great new experience solutions, we've also got a fantastic portfolio that will help to drive the digital transformation. And I'm really pleased today to announce that we're reimagining our flagship services product, the Business Critical Services 3.0. And for the first time ever, this will be brought to market with our partners, and it will be scaled through our partners. Thank you.

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#### **Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

And so as Alistair said is, it really is all about our customers and our partners, all of you. And what we've been doing is really working to help you continue to build the teams that you need to grow your business. So as we took a look at your technology teams and your IT teams, what we see with all this new technology is that it's a combination of the world of infrastructure engineers and the world of software developers. And more specifically, that as you're building your teams, what you need is infrastructure skills and expertise and software skills and expertise.

So what we announced is an entirely new set of Cisco certifications, so the new Cisco CCNA, CCNP and CCIE certifications. And we added to that an entirely new set of Cisco DevNet certifications to also certify your software expertise. And so these come together for you on February 24 so that you can train your skills and certify -- train your people and certify them to get the certifications that they need.

And this prepares you for new job roles that didn't exist before because of the technology. So now that you can do automation and that the technology is programmable, we have new roles like a network automation developer. And you can get that by getting a DevNet professional certification along with a DevNet specialist and enterprise core and enterprise automation and DevOps. So when you put these together, you can then figure out the network automation developer.

Another new role is the web scale engineer. And this is not just for a web company. It's for any retailer, for anybody who has an infrastructure that works with that scale. And you can train for that web scale engineer with the DevNet professional together with ACI automation, data center automation and programmability, and then DevOps skills. So this is the way that we're modernizing to make sure that you can have the skills that you need to grow your business.

And the new DevNet certifications come available February 24. And what we're going to announce is that the first 500 people to earn those DevNet certifications are going to be recognized as the DevNet 500. So sign up to be those first ones. Who's going to go out and get that.

Anybody?

And also, what you want to know is, which are the partners that are really scaling up and being able to offer these capabilities, the DevNet capabilities and the CX capabilities? So what we're doing is we are launching our DevNet specialization and our CX specialization for partners so that you can differentiate your business and that our customers can know who's delivering these types of solutions.

And you can get started now because we have 61 new courses that you can send your folks to, that you can go and learn today. These are all becoming available January and February, so you can start learning today to earn those certifications.

And so as we bring this together, what we do is we ask us to work together and join a challenge together where we, together, drive business outcomes with the new network.

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#### **Alistair Wildman;Head, EMEA Customer Experience Group**

Embrace the new customer experience solutions to get to value faster.

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#### **Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

And then we look forward to working with you as we did in the last 25 years to really drive your business success with the Cisco ecosystem for the next 25 years.



**Alistair Wildman;Head, EMEA Customer Experience Group**

So we've always known that you are the heroes of IT. So please join with us, and we'll help you make the heroes of your digital transformation. Thank you.

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

Thank you.

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**Alistair Wildman;Head, EMEA Customer Experience Group**

Over to you, David.

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**David Goeckeler - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business**

All right. Alistair, I saw this new collaborative intelligence portal being built. I probably saw the first version about a year ago, and it was amazing. It's amazing how fast it's evolved. And I think more and more, this is going to be the entry point of the higher portfolio. So I want to tell everybody here, if you're going to see one thing here this week, go see this because this is really a big change in how we're -- the whole customer experience for Cisco.

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## QUESTIONS AND ANSWERS

**Alistair Wildman;Head, EMEA Customer Experience Group**

Definitely, it's amazing. Thank you very much, David.

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**David Goeckeler - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business**

And Susie, there's just might be a little bit of something for DevNet out there, too?

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

There might be a couple...

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**David Goeckeler - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business**

There might be somewhere people can go...

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

There might be a DevNet that's out there.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

That's probably half the place out there is DevNet. Thank you very much.

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

Thank you, David.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

Wendy, join me back -- why don't you join me back on stage? All right. Look, we just want to close real quick. This is really an exciting week for us. We thank you all for being here. Literally, there's probably hundreds and hundreds of people from my team that are here from around the world to work with all of you and show us the greatest technology that we have and that we built over the last year. So have a great week. Wendy, thanks for hosting all of us and making all this happen.

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**Wendy Mars** - Cisco Systems, Inc. - President of EMEAR

It's a pleasure. Thank you, David, to you and the team. We've financed some amazing stuff, some fantastic demos, capability, get yourself to the hop. And also -- do you want to be in the -- in that DevNet 500? You're going to join me?

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

I'll be in the DevNet 500, for sure.

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**Wendy Mars** - Cisco Systems, Inc. - President of EMEAR

Fantastic. Enjoy everyone. Have fun.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All right. Take care.

(presentation)

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## PRESENTATION

**Unidentified Company Representative**

Hello, everyone, and good morning. My name is Toby, and it's great to be your host today here at Innovation Talks Theater. Now we're so glad that you're able to join us here at Cisco Live 2020 in beautiful Barcelona. There's a lot of us here together, and together, we can build the bridge to get you where you want to go, so you can make anything possible. At Cisco Live, you'll learn new things, be inspired and create the path to endless opportunities.

This week, we're hosting 14 innovation talks here in this theater where we'll share with you the latest solutions, innovations and, of course, best practices. Now today's session looks at the topic of Empowering Your IT Teams to Deliver in a Hybrid Application World. And to tell us all about it,





we have 2 wonderful speakers with us: Liz Centoni and Danny Winokur. First up, please welcome on stage SVP and GM for Cloud, Compute and IoT, Cisco's Liz Centoni.

**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Thanks, Toby. All right. Good morning. This is right after the keynote. As you can imagine, we had to run through like throngs of people coming here, so good to see you, see some people that from -- that I know from prior.

So here's what we're going to do, I know on stage, on the main stage keynote, if you've had a chance to watch it, we gave you kind of a compressed summary of what we're doing with AppDynamics and Intersight. We're going to go through it in a little bit more detail. We're also going to talk about kind of some of the other things that we're doing, especially on how do we enable your -- enable IT to provide things like Container as a Service. So that's what we have covered for this 30 minutes or so.

So let me start with a couple of few trends that we see in computing. Before when we talked about compute, it was either sitting in your -- we had the 4 walls of your data center, then in terms of what shifted to the cloud. When I think about computing, I look at it as a computing spectrum, everywhere from your IoT Edge all the way to the cloud. Now being in IOT, what we've seen is, especially our industrial customers, so think about it as refineries, factories, mines connecting everything. Now they're not just connecting everything to be able to automate. They're connecting because they actually want to extract data and not just in terms of moving that data to go cloud, but how do I compute that data at the edge and get business insights.

But think about this use case, right? You're in a refinery, and you've got a ton of sensors around that measure everything from gas pressure to flow and everything else. You have a lot of people that work in that refinery. These can be pretty hazardous environments. When there's a gas leak, you don't want to take that data and haul it all the way back to the cloud. You want to be able to compute that information right there, know exactly where your people are with location tracking and be able to evacuate those people. That is just one use case that I can think of. I'm sure there's multiple use cases that you can think of every single day. So it's not surprising that you see something like 58% of compute and storage will actually reside at the IoT edge and with provider data centers.

Now on the other side, when you take a look at it, it says 90% of our customers, you, will rely on a mix of resources, whether they sit on premises, in the public cloud, in multiple public clouds and in your own private cloud as well. So that's from a computing infrastructure standpoint. Let's talk about what is -- what does it look like from an application world. I don't need to tell you this, that applications are being built pretty modular. And last year, most applications had 8 dependencies. This year, they have 20 dependencies. Things are getting pretty complicated. And then when you think about it and go, on an average, probably an enterprise has anywhere between 5,000 to 7,000 applications. And that's going to actually double, so at least 2,500 new applications being built. The complexity is something that we need to address from an IT standpoint. Then when you look at it and go, these applications are mostly built using containers, and they're operating more in a hybrid world.

And speaking about a hybrid world, the notion of hybrid apps is not an exception. It's actually the norm. One example that I can think of is, as more and more as we talk about applications being built in a world using containers, there's still a lot of traditional applications that, yes, they're being refactored, but it's not all being rewritten. The front end may be a catalog, sits in the public cloud. The back end is still sitting on-prem because data has gravity, not just because of security and control and governance. As I said, some of the data does need to stay on-prem because you want to be able to compute that data where it's generated and get business insight.

So it's not surprising to see that 40% of data in a center investments are going to hybrid apps. So you need to think about from an IT organization, what does this net out to? I would say 3 things, and Danny and I talked about 2 of those on stage. And I know there's a lot to consume because we covered so much of it on stage because of the number of innovations that are going on within engineering. So we want to take a chance to talk through it in a little bit more detail here, start talking about apps first, how we're addressing in terms of breaking down the silos between infrastructure operators and app operators, hybrid apps being the reality; how we're helping you manage in this hybrid multi-cloud environment; and then I want to come back and talk about how we're productizing in a container world, so what is that easy to deploy appliance kind of form factor to help you deliver Container as a Service.

So I'm going to start off at the application because most often than not, when it's -- when we talk about in a compute session, we start at the infrastructure level. That's a lot of work we're comfortable with. We're going to turn it upside down and start with apps. So Danny, why don't you come in and take it away?

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Thanks, Liz. All right. So like Liz said, applications are where modern digital businesses now begin, right? We talked about how applications have moved right into the center of the business, and what we're seeing is a new competitive landscape where every company, it doesn't matter what industry they're in, it could be transportation, it could be health care, it could be financial services, every single company has had to figure out how to compete in a world of digital experiences. Because we know from the App Attention Index and some of the data that you may have heard at the keynote this morning, that companies that deliver great digital experiences are quantitatively the winners, and those that fail to deliver the right digital experiences are the losers. And for companies, this becomes existential. It's gotten really hard because, as you see here, the bar has gotten higher and higher and higher. And part of what has set that bar so high is that these digital design-led native organizations, the Facebooks, the Googles, the Ubers of the world have formed expectations among all of us as individuals around what we expect out of our application environments. And when things fail to deliver, we abandon and go look for the next thing that's better.

So here's what makes it a challenge, right? The environment that are necessary to deliver the best experiences end up requiring cloud and distributed microservices. And those environments then end up getting really, really complex because you break down your application into lots of individual components. Those components can now be iterated on very quickly by small, relatively agile teams. That's the upside, and that's what you need to do to iterate and win in a world of experience. You got to move at the speed of business. But the negative downside of it is as you end up with this kind of a view in your application [estate]. You have all these prior generations of technology where you may still have mainframes, you have client server technologies, and then you have, of course, the web technologies and now these latest cloud technologies.

You put it all together, it has to work seamlessly and flawlessly. It has to be responsive with no downtime so that you can deliver that fantastic experience because when you don't, the consequences can be quite catastrophic. There is data, depending on which report you read, that 100 milliseconds of latency on your page can cost you 1% of sales. That's from Amazon. There's another report that I just read actually this week that says that number is actually 7% of sales. Either one is a big problem, and downtime incidents that cost you hundreds of thousands of dollars for every single instance add up really quickly when as we see at many customers, there are downtimes that are occurring, the outages that are occurring, in many cases, multiple times every single week. So this adds up really, really quickly. And that's not even to mention the cost of actually being in the newspapers, having your customers angry at you, the reputational damage that is done that is much more difficult to measure.

So part of what's going on inside our organizations that lead to these challenges getting worse is not just a technology challenge, but it's also an operating model challenge. We're working in organizations that have historically been very siloed. And so even within our operations teams and our development teams, we see situations still like this at many customers. You go in there, and they're dealing with a troubleshooting problem, an outage, an issue, they want to fix it, but they're pointing fingers at each other, right? Hey, my thing looks good. Does your thing look good? Yes, mine looks good. But the reality is that across the hall, you've got the business leaders who are now relying upon that application as the core business that they're trying to deliver. Every initiative that they try to execute has to be done inside that application. And this is what they're doing. They're pulling their hair out, business results are suffering and they're unable to realize the benefits of a great digital experience.

So what AppDynamics does is helps to cut through the noise of this problem and bridge these different separate teams so that they actually can come together and look at what we call a business transaction. This is sort of the organizing principle of how we monitor, and it cuts through all of the components that make up this distributed dynamic estate. And it gives you a view that basically represents the path through the application in order to deliver the key outcomes that your users need and expect from the application. In that way, when something goes wrong, you can actually have context for the problem. You understand who it's affecting, what experience it's affecting, what impact is it going to have, and you can, therefore, prioritize and actually determine root cause through anomaly detection and root cause analysis that is supported within the context of this business transaction.

Now part of what makes AppDynamics special is our ability to not only correlate traditional views of technical performance of your application, but for quite some time, we've extended that to also give you a clear view of business impact, right? So that you can now see not only technical

indicators, KPIs, but you can also see business indicators that you define yourself for whatever your business is. So you can say, if you're in retail, I want to know what are the SKUs that are being most frequently added to my cart. I want to know how many euros or dollars or pounds are in my cart. I want to know what the checkout rate is or the conversion rate is through my funnel. And you can actually monitor those things in real time. Or as the example we have here and which we talked about on stage this morning, a financial services application, how many insurance quote dollars are being generated? How many loans are going through? What is the volume going through online bill pay?

Today, as you may have heard in the keynote, we announced another new lens, another new correlated experience within AppDynamics. We call this the Experience Journey Map. And what it does is it adds to the view of the business transaction and the business impact capabilities that we have so that we now, for the first time, and this is unique to any other APM tool, any other application performance management tool, we have the ability to use AI and ML technologies to dynamically map your top user journey on the front end of the application, literally the screens your users are seeing at the end-user experience level, and actually let you see whether the things that are happening on the back end are correlated to the things that are happening on the front-end experience. And that becomes an important and powerful new lens because it allows you to prioritize what's really important before you worry about other alarms or alerts that may be going on in the back end that are less important.

And so what this does is it helps us begin to change our internal operating model from one that looks like this, where we have separate business development and operations teams who are siloed and unable to achieve the velocity that is needed to win in a digital world that you have to compete on experience, to one that looks more like this, where you have a BizDevOps operating model. These teams work together closely, more collaboratively and more intimately than they ever have before. And this allows them to gain velocity, and velocity is gold. That's what allows you to actually win, iterate more quickly and achieve the experiences that allow you to move at the speed of business.

So what we announced also this morning is a very, very exciting step on a path that we're pursuing at Cisco, which is to begin bridging across not only the tools at the application layer, but also the tools that go all the way down the stack into every single layer of the infrastructure because applications depend on infrastructure in order to work. So the legacy systems, that separate operating teams have historically used are siloed, and they keep the team siloed, right? Because they have different sources of truth. They have different data, and they then end up back in this finger-pointing game because they don't understand what one another has seen. What we've been doing is on -- is working on a journey at Cisco to replace the legacy tools with modern software-based versions that are open, extensible and interoperable with one another.

And what this does is it allows data exchange between the different tools up and down the stack that make it possible to actually assemble a single view that lets you come together and actually have one shared source of truth that you're going to use to determine what's going on, so that, that finger pointing turns back into a collaborative game not only at the application layer and with the business, but actually with all of the ops teams that represent the different layers of the stack. So Liz and I thought it would be worthwhile to actually take you through the demo that we did this morning in a little bit more detail, and we can sort of give you a sense for how this actually works in practice.

So Liz, do you want to come back up?

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So Danny, as you were talking about, it's important for us to understand what happens at the application level. I think it's important for all of us, not just for those of you who run IT operations every day, but those of us who actually build the infrastructure as well, right? Most often than not, when we build the infrastructure, we're like, there's people on the application side, they can care about. But when you think about it, you're building that infrastructure, you're buying it, you're deploying it in the service of an application. So more and more, what we want to do is look at how do we provide that full-stack visibility per se. So maybe we can get...

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Should I jump in?

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Yes. Absolutely.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Yes. So if you look here, this is AppDynamics, which is where we'll start at the application layer. And we're in here monitoring this fictional application, next-gen financial. And you can see at the very top of the screen, we start with what really ultimately matters to the business, which are the business metrics themselves, so how we're doing on the insurance quotes, how we're doing on our loans and our online bill pay. And below that, we see the business transactions that actually are those building blocks, those pathways through the application, each of which delivers a key outcome. We see a few problems here, but we're not yet sure exactly what is the source of the problem because you're seeing different alarms in different places. So what we want to be able to do is actually correlate across these by looking through the eyes of the actual users and what they're seeing.

So I can click on the 450K, and it takes us into the new feature that we launched this morning, which is the Experience Journey Map, right? And that Experience Journey Map uses the AI and the ML that I mentioned to give you these paths through the application, which corresponds, as you would expect, to the business metrics that we started with. But now we're seeing them screen by screen by screen, and we can see that really where our problem is, is in applying discounts. So at the end of that journey, you see the quotes being sent. Even though there were alarms about it, it's not actually affecting our users. So there may be a resource issue, but the users aren't actually experiencing it, so that would be the wrong place to start and prioritize our effort. So instead, we're going to dig in to what's really going on with how we apply our discounts.

And so we can get a little bit more details from this view, and then we can go up to our dashboards and reporting view and actually jump in to see what AppDynamics sees beneath it, beneath the application. And there, we see the infrastructure components. Again, we see quoting services have a bit of an issue. But we know that really where we need to focus our efforts is on the VMs that are actually alarming for discount services because that's what our users are struggling with. So this is where we now normally would get stuck. APM tools are normally siloed separate from infrastructure tools, but you have something new to show us on how we can actually bridge this gap now.

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## QUESTIONS AND ANSWERS

**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

And I will tell you is before our 2 teams started working together, I think the concept of like this Experience Journey Maps was pretty alien because you never think about kind of what's happening in the back end of what's on the application side because we're more focused on, like we did when we launched Intersight a few years ago, and we actually have close to 500,000 devices that are connected to it, right?

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Yes.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So it's a tool that actually helps you set up and manage your servers, your hyperconverged clusters, your storage arrays. And big focus was that -- around that was how do we troubleshoot the infrastructure, so when anything goes wrong, like your DIMM and your UCS server, for example, is on the point of failing, it can actually now open up a service request with TAC. It can send the logs. So our focus was very much around, let's make sure that the infrastructure is healthy, not thinking about the fact that the infrastructure, the applications are pretty dependent on that infrastructure.

**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Totally dependent.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Right? And the whole idea was, hey, I'm looking at this within the tools that I have within my area, and the idea is somebody is looking at it from the other side. So this is the first time where we actually brought those 2 tools together where they're sharing the data, and that's what you show -- we showed on main stage as well, and I would say is the new capability of having the workload optimizer provide this dependency graph is something that gives us a visibility in terms of really understanding that if you look at applications, which is at the top of the heap, if I could call it a heap. It's a beautiful dependency graph.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Sure. It's a beautiful heap, yes.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

But at the top of the heap is the application. And you look at the dependency that it pulls together in terms of all the things that it's dependent on, when you look at it, the app servers, the VMs that you're on and then all the way down to the infrastructure, it's a view that we haven't seen before. I haven't seen anything else in the market that way as well. And the recommendation engine in here is pretty powerful because it is actually going through a lot of these data sets that it's collecting by making API calls. It makes API calls to AppDynamics, other APMs that are out there as well. It makes API calls at the BM layer to every type of x86 machines out there, every single storage array that's out there. And it's actually -- it's fascinating how it actually takes the immediate dependency. Then it starts building out the dependency across. So it's connecting and correlating all of these to build that dependency graph. So now you're getting a view of it where it shows that, look, it's not all green, right?

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Right.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

There's some reds and yellows in there, and it's providing recommendations. So when you talked about next-gen financial, I mean, the easy thing is with a click of a button, it gives you all the list of those applications and it's pulling that information out from AppD.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Right. So you've taken the topology data in, and now we have both of our teams in this closed-loop operating model looking at that same data and then able to take actions from there to actually troubleshoot the problem like we had with next-gen financial.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

And if you look at this, I know we called this a hypothetical because we couldn't use real customer information. We've done that before. But even in this hypothetical model, if you click on that, the beauty of it is it builds that dependency graph just for that specific application. And when you double-click on that, it actually gives you granular information.



In fact, if I go back, you could see the yellows are just related to the fact that the VMs are not performing as well. They're running hot because of memory congestion. But if you look down below, it shows you everything else in terms of all the other capacity stats look fine. So you can double-click now on this, and it shows you -- let me zoom out a little bit, it actually gets down to details, and it makes a recommendation, increase the allocation, memory allocation by 1 GB, and you can get to optimal performance.

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**Daniel Winokur** - *AppDynamics LLC - SVP of Customer and Strategic Operations*

So you must be using machine learning because you're looking across hybrid cloud environments. This is a hybrid app that has components in the public cloud. It has components in the on-premises infrastructure. You're pulling that all in. You're processing and actually figuring out what needs to happen to solve this problem.

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**Elizabeth Centoni** - *Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT*

Large data sets, so no other way to be able to do it, especially in terms of providing that feedback almost in real time, right? The beauty of this is, all you do is hit apply. And when Danny talked about the finger pointing before, what happens now is much harder to do that because once you understand what the other team is working on and then...

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**Daniel Winokur** - *AppDynamics LLC - SVP of Customer and Strategic Operations*

See the same data.

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**Elizabeth Centoni** - *Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT*

It's hard to demonize somebody when you start working with them, right?

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**Daniel Winokur** - *AppDynamics LLC - SVP of Customer and Strategic Operations*

Yes.

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**Elizabeth Centoni** - *Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT*

Usually, it's hard to -- it's easy to point fingers. Now the teams are actually seeing this in the specific tool. So the infra ops team is seeing this in more Intersight tool. The AppD teams are seeing it more in the AppD tool, so you have the same correlated data. So the team is already working on it. And this example is where -- how can you get proactive and address an issue before it actually comes back and haunts you from a user experience standpoint.

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**Daniel Winokur** - *AppDynamics LLC - SVP of Customer and Strategic Operations*

So you've now got the recommendation. We had a problem with next-gen financial. Can you now fix it and make it better for me?

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**Elizabeth Centoni** - *Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT*

Yes, it's as easy as applying it.



**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Okay. There we go.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

It's all green. I know you like to look at green.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

I like green. Perfect.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Okay. Green in many more ways, not just that dollar sign out there.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Not just that. Everything green.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

But the second example that I hear from customers very often is, look, troubleshooting, #1 on my list, right? I want to make sure that my users have the best experience.

But the second thing that comes up very often is, look, I live in this hybrid multi-cloud world. And as I talked about before, 90% of our customers will use resources on-premises, in a private cloud, multiple public clouds, how do I optimize my resources and continue to save money so that every few cents actually does matter because when you look at the individual workload and applications.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Of course, yes. Absolutely. Of course.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So let's go into that. And this is now -- if you look at Intersight, it's got 3 views. It's got an on-prem view, it's got a hybrid view and just a cloud view. I mean, I think you can see that up there. This is actually showing you the hybrid view. And the hybrid view now shows you the resources that are on-premises as well as in the cloud. And Intersight makes API calls to pretty much all the cloud providers that are out there, not just the 3 top cloud providers that we usually know. And it's -- again, it's building out this.

So let me go through this. As we showed on main stage, you've got a number of actions. There's like 11 critical actions. I won't touch on those, although it's a much more easier minor actions in terms of clicking on that. And it starts to give you a whole host of what of actions that you can take.

Now think about these. There are some of which you can actually optimize the tool in such a way that some of these actions could be automated. Other actions that are much more intrusive are something that come with where you have to take action. It's not done in a much more automated way. Like this would be one example of where it says, look, when you look at this related to the cloud, you have an instance type that probably is





a little bit cheaper, a few cents cheaper. And you can use that instead of the instance type that you have. Now as we all know, when you look at -- the cloud is supposed to make everything easy, but the choices that we get with cloud is massive.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Can be overwhelming, yes.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Right? It's almost like every day, there's something new in terms of what you get with the cloud. And when you look at -- just to give one example, I'm just taking one example of instance types out here, it comes very fine-tuned. It's tuned for -- here's your compute capacity. Here's your storage capacity. Here's your storage bandwidth and network bandwidth. And when you look at that, it's -- you go, "Okay. That's great." And you have a specific rate card, and it's a menu, so you don't get to customize it. You pick what's available, and you go, "This is the most optimal from when I'm deploying my application." And that's important.

But the question is your application is not static. It moves and changes, right? There's changes -- there's conditions that are changing. So how do you optimize for those resources to say, "Hey, there's a new instance type that's available." This is much better suited. This gives you the granular information in terms of the savings that you can get.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

So you're now applying that machine learning now to cost optimization.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Exactly.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

And we have both the closed-loop operating model for troubleshooting, but also now the ability to save cost in a cloud world.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

And we, by the way, haven't seen anything that's been done similarly because just like we did in the past with Intersight, we did this at the infrastructure level. We've seen others do this at the virtualization layer. You guys do this at the app layer, right?

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Application layer. Yes.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Maybe you can give us this feedback when we look at -- this is the first time we're showing that visibility from the infrastructure all the way to the application. This is just the first start. There's a few other things we're working on. That's for another session. So Danny, thank you very much.



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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Thank you, Liz. I appreciate it. Great stuff.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

We really appreciate you being here.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Thank you.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So Danny and I talked about kind of the closed-loop operating model, how do we break down the silos between the infra ops team and the app ops teams, kind of do the research optimization because we're all living in this hybrid multi-cloud world. These are the 2 -- by the way, these demos are also available in the launch zone as well in addition to, if you go to the World of Solutions.

So let me segue now and talk about the fact that when I was saying that more and more of the newer applications are being built using containers. And many of these are actually leveraging Kubernetes. And when I talk to IT teams, they ask us very much around, "How do I get an enterprise-grade container platform leveraging Kubernetes?" Now Kubernetes is not just one thing. It's many things. You think about it is you take Kubernetes, you've got to add something like 20 components. You have your logging. You have your monitoring. You have your registry. You have your load balancing. Then you have your plug-ins for storage and networking. And many of these are open source. I mean, open source is -- it's absolutely fantastic in terms of the speed and velocity of the features that are coming in, the innovation that is driving. So think about taking different sets of open source components where you sometimes get the drops every day, maybe every week, every month.

And you've got to put this together, curate this, test it, validate it. That's not something every IT organization wants to go through. And that's what we're providing today with the HyperFlex application platform, where we're always, by the way, relevant in terms of what an up-to-date on the upstream Kubernetes sometimes even more so than some of the cloud providers. It is managed from the cloud, and it's on HyperFlex, a platform that our customers absolutely appreciate. So that's the other thing that we're launching today. And when you look at it is mainstreaming container development.

For IT organizations to provide things like Container as a Service, this is really about bridging IT ops to the dev community. It enables those things as like self-service flexibility. Because when you are able to deploy something that's almost like an appliance and your revving it for all -- making sure that you're bringing in the -- all the velocity that open source can provide. Because your developers are sometimes very many times faster than you in terms of what's new out in the market, so you're providing that agility and responsiveness before they even come to you or look at other options that they want to go to. So providing -- we look at this as enabling IT to provide that Container as a Service. That is really about bridging these 2 environments of on-prem and the public clouds. You deploy on the cloud, you develop on cloud, you deploy on-prem. Or you develop on-prem, you deploy in the cloud. Think about this as a develop anywhere, deploy anywhere. We want to make it that simple in an appliance form factor.

Now we talked about -- a lot about what's happening in terms of breaking down the silos, building this container managed -- container platform. There's a lot of other innovations that are happening across the portfolio. In fact, you will see it in our world of solutions. They have new CBDs that are out there, especially for data-intensive solutions. There's a cloud area of new CBD that's out there. We've also built very specialized hardware for high-density AMD EPYC refresh. We have a new box for just for the -- for edge computing. And you can go see what we've done in terms of app modernization with the HyperFlex AP platform.



I know it's a lot to consume in 0.5 hour or even like bite-size chunks in the main stage. We spent a significant amount of time preparing for Cisco Live because we want to make sure that you have the best experience. So as you can see out there, there's a number of sessions today, tomorrow and through Thursday that's available for you. I would say, you have some of the best members of our team here doing these sessions. You can go to these. You can go try it hands-on at the World of Solutions. I'd really encourage you to do that. Thank you, as always, for making an investment of your time in us. We really appreciate it. I hope you have a wonderful Cisco Live. Thanks again.

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**Steve Multer;Chief Storytelling Officer**

All right. Welcome back to the hub and to our Cisco TV studio coming to you from Cisco Live Barcelona 2020 where we just wrapped up the first fantastic innovation talk of the day with our own Liz Centoni and Danny Winokur. Huge amount of technology. We're going to try to break it all down to you into some bite-sized chunks that make it a whole lot easier to digest all of that content.

I am Steve Multer. Glad to be with you here in studio. Remember to continue reaching out to us on all forms of social media, using #CLEUR. We've got the social media hub directly back over here behind us, this beautiful tower. And they are going to continue monitoring all of your comments, your photos, your videos, your thoughts on what's happening here in Barcelona, and they will continue to respond to every single one of you.

So what do we hear about AppDynamics, Intersight, HyperFlex? We are actually going to get Liz Centoni back with us, according to my clock, about 23 minutes or so from now for our next innovation talk, but this time, we're going to move on into IoT. We're going to get there in just a moment.

And right now, as Liz leaves the innovation talk stage, she's going to get all of her gear off. And our own David dela Cruz is going to grab Liz for a conversation, which we're going to get to in just a moment.

Before we get there though, let's take a moment to dive a bit deeper into Cisco HyperFlex. This is extending the simplicity of hyper-convergence from the core to edge to the multi-cloud. We're going to show you a very, very quick video tape, just about 30 seconds or so. Enjoy this quick look at HyperFlex. We're going to see you right back here live in this studio as soon as it's done.

(presentation)

Again, HyperFlex, one of the great things that we heard about, not only during today's opening keynote, but during the innovation to talk as well. And speaking of which, we are going to go right out to the innovation talk theater for our own David dela Cruz, who is there with Liz Centoni, woman of the hour. David, over to you.

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**PRESENTATION**

**David dela Cruz;Commercial Account Manager**

Thanks, Steve. Yes, that's right. I'm just in front of the innovation theater. We just saw a really great innovation talk from Liz Centoni, who is our SVP and GM of Compute, Cloud and IoT. That's a lot of jobs. So Liz, as she's over here, thank you for joining us. Thanks so much for being on the show.

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**Elizabeth Centoni - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT**

Well, thanks for having me here.

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## QUESTIONS AND ANSWERS

### David dela Cruz;Commercial Account Manager

So yes, I just wanted to get some further context for our viewers that are not here today at Cisco Live in person. At the start of the presentation, Danny was speaking quite a lot about how important it is to bridge the gap or break down silos between the infrastructure and the development teams, and obviously, Cisco can provide some tools to help customers do that. But why is that so important in your eyes?

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### Elizabeth Centoni - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

I'm looking at this from an infrastructure up. Danny is looking at this from an app down. We build and deploy infrastructures in service of the application. So it's important to know about the app world. Now the app cannot do without the infrastructure to be able to deliver that best user experience. And when you think about it, it's like in the next 2 years, there'll be 50% more applications than what we have today. So when an average enterprise has, say, about 5,000 applications, that's 2,500 more. So I think it's really imperative that the 2 teams work together because, as Danny showed, the impact of not having the best end-user experience is -- means that you lose money. Or said another way in more positive context, you can set yourself apart from the competition by having the best end-user experience.

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### David dela Cruz;Commercial Account Manager

Absolutely. I think Danny said something like a delay of 100 milliseconds can mean 1% more or less revenue. Do you think that's changed at all? Is the pace of this really increased or decreased?

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### Elizabeth Centoni - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

I would say it's increased more than anything else. When I think about it, it's not just a 50% increase in applications. 50% of existing applications are going to be refactored, retired or something is going to change. So when I go back to my prior example, that's another 2,500. The pace is actually going up, not just settling down.

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### David dela Cruz;Commercial Account Manager

Absolutely. And you said earlier that 70% of investment is going into hybrid silo applications. Can you talk to me a little bit more about the hybrid world and everyone -- how everyone is talking about it? And what are you seeing customers actually doing? What are you seeing them demanding from us and from our partners?

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### Elizabeth Centoni - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Many times when you hear about data points, everybody talks about, look, everything is in the cloud. And there's a lot of applications that newer applications and existing applications that do sit 100% in the cloud. But there's a lot of other applications that are sitting on-premises. And while these are being refactored to use newer technologies and newer capabilities in the cloud, it's most often like the front end. Think about it as a catalog of a business that's sitting in the cloud. The back end is still sitting on-prem because the data is sitting on-prem and data has got gravity. For a number of reasons, you want more control over it, security, sometimes for compliance reasons, but sometimes the data just has to be on-prem because you need to be able to provide those business insights in almost real time. So you have your applications that are straddling this world of on-premises as well as a cloud and sometimes multiple clouds as well. That is very much the reason you see our customers talking about the fact that 70% of -- even applications that are developed using containers are going to be in the hybrid world.

**David dela Cruz;Commercial Account Manager**

Absolutely. Well, thank you so much for those interesting insights. I know you've got another session to run to. So thank you so much for your time, and we're heading back to Steve in the studio.

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**PRESENTATION**

**Steve Multer;Chief Storytelling Officer**

Sorry, we're back to me. This is the beauty of live theater. Every now and then, things happen like that, makes it more fun. And that's how you know that we're not prerecorded.

All right. So we're going to continue in on this conversation. I am back here with Todd, with Siva, with James, so glad to have you guys back with me. We got a couple more minutes together. All right. So what we've been hearing is that no matter what world we're in, we're in health care, we're in financial services, we're in education, manufacturing, we all compete in this world of digital experiences, and it all comes down to the apps. That's where modern business really starts. So Todd, only because you're closest to me here, I want to start back with you. We've heard about so many solutions. It feels a little bit overwhelming. What do we really need to be honing in on at this point and why?

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**QUESTIONS AND ANSWERS**

**Todd Nightingale - Cisco Systems, Inc. - Senior VP & GM of Cisco Meraki**

So this is the opportunity for IT to affect both the top line and the bottom line, right? So these new digital experiences, these are how our customers are competing. These are the new services that they're taking to their customers. This is how they're going to drive growth and be competitive. So here's an opportunity for IT to make that work better and help drive the top line, right?

At the same time, we've historically seen a lot of over provisioning of IT assets because everyone is so concerned about that experience that they built out, hey, maybe this thing is going to take X. We're going to do X plus 0.5, right? So you're going to kind of over provision. But with this optimization capability, the ability to see the telemetry of both the application, how it's performing, ensuring that it's performing and then right size the resources to that workload but no more, we can eliminate a lot of costs, a lot of waste, right, lower the cost of computing. So what we're talking about is really just the opportunity for IT to impact top line, bottom line at the same time, with the right tool.

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**Steve Multer;Chief Storytelling Officer**

Right. Right. James, let's go to you. From the customer perspective at Duradiamond Healthcare. Liz has been talking a lot about Hyperflex. We just saw the video there a moment ago. When we look at containers, talk about the work that we've been doing around Kubernetes and specifically how it aligns with your vision at Duradiamond?

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**Unidentified Participant**

Sure. So we we're about to embark on our initial microservices journey. And my key takeaways from this morning's session in key announcements are effectively, I have a common platform, cloud-based administration and management platform, that enables me to deploy Kubernetes in an automated fashion. I can delegate some of the administration down. I've got common interfaces that are common to the common Kubernetes platform, but I can also administer and manage my -- and coexist with my existing VM estate. That's incredibly powerful.

And then to Todd's point in there, having the consistent telemetry across those 2 ecosystems is a very, very exciting development, especially as we start to kind of change the composition of apps to make them more cloud ready as well.

**Steve Multer;Chief Storytelling Officer**

Absolutely. I want to end with you over here, Siva. Let's talk quickly about the variety of containerization that's out there. We can talk Kubernetes. We can talk multiple containerization. What are we doing differently at Cisco?

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**Siva Sivakumar;Senior Director, Data Center Solutions**

So -- I mean, we saw the XS application platform announcement today. This is a -- absolutely. This is a next generation, where we are delivering container as a service in a turnkey platform that actually packages both provisioning as well as life cycle management of containers. Today, containers is such a fast-evolving technology. And it is surrounded by so many open source and other projects that actually embellish and make it even more exciting for people. But IT is not ready for that. IT is not ready for taking all of these piece parts and starting to work through that on an ongoing basis. Daily changes are not norm there. They want the satisfaction that I have the best-of-breed container platform, that I can run my applications, go to production, but at the same time, offer something for my developers for innovation and others to try in a much more straightforward fashion.

HXAP is absolutely the first platform in that space to deliver that experience of bringing the full stack experience as well as container as a service. Last but not least, IT definitely don't want a re-tax. They definitely want it to be as cost-effective as possible as they go to production. That is the other promise we are fulfilling with the project on this particular one.

I mean, if you look at everything we talked about today, the evolution of Intersight as a platform, the evolution of integration of an end-to-end capability, application all the way down. The notion of providing you insight wherever the data is and wherever your applications are running is a huge value to where we want to go in terms of offering that next-generation experience for applications.

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**Steve Multer;Chief Storytelling Officer**

Exciting capabilities and content, guys. Thank you. We're going to be watching what you're doing throughout the course of the week. Congratulations. Enjoy. Our thanks, once again, to James, to Siva and to Todd for being here in the studio with us.

We are going to turn our focus to IoT. We're going to take a very, very quick 1 minute video break. And when we come back, we'll have our own Nish Parkar hanging out in the studio with Joe Malenfant, our Director of IoT Marketing. Remember, #CLEUR all day long. Enjoy the video. We'll see you back 1 minute from now

(Break)

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## PRESENTATION

**Nish Parkar;Cybersecurity Communications Manager**

We're here at Cisco Live Barcelona 2020, and we're following on from the keynote, lots of exciting themes, and I want to focus in on IoT. So to help me do that, I've got Joe. Joe, you're the Director of IoT Marketing. Welcome.

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**Joe Malenfant;Director of IoT Marketing**

I am. Thank you very much. I appreciate it. I love being here. It's always a great time at Cisco Live.

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**Nish Parkar;Cybersecurity Communications Manager**

It is. I mean, it's one of my favorite events of the year, if not, my favorite event of the year.

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**Joe Malenfant;Director of IoT Marketing**

Definitely. It's a lot of fun.

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## QUESTIONS AND ANSWERS

**Nish Parkar;Cybersecurity Communications Manager**

So tell us a bit more about yourself and your role in here at Cisco.

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**Joe Malenfant;Director of IoT Marketing**

So IoT, Internet of Things, I lead the marketing function for IoT, right? We're basically a new architecture from maybe 2 years ago now at Cisco. And IoT has been this really nebulous concept. I think it's probably one of the most confusing terms in tech since cloud. It just means everything to everyone. And what we've spent the last couple of years doing is focusing on connectivity, and that means everything that's actually connecting to your network regardless of the use case, and we've really primarily been focused on the industrial side of it. So as the network has expanded from the enterprise side, all the way out to the IoT edge, whether you're in a manufacturing environment, a mining environment, oil and gas, electric utilities, all those things have systems that go all the way out to the edge, and they connect to it. And we've given them a really robust portfolio of networking to be able to do that.

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**Nish Parkar;Cybersecurity Communications Manager**

Yes.

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**Joe Malenfant;Director of IoT Marketing**

Today, this morning, if you watched the keynote...

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**Nish Parkar;Cybersecurity Communications Manager**

We did.

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**Joe Malenfant;Director of IoT Marketing**

Liz Centoni announced a whole new IoT security architecture. And it's really important because as they've expanded those networks, a bunch of things are connecting to it. Well, when things connect to it, the first natural thought is I'm going to get the data off of them. Unfortunately, in the critical infrastructure environment, before you can go and reach in and grab the data, you really want to get your process secure. So the IoT security launch was really centered around Cyber Vision, and Cyber Vision is the visibility into all those assets that exist so that you know before you go and get the data what you're actually securing. #1 in any security program is visibility. If you don't know what's there, you can't secure it, right?

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**Nish Parkar;Cybersecurity Communications Manager**

Absolutely.

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**Joe Malenfant;Director of IoT Marketing**

And so Cyber Vision was really based on that. We get all the visibility into what assets exist, but it also gives us 2 other really key things. Number one is operational insights. So when you're in a process environment, if you're in any type of control system environment, we need to make sure that the rules that you have in place are being enforced and nothing anomalous is really happening. And this is -- one side of it can be malicious, right? It could be, hey, we're seeing a machine connecting out to the Internet. That might be bad. At the other side of it, though, it might be someone having changed something maybe inadvertently, so really monitoring for that operational component of it as well. So between the visibility and the operational side. And then we're also getting data from Talos feeding into the Cyber Vision because Talos, I mean, come on, almost 300 threat intelligence researchers.

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**Nish Parkar;Cybersecurity Communications Manager**

I've never seen anything like Talos, right? It's really unique.

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**Joe Malenfant;Director of IoT Marketing**

So the guys are amazing. And they actually have a whole team that are focused on industrial control systems, right, on the operational technology. And so we're taking the data from those guys and feeding it into Cyber Vision.

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**Nish Parkar;Cybersecurity Communications Manager**

And you mentioned visibility operations is part of some of the key care-about for customers. So what else are you hearing as kind of key problems that our solutions are helping solve when it comes to IoT?

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**Joe Malenfant;Director of IoT Marketing**

Yes. And so like I mentioned in the beginning, right? We've done the work over the last few years to have networking extend everywhere to everything. And naturally, people say now that I'm connecting it, I want the data. So the other thing that we've announced today is called Edge Intelligence, and Edge Intelligence is really a solution that, similar to Cyber Vision, both of these solutions, Cyber Vision and Edge Intelligence, get deployed on the industrial networking hardware. So the switch, the router, the access point that you have in place becomes even more valuable because we can put microservices on it.

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**Nish Parkar;Cybersecurity Communications Manager**

Yes.

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**Joe Malenfant;Director of IoT Marketing**

Edge Intelligence is taking that data, but you've got really critical data. So it extracts the data. It transforms it from this raw unstructured format from the edge and then governs that data to the multi-cloud, because maybe you only want to share some data with the public cloud and some data you want to keep private and some data you want to share with your third-party system vendor, system maker. And it provides that parallel tunnel to ship it to all 3 of those places simultaneously without having any potential loss of intellectual property or proprietary data getting exposed, so really maintaining the privacy.



**Nish Parkar;Cybersecurity Communications Manager**

Definitely. And obviously, we're here at Cisco Live! Barcelona 2020. So I've seen already there's some technical seminars. Obviously, you've heard about IoT in the keynote. There's actually an entire track around IoT? So if people want to be learning more about IoT, well, how can they go about doing that?

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**Joe Malenfant;Director of IoT Marketing**

We've got a bunch of product sessions that are going to be happening. There's an innovation talk today. We've got, actually, a panel tomorrow morning. If you've got opportunity, go to the panel, it's going to have Airbus Helicopter as well as Orange Cyberdefense in a moderated panel where people are going to be able to ask questions. We've got a number of key sessions actually happening. Go to the World of Solutions. We've got demos on Cyber Vision, right? We've integrated it as part of the rest of the security portfolio.

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**Nish Parkar;Cybersecurity Communications Manager**

Sounds like there's lots of different ways that you can learn it by. Lots of exciting things happening. Well, thank you so much for joining me.

We've got Zane actually out in the World of Solutions. Zane, who do you have for us?

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**Zane Powell;Associate Sales Representative**

Hi Nish. Yes, and I'm here in the World of Solutions at the IoT Center, and it's absolutely packed here. I'm here with Anoop and [Yoka]. Gentlemen, introduce yourselves.

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**Anoop Mohan;Director of Product, IoT Edge**

Hi, there. This is Anoop here, Anoop Mohan. I'm the Director of Product for IoT Edge. I'm looking forward to talking to you today.

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**Unidentified Participant**

I'm [Jagadishwar] from the Port of Rotterdam. I'm IT architect responsible IoT-related projects in the ports.

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**Zane Powell;Associate Sales Representative**

Now, Anoop, my first question goes to you. We've had some back to back announcements this morning about Edge Intelligence. What is Edge Intelligence?

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**Anoop Mohan;Director of Product, IoT Edge**

Thanks for that. We just announced this morning what we call a Cisco Edge Intelligence. Said simply, it's a holistic solution for delivery of IoT data from edge to multi-cloud destination.

Let me explain what it means and the rationale behind doing it. You have these IoT devices. We generate data, physical optics. And then your applications that consume the data and have a business outcome. It could be revenue generation. It could be operational efficiency, as an examples. But these applications don't know how to actually get the data from these physical devices. And more so, they need clean data, groomed data.

Even more importantly, they need this data delivered to them securely, reliably and consistent. That is easier said than done. And that's really what Edge Intelligence is really here to solve. It's a software that runs on our gateways that is -- industrial networking and computer gateways. It has a centralized configuration plane for data policies that you can see on the screen here. There are 5 main value propositions that we have. It comes out of the box of our industrial networking gateways.

Second, it has pre-integrated device connectors for select use case and verticals. Third, it has developer-friendly tools to convert raw data to intelligent data. You can do as simple as aggregation to complex analytics. Fourth, granular level, attribute level data governance, meaning you can control which attribute of which data coming from which device can go to which destinations. Finally, we have pre integrations with our ecosystems of applications and platform providers that help them to receive and -- the data that comes from our Edge Intelligence platform.

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**Zane Powell;Associate Sales Representative**

Yes. Fantastic, Anoop. And it's all really exciting stuff here. So [Yoka], I'm going to throw this over to you. You're from the Port of Rotterdam. What future opportunities with Edge Intelligence are there for the Port, do you think?

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**Unidentified Participant**

Yes. There are a lot of opportunities here. The Port of Rotterdam, as a port, we're responsible for receiving vessels into one of the largest ports in the world, a very busy and dynamic environment, with up to 30,000 vessels leaving out and then getting into the port on a yearly basis. And receiving vessels in a safe and a timely manner into a port requires lots of data. And the data comes from various sensors throughout the port. We already use Cisco technology to track data from the sensors and move it into our applications. And looking at Edge Intelligence and opportunities there, I see a huge opportunity to increase reliability of the whole solution where we can directly move central data from the edge into the cloud where the applications are running that we use and, at the same time, being more developer friendly.

We're going to see opportunities to cut down the time it takes for projects to run, project turnover. And the developers have also more tools available now to troubleshoot deeper solutions and get these solutions out there. So that means that we'll have more and more sensors being operational the next few years. It allows us to run new solutions. And eventually, this is built towards the digital plane of the port that I'll be presenting together with a colleague of mine a bit more about tomorrow morning at 8:30 in one of the sessions.

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**Zane Powell;Associate Sales Representative**

Fantastic. And I think it's great to really hear about how Edge Intelligence is working for our customers.

So final question for Anoop. You've sold that as really exciting. How can Cisco Live attendees find out more about Cisco and Edge Intelligence this week?

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**Anoop Mohan;Director of Product, IoT Edge**

Yes. First of all, you can come to the booth here. We have a lot deeper demo. We'll walk you through the use case, a number of our customers like Port of Rotterdam that we're working on.

Second, if you are a developer and if you're interested to develop on Edge Intelligence, you can go to the DevNet area or you can go to the DevNet portal. Finally, if you're not at Cisco Live and you're listening to this, contact your Cisco representatives. We are doing an early field trial with select customers, and we're going to go GA in the next 3 months. We would love to have you on board.

**Zane Powell;Associate Sales Representative**

Fantastic. So final question, final thoughts. What's your -- what are you most looking forward to at Cisco Live? [Yoka], we'll start with you.

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**Unidentified Participant**

Yes. I'm definitely looking forward into technologies to get machine learning out there on the edge because I really think that's the next wave of edge technology that we're going to need in the ports.

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**Zane Powell;Associate Sales Representative**

Anoop?

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**Anoop Mohan;Director of Product, IoT Edge**

I'm here to meet customers like them, learn more, talk to them about what EI has to offer and make our road map better to satisfy them.

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**Zane Powell;Associate Sales Representative**

Fantastic. Gentlemen, thanks very much for your time, and we're going to head back to Nish, who is in the studio.

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**Nish Parkar;Cybersecurity Communications Manager**

Thanks, Zane. What a great opportunity to meet with people on the ground who are there working in the IoT space all day every day. And that's one of my things actually about -- favorite things about Cisco Live is you get to meet the people that are working on this, the real pros, the experts. At the show here, we have over 100 Cisco executives as well. We have the meeting village, so there's plenty of opportunities to be networking and to hear from other customers who've been working with some of the Cisco solutions as well and how they're getting the most out of some of our technology.

Now all of the tracks do tend to have a technology track, which is actually dedicated to them. You've got things like learning paths. I'm just looking at the IoT one. So we've got a DevNet section, which covers IoT. We've got full computing, application enablement, industry -- industrial security as well, which you've heard about from the keynote and from Joe just now in the studio as well as management and automation, network connectivity. And of course, getting that vertical scene as well, so understanding how IoT is using different industries and some of the best use cases.

We also then have those technical seminars. So we've also got some information from technical experts. So that's some of the benefits that you get of actually been here at the show and getting to meet and network with some of the people.

And then one final thing to highlight as well is meet the engineer, so one-to-one meetings that you can schedule in advance. So actually, save you slot and get to spend some time with some of the experts one-to-one.

So we're going to head to the -- yes. So we're going to head to the security innovation talks. So we're going to hear a little bit more about what we talked about in the studio, what we've had out in the worlds as well. But remember, whether you're joining us here at the show or whether you're at home and you're watching the broadcast, make sure you stay connected with us on Facebook, Instagram, LinkedIn, Twitter, YouTube, and use the hashtag #CLEUR. That's how you'll be able to keep in with all of the action and see what's going on.

So right now, let's head to the innovation showcase and learn a little bit more. Enjoy the show, guys. Bye. See you soon.

## PRESENTATION

### Unidentified Company Representative

Hello, everyone, and welcome to the Innovation Talks theater. My name is Toby, and I have the pleasure of being your host today. And we're so glad to see all of you here making it to Cisco Live! 2020 in Barcelona, Spain. Hope you're enjoying it. There's a lot of us here. And together, we'll build the bridge to get you where you want to go so you can make anything possible.

Here at Cisco Live! 2020, you'll learn new things, be inspired and create the path to endless opportunities. We have 14 innovation talks here in this theater, where we will share with you the latest solutions, innovations and, of course, best practices.

Now the network is quickly becoming the foundation for every IoT project. Everyone wants access to data and information from devices across their operations, from warehouses and manufacturing floors to utility lines and industrial mines to find the next competitive advantage. But security is the #1 concern for all of these projects.

Let's get started now with Liz Centoni to learn how Cisco is delivering a single, scalable solution for IoT security and data control. Please welcome Liz up to the stage.

### Elizabeth Centoni - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Thanks, Toby. Afternoon. Okay. In addition to what we talked about security on main stage, we get an opportunity to hear from Stefan as well. I have the pleasure of having one of our greatest TMEs here, Dan Behrens, and Dan is going to give us a demo. It's always great to actually see what we're talking about as well. And then Vikas is going to come up and talk about what we're doing in the area of Edge intelligence. Right?

So rather than just delve into this in detail, let me start a little bit by talking about -- when we talk about IoT, a few years ago, it always used to be about stats that you get in terms of how many billions of devices that will be connected at any point in time. Today, both in your personal lives and when you look at -- even in the far edges of the world, like your mines and your refineries, things are getting connected. And the reason customers are connecting this is because they want to actually pull out data and get some business insights, driving top line as well as optimization of processes. But there's 3 things that actually stand out for us.

One, when you look at these heavy industries, they're actually going to be connected back to your enterprise networks. And these environments are actually moving to kind of a standard IP Ethernet stack. Because when you think about how do I connect like hundreds and thousands and millions of devices and do it at scale? How do I secure these? And how do I pull information out of all of these sensors? There's no better networking stack than an IP Ethernet stack. So you see more and more of these environments moving to that.

The second thing is the higher value of connecting something is not just for the automation. It's to be able to pull out data so you can get those business insights. You'll see examples that we'll show later in terms of why customers, especially in a steel manufacturing plant are looking to pull those -- pull data out of the machines, out of their foundries so they can actually address quality issues when it happens, not when you get to a bunch of finished products that you'd then have to toss.

And the third thing, as much as you see the ROI, you see the value of connecting things, security is still a top of mind concern. Because when you think about the industrial environments, right? Most of the devices that are sitting out there, these are operational devices. These are not the user-centric devices in terms of our cell phones and tablets. They were from generations ago, and they're not built using modern identity standards. So there's no easy way to discover these devices like we do in the enterprise world.

When I look at the past 3.5 years, I thought it would be helpful for you all to look at, we have about 70,000 customers in IoT. And when we took a look at what's happening over the last 3.5 years, here's where we find customers in terms of deploying IoT. Transportation, mining and oil and gas

is the top 3 in terms of growth. And this just includes what I would say, the non-carpeted space. There's -- I haven't even included the carpeted space of health care, retail and financial, for that matter.

In transportation, an example is where we are with our control center platform, connecting more than 50 million cars today. And the use cases could be anything from telematics, getting that information out via car. So it can alert you on when your car needs a service or even driving more over-the-top software updates to the car. In fact, one of the examples when I think about transportation is it's so broad. It includes everything from roadways to railways. So think sea, land, air. But here's an example of what we're doing in Austria, right, here in Europe with ASFINAG. And by the way, you can take this exact example, take it to every city, every country in the world, and the ask is pretty much the same. Cities across the world are looking to connect their roadways. They're looking to collect information from sensors that are embedded in the roadways, sensors that will tell you about temperature, about environmental changes like when the fog rolls in.

And this is an example of where you're doing it in pretty harsh conditions, especially when it's the winter time. So this is about giving citizens real-time information of what's happening, whether if you need to shut down a road because it's too foggy and you can't see. You can't even see your hand when you put it out there, to also whether there's alternate routes to take so that you can divert traffic from just busy areas for that matter. But underlying all of this, to be able to connect all these sensors and do it in a reliable way and actually extract that information, you need a secure and reliable network.

So when you look at the investments that we make in Cisco IoT, I would say it probably fits in about 5 broad areas. First thing, you have to build a secure, reliable network, right, for those communications. Like in that prior example, it's not just for motorists but also 24/7 communications with the people who actually service those roads as well. So our networking portfolio is expansive. It covers every possible way you can access your network from wired to wireless, to RF mesh, to LoRa. We continue to expand on that.

But when we build that, we also need to look at how do we help our customers manage these devices because you're deploying these devices, not just in the tens, but in the hundreds and sometimes even in the thousands. So the management tools that we do is -- what we're extending, especially when IT manages this, we've extended DNA center into this environment. But when OT looks for it, we actually have to focus it more in terms of what is more useful to the operational user.

The third area, as I talked about is, edge computing. More and more use cases are where you want to be able to collect the data and compute it at the edge. So building a platform that enables us to do that, plus a software layer on top of that, that allows you to deploy your microservices, whether you're building that microservice, whether it's coming from us. In fact, when we talk about Sentryo, that is a microservice that's sitting on our hardware today. We want to be able to enable you and third-party ISVs to deploy those applications on our edge computing portfolio.

And the fourth one is around data control and exchange. It's interesting when I have the conversation with customers. Most of them will say is, look, I have a heterogeneous environment. I have equipment for multiple providers. It could be from an ABB. It could be from a Schneider. It could be from a Rockwell Automation. It could be from a Siemens. How can I collect all this information that, by the way, even when they use the same protocol, they have a little bit of a different way of interpretation of that Modbus protocol.

So collecting, being able to cleanse it, so we're correlating that information and not just sending the raw data, getting into a couple of data models that actually can be consumed by your application and then giving our customers the ability to define policy so that they get to decide or you get to decide who should actually get access to that information. And that could be anything from the machine builders that you have on your -- in your environment. It could be sending it to your private cloud or it could be sending it to multiple private -- public clouds as well. And Vikas is going to come up and talk about that.

And the fifth one is around security, having that comprehensive security architecture to be able to secure these environments. These are the 3 things that we're going to talk about today. There's a lot more in our portfolio, so definitely go see us in the World of Solutions. So like we did on main stage, I'm going to ask Stefan to come up and talk about what happened in these industrial environments, because the things that he mentioned on main stage are something that I see with customers. It doesn't have to be manufacturing. It could be in utilities. It can be in other industries as well.



## QUESTIONS AND ANSWERS

**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So Stefan, maybe you could start by a little bit of -- kind of a -- for the audience, an introduction into Airbus.

**Stefan Thomé;Airbus Helicopters;Executive Vice President, Engineering**

Okay. So good morning, everyone. So in Airbus, we are manufacturing 1 of 2 helicopters that are produced every year in the world. Almost half of these are going to military proceeds. So that means that we have to protect our IP, our trade secrets and also to be compliant with the regulations and confidentiality. But I am head of product security. So I deal with security for safety. And we have also to ensure the resilience of our manufacturing facilities in order to deliver our customer on time and so that our product meet the highest [rating] standards. One day of lost production in Airbus Helicopter, they have a huge financial impact. And even worse, if a hacker could modify the configuration of our industrial assets, it can put our customers and workers at risk, and that's not acceptable. So for security, we have to be -- to take care of availability and integrity.

**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So I know when I was talking to you, Stefan, you said that, look, we've got to keep operations running 24/7. So even there -- if there was an attack in the network, it's the production manager that decides whether you're going to stop the line or not because he's measured on what's the output in the factory. So you want to make sure you have production uptime. You want to make sure you have the highest quality, and you want to make sure that people and assets are safe as well. So you talked to us about how you went about doing the security assessment, and maybe you can share that with the audience, too.

**Stefan Thomé;Airbus Helicopters;Executive Vice President, Engineering**

So we started to welcome on our ICS, or Industrial Control System. The ICS network is a network controlling our CNCs, our sensors and all the asset we use to manufacture and assemble the many parts of a helicopter. So we decided to run an assessment and to have a big picture of all the assets which are involved in such assembly lines. And during the many years, the past years, we deployed a lot of new industrial equipment, a lot of new network equipment and connectivity, and the business was more focusing on the operational objective than on the security architecture. So the first thing we decided to do is to perform a full risk assessment on the IoT domain.

**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

And so what did -- I mean, you were telling me there was a few surprises in there but some of the things you already knew. So what was the outcome of that assessment?

**Stefan Thomé;Airbus Helicopters;Executive Vice President, Engineering**

So yes. First, we did this risk assessment with one of our cybersecurity partner, Orange Cyberdefense, and we used Cyberdefense to detect and to discover the assets. Cyber Vision helped us a lot because this is a passive technology, listening to your network and automatically discovering the asset and mapping their communication flows.

What this assessment bring us is 3 main things. First, now we have a list of vulnerability on our industrial assets. And we have now a plan to fix it where possible. We have also an extensive list of the machine with cellular interfaces for remote maintenance, and we can better control this access. And third, we have a list of machine, which were not fully or adequately configured, and we have a plan for optimization.



As you may know, ICS network are often flat. And we wanted to work on segmentation to avoid the (inaudible) come through the gate to where the full ICS network and goes -- even goes to the IT domain. So for this, we will -- we will have segmentation of our industrial control system. And this inventory of assets was a key first step to go further.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Now I know we were talking about the fact and you said this is not just about technology, right? This is about 2 organizations that need to come together and most often than not, they don't talk to each other. So maybe you can help the audience understand, when we talk about IT and OT, what are the challenges in bringing these 2 teams together?

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**Stefan Thomé;Airbus Helicopters;Executive Vice President, Engineering**

So that's the point where we are -- in fact, we are merging IT and OT. And this is more and more true in the coming months. So the fact that the integration of Cyber Vision with IC will help us a lot because we are preparing the move to Industry 4.0. That means integration of IT and OT world. And the fact that Cyber Vision is now natively built in Cisco switches will speed up and help us, of course...

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

That's right.

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**Stefan Thomé;Airbus Helicopters;Executive Vice President, Engineering**

Will help us, sorry, for the deployment of this project. What we have to look at now is how to integrate this in our security operation center. And the plan is to streamline the investigation and the remediation of both IT and OT incidents.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

And I think we can help you with that as well with the tools and capabilities that we bring. So Stefan, thank you so much. Really appreciate you being here.

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**Stefan Thomé;Airbus Helicopters;Executive Vice President, Engineering**

Thank you, Liz.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

All right. So I'm going to cover a few things that Stefan talked about as well in terms of -- the first thing that you start with is really around detecting that vulnerabilities. Then it's about -- and then patching it. I mean some of the things that they discovered in their environment was some of their machines were not even tuned and they were able to actually optimize for those machines. The second one was really around controlling access to machines based on what is the end users' job at the end of the day. And the third one is around most of these environments, not just in the environment that Stefan talked about, these are flat layer 2 networks.

So how do you bring in things like segmentation to be able to prevent these threats from spreading and control access? Now when you put these all together, that's why we believe that you can't just have the individual piece parts. You need all of this to be able to build out the security architecture, but you have to start with visibility, because if you don't know what's in your environment, you're absolutely flying blind. By the way, these lights are super-hot out here.



So first thing is you start -- I'm trying to -- every time I move towards it, the light shines even brighter. So you start with identifying the asset. Once you know what's in there, then you can actually group these assets. You can define policy, and the policy is actually then enforced by the network. Once you've established all of that, then you look at how do I monitor my conditions, and especially in these environments. It will be malicious in terms of changes. It could also just be plain human error.

And this is why when we bought Cyber Vision through our Sentyro acquisition, we needed to be able to plug that lack of that visibility into our portfolio. And couple of things when we look at what Cyber Vision does, and Dan is going to come up and talk about it in some level of detail as well. But a few things to understand in terms of -- while it's available as an appliance today, we also learned that when you think about industrial networks, so they're not just contained in one place. They may be across the country in multiple remote sites. So spanning traffic tends to be expensive and probably an issue with performance as well.

So we've embedded the Cyber Vision sensor on our industrial switches, routers and our access points as well. So when you look at what Cyber Vision does, and you'll see when Dan comes up, the granularity of the information that you see from make, model, the firmware versions, the level of depth that it gives you in terms of which devices are talking to which other devices, what vulnerabilities that you have. And these are available in dashboards. So if the plant manager, for example, is looking at it. You can customize these reports down to just that role if they don't want to see anything else. Cyber Vision is integrated with ICE. If many of you use ICE, you can think about how do you bring ICE the same set of tools into these environments. But then it's fed with the details of all the industrial traffic and the devices based on what Cyber Vision feeds it.

And if you use Stealthwatch today for anomaly detection, most often than not, if you look at this, most of these devices that sit within a cell or a zone have the same IP address. But with the information that we're feeding from Cyber Vision into Stealthwatch, you can now get the identity of the device, allowing you to do a much more granular anomaly detection for that matter. So in a sense, you have the tools. You have the capability. You have the knowledge. The OT team is needed, but the OT teams know what the context is, bringing those together. In fact, let me actually ask Dan to come up on stage and help us out with the demo.

So Dan, welcome.

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**Daniel Behrens; Technical Marketing Engineer; IOT Connectivity**

Thanks, Liz. I appreciate it.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So Dan, maybe you can help set context on what we're going to see because you're shifting from a manufacturing plant to something else.

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**Daniel Behrens; Technical Marketing Engineer; IOT Connectivity**

Absolutely. Yes. So we thought we'd choose a demo or an environment that most of us are probably familiar with, the baggage claim at the airport. And so this is where, if you're not familiar with the baggage claim, everyone patiently waits for their luggage to come out. But essentially, this is actually a controls environment. We have things like drives and actuators that are moving the luggage throughout the environment. We actually have PLCs that are controlling the facility. We also have things like HMIs, or human machine interfaces, that are giving visibility to the operators, so they know exactly what's going on inside the system. And sometimes, the baggage doesn't always go out cleanly. But the important thing to keep in mind here is this is a controls environment, right? This is going to operate exactly like manufacturing, utilities, oil and gas. They've got the same types of devices inside of it.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So if my luggage is lost or it hasn't come out for an hour, I can actually blame it on the environment?

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**Daniel Behrens;Technical Marketing Engineer;IOT Connectivity**

You could try. They'll probably blame it on the weather, though, right? So what we thought we'd talk about is these environments are very large, flat networks. Those unmanaged switches, everything is allowed to talk to everything. And so what can happen is, in these environments, we don't have understanding of what devices are connected. We don't have a lot of visibility into these slides, a lot of visibility into the ability to actually segment these networks and keep people -- keep these devices from being able to communicate to each other.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Can we switch back to our slides. Perfect. Thank you.

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**Daniel Behrens;Technical Marketing Engineer;IOT Connectivity**

There you go. And so unfortunately, this means that if an infection comes into the environment, it spreads like wildfire. So for example, a contractor needs to come in and have the ability to actually troubleshoot or diagnose issues, they can connect to the network and see everything, which is not something we really want them to do. Now they're coming from multiple customers. So they may already have an infection on their laptop. In that case, it spreads across the environment, taking out the Windows-based platforms because they're running the malware that affects them. But also, the additional traffic can actually cause the industrial devices themselves to be knocked off the network, stopping control and breaking the process.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Okay. So are we going to see a demo on this one and see how it looks, or?

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**Daniel Behrens;Technical Marketing Engineer;IOT Connectivity**

We are. But let's talk about the after, if you will, once Cisco gets involved, right? So first of all, once we've got the industrial ethernet or IE3400, as Liz mentioned, and it's connecting over there, this has the ability to actually run the Cyber Vision sensor directly in it. Now this is passively taking in deep packet -- or taking in packets to do deep packet inspection. And it allows us to get understanding of what devices are out there. Our traditional IT methodologies for understanding or identifying devices don't typically work against these devices. We're not doing things like DHCP requests or web request. And many times, if you try and talk to these in a way they weren't meant to be talked to, you'll knock them offline and actually stop the process.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Great.

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**Daniel Behrens;Technical Marketing Engineer;IOT Connectivity**

So Cyber Vision tool has the ability to actually identify and discover these assets. It then takes that information and can share it with other tools, like the identity services engine or DNA Center to define policies and actually start segmenting in these environments.

Now in the first use case, we talked about malware spreading across the environment. What if it's just something like 2 PLCs that are trying to talk to each other from baggage claim 1 to baggage claim 2? We have the ability to actually enforce that and stop that directly in the industrial switches themselves, allowing us to block that communication from occurring.



Now, again, in the first scenario, we're talking about malware. What if it's just -- someone's actually modified the program inside the PLC itself. The program gets changed because Cyber Vision is doing that deep application visibility. It actually understands the devices that are out there, who's talking to who, but more importantly, what are they saying to each other? What are the variables actually being communicated between these devices? If that changes, we have the ability to actually react.

Now in most cases, it will probably be an alert. But things like self-launch in the identity services engine have the ability to actually take them off network or at least restrict their access in a safe way. So with all that, why don't we dive into a real demo?

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

It's amazing that what you're talking about, just at a baggage claim, it's a similar environment to what we see on a factory floor.

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**Daniel Behrens; Technical Marketing Engineer; IOT Connectivity**

Exactly. Right. Yes. It's same types of devices, it's just how different programs are communicating.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Right. So what are we seeing up here now?

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**Daniel Behrens; Technical Marketing Engineer; IOT Connectivity**

So what we're looking at here is the main map, if you will, inside the Cyber Vision center. This gives us a quick view of what devices are on the network, who's talking to who. In this case, we've got our baggage claims 1, 2 and 3. And so we actually have the ability to dive in and look at the specifics of any one of these devices. So for example, if we come into the details of the Siemens plc, as you mentioned, we can see things like the firmware version, the model, the make, the serial number, the program that's running inside the PLC itself, really all the defining information about this device.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So do I need to know like detailed protocol information and saying, hey, it's Modbus, PROFINET, OPC-UA?

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**Daniel Behrens; Technical Marketing Engineer; IOT Connectivity**

Absolutely not. So one of the amazing benefits of this tool is this tagging capability. So as the traffic is being analyzed and identified, the Cyber Vision center will actually apply tags automatically to the traffic to kind of up level the information. So I don't need to understand PROFINET or S7 or even Siemens devices, to recognize that there's been a program upload done to this device in my environment.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Great.



**Daniel Behrens;Technical Marketing Engineer;IOT Connectivity**

The other piece is the ability to quickly identify vulnerabilities inside the environment, right? We understand what's out there and what vulnerabilities have been released. So we can quickly see this in a dashboard. Now if for whatever reason, either it's a web vulnerability that I don't need to actually react to or just something that I can't get to that, in this current environment, I can't stop production, I do have the ability to quickly acknowledge that alarm. But this will all be available inside the reports that you talked about earlier.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Now I know you gave us like a baggage claim environment. But when you look at it, let's say in a factory environment, there's thousands of these devices. Can I drill down? Or do I have to see everything?

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**Daniel Behrens;Technical Marketing Engineer;IOT Connectivity**

Absolutely right. So the tool itself actually has what's known as presets. Essentially, it's a set of filters. So as we talked -- as you talked about, the fact that IT and operations and security may be using this tool, you can define the views that are important to you and it's only look at the information that's available to you.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Great.

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**Daniel Behrens;Technical Marketing Engineer;IOT Connectivity**

And the last thing we'll talk about is the ability to actually take a look at or understand the C packet or the actual communications that are taking place because you can create a baseline, right? So once I've discovered all my assets, I've discovered who's talking to who, I can say this is what normal looks like. And if something changes, I have the ability to quickly see that.

So in this case, not only did new devices come online and new communications start to occur, but more importantly, because of that deep packet inspection and the fact I understand the protocols, we're able to see that there was actually a new tag or variable being communicated between the devices, and they can alert me and let me know, was it an accident, did someone actually do some maintenance or is there something malicious going on.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So it's interesting. Everything that Dan is talking about is what we've done in the IT world for the last 10 years. I mean, think about baselining. That's something that we do in the IT world every day. Now we're bringing it into the operational environment.

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**Daniel Behrens;Technical Marketing Engineer;IOT Connectivity**

Exactly.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Awesome. Well, thank you so much, Dan. Appreciate it. So Dan and I are going to step off. We're going to actually hand it off to Vikas to come and talk to you about Edge Intelligence.

**Vikas Butaney; Vice President; Product Management**

Thanks, Liz. All right. So in addition to the security announcements this week, we're super excited about the work we have been doing around Edge Intelligence. And in this area, let's kind of get started. You've heard from us, all businesses are looking to create applications, whether it's to create analytics or to create better business decisions. Gartner tells us that over 75% of the data will be created in the areas we call the IoT edge. It could be a roadway. It could be an intersection. It could be a robot. It could be a machine, and to connect and get data from these environments requires a lot of manual efforts today.

Customers like you tell us that these are the 4 kind of challenges that you are facing when these things have to be connected. You're connecting devices in remote locations that might be in far-flung parts of your enterprise. You might be dealing with heterogeneous environments. The customer from Boeing -- from Airbus talked about how they might have different controller types and machine types. You have different protocols in your environment. You need to send the data to multiple applications on-prem, in a hybrid environment or in a public cloud. And you, our customers, are being forced to become system integrators to tie all of these things together.

We, at Cisco, believe that there's a better answer, and that's what we are launching today. We are launching a new capability we call Edge Intelligence. And it simply allows you to map and flow the data from the IoT edge to wherever your applications reside. The team has built it into 4 simple functions. We help you extract the data. We help you transform the data, provide some governance policies, especially here in Europe, where you're concerned about your data privacy and the data ownership rules. And then you want to be able to deliver the data or -- wherever the application might reside in a public cloud environment or on a private environment.

What we have built is a set of 3 integration capabilities for you, such that this process can be simpler and easier. So on the connector side that we have started with MQTT, OPC-UA and capabilities that allow you to connect a Modbus RTU into this environment. We're giving you developer friendly tools such that you can use training with DevNet and other capabilities and using environments like Visual Studio and with JavaScript to build logic to manage and control the flow of this data. You can define the governance policy on where and how the data is delivered. And we have also pre-integrated with some public cloud providers and some application environments, such that you have control over that data.

Let's put this to use in a real customer environment right here in Europe. We've been working with a customer in Austria, and they're very focused on building high-tensile steel capabilities. They have been doing a digital transformation project for multiple years, and they were struggling with how to extract the data and deliver the data to machine OEM builder 1 and 2 and keep some of their own analytics data to themselves. So the work that we've been doing with them makes this a little bit easier. So let me kind of just animate the process. On the left-hand side, you have different machine types. It could be an ABB machine or a CNC machine from a company. And what you're really trying to monitor are things like temperature, vibrations and these kind of variables and their setting.

What the team has built and what we have built for you is just an easy connector by which you can extract the data from the machine, using a protocol like OPC-UA. The challenge you have is that each of these companies encode the data in a different way. So you can create the mapping of what field or what register means what and then you will be able to create some transformation. Rather than collecting data every 10 milliseconds, maybe you want to aggregate or average the data over the last 2 minutes or 5 minutes. You are in control. That's just one variable. The challenge in these environments is you have many machine types. You are monitoring many different machine variables, and you need an easy way to manage way to kind of control the flow of this data. We provide you the ability to say that this machine data should only go to the machine OEM. The number of fasteners or number of units I produce is my proprietary company data, and I don't want to share that.

So again, in this environment where you're concerned about privacy and control of your environment, we will provide you the tool sets, such that you can manage the flow and control of this information. This is the power of Edge Intelligence that we are launching today for you. And this is not applicable just to the manufacturing settings. Whether you have a water SCADA system you're trying to monitor. You're monitoring a roadway intersection environment. You have remote assets that you're trying to control. The same capability when deployed on a range of IoT gateways, allows you to expand the use cases of where you need to manage the data.

And what we have been doing is kind of building an architecture to make this all happen. So let me try to tie together what Liz talked about and the Edge Intelligence pieces. In your environments, you have machines. You have sensors. You have devices that you're connecting based on the

industry you are in. It really starts with step #1, getting these devices connected with a reliable, secure network that you can get on boarded. Ethernet, Wi-Fi, serial, whatever the technology of choice, you will have choices from Cisco. On top of these products, you have this layer of what we call virtualization where you can host and run container technologies. What's happening in the data center is now extensible all the way to the IoT edge. So that's step 1.

Step 2 is really about getting visibility to the communication and the assets that are in your environment. Cybersecurity is our tool set to kind of allow you to do that and build a security policy and capabilities on top of it. Once you have secured the asset, now you can move to the data conversation. In this environment, we are going to give you the capability to, again, ingest, transform, manage and govern the data. And we'll provide you the right management and automation capabilities for you to be able to do this. Scott talked about DNA Center. Liz talked about DNA Center.

So if you're an IT person and you want to use that tool set, perfectly fine. Go and deploy those capabilities. Or if you're an operational persona and you need something purpose-built for you, that's where other tool sets, like the field Network Director, the Industrial Network Director, Cyber Vision, comes in to give you the right tool set. So we're super excited about where we are going with Cisco IoT. What I'd encourage you to do is just attend the sessions. Attend -- go to the World of Solutions. It's right on the other side of the hall, where all of the products, the use cases and technologies brought to life for your benefit.

Again, thank you for being here, and thanks. Sorry, we're running a couple of minutes late. Talk to you soon.

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## PRESENTATION

**Nish Parkar;Cybersecurity Communications Manager**

So we're here at Cisco Live Barcelona 2020, and we're going to keep talking IoT. And to help us do that. I'm here with Bryan Tantzen.

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**Nish Parkar;Cybersecurity Communications Manager**

So Bryan, how are you?

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**Bryan Tantzen;Senior Director, Industry Solutions**

I'm doing great. Pleasure to be here.

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## QUESTIONS AND ANSWERS

**Nish Parkar;Cybersecurity Communications Manager**

Yes. Thank you for joining us. So you're the Director of Engineering for IoT. So tell us a bit about yourself and your role here at Cisco.

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**Bryan Tantzen;Senior Director, Industry Solutions**

So pleasure again to join you. So I'm leading building engineered solutions for our customers to help them deploy IoT. And as you go -- use IOT, you're going into a lot of very mission-critical environments, extending the network into the -- into new spaces and the noncarpeted space. So these solutions are helping to address the challenges of making that a reality.



**Nish Parkar;Cybersecurity Communications Manager**

Got it. And I often hear the term Cisco validated design. So it sounds like that's what you're talking about. But what is the Cisco validated design for people who aren't familiar with them?

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**Bryan Tantzen;Senior Director, Industry Solutions**

So the Cisco validated designs for IoT are really focused on enabling the customer use case. So if you're modernizing a smart grid or making a factory smart with intelligent automation, then it's very critical that it work into this environment and you have a lot of new challenges that you're not going to run into in the traditional IT space. So the validated designs enable that customer use case, taking the IoT products, other Cisco broader portfolio of products and then most and critical, our top OT application partners for those customers, and then validating the entire architecture to give customers a blueprint to follow to accelerate their deployment success.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. So I heard a little bit in the keynote this morning about bringing together kind of OT -- IT and OT. So what did we announce specifically around the Cisco validated design this week at the show?

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**Bryan Tantzen;Senior Director, Industry Solutions**

So we're announcing 4 new validated designs. And one is for very important -- for grid security. As utilities are modernizing the security grid, they have to protect it. So we're taking the announcement that Liz Centoni made this morning around cybersecurity and Cyber Vision, and we've built a reference validated architecture to deploy that into substations for utilities.

Second is we're taking -- for IT professionals that are managing the noncarpeted space for their extended enterprises, we're making intent-based networking a reality. So we have a new validated design for SD-WAN in the extended enterprise space to reduce WAN costs for those enterprises.

Third is we are -- we have a new [CBD] for oil and gas companies and process environments for deploying industrial wireless for worker safety and new efficiency and new outputs.

And then finally, we have a new design that we are applying into -- for the manufacturing space, where we're, again, taking Cyber Vision into one of our largest verticals to enable, not just intelligent automation but secure automation and protect the factory environments, which is one of the most attacked industrial -- environments that's out there from a cybersecurity point of view.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. And you mentioned noncarpeted, right? So for people who don't know IT so well, what do you mean when you say noncarpeted?

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**Bryan Tantzen;Senior Director, Industry Solutions**

So with noncarpeted, we're basically taking our purpose-built products and extending them into what could be a roadside cabinet that could be 120 degrees Fahrenheit. It could be connecting to a robot or a PLC in a factory. It could be connecting to a smart city for security cameras. And all of these environments have new protocols and very unique performance requirements. So again, with our validated designs, we're taking the customer use case as the starting point. We're combining all the technology bits and pieces together with our market-leading portfolio, plus the OT applications and then doing the engineering to make them work to accelerate customer time to value. And so if you're deploying something, you can deploy it with confidence. You know it's going to work as you're modernizing your factory, you're modernizing your utility grid or whatever your use case happens to be.

**Nish Parkar;Cybersecurity Communications Manager**

And one last question. So what benefits do the validated designs obviously bring to customers? You said, obviously, with confidence, that it provides that. Is there anything else that customers get from these validated designs that stay there?

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**Bryan Tantzen;Senior Director, Industry Solutions**

Yes. Yes, absolutely. So IoT -- why I'm very passionate about IOT is it's one of the most business relevant, the things that Cisco is offering to our customers. But with these new challenges, it's becoming very hard for customers to scale and simplify. And so with the pre-engineered solutions, it's really driving that simplicity. It's ensuring it's secure. It's reducing risk. So you can take our market leading portfolio, which is now #1 market share for industrial networking and industrial security and then deploy it into these OT environments with confidence, with validated designs that have been purpose-built to incorporate IT and OT best practices and also bring together the OT and the IT teams in the enterprise as Liz talked about this morning.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. It sounds like you're the hero to our customers. You're making their lives a lot easier.

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**Bryan Tantzen;Senior Director, Industry Solutions**

That's the goal.

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**Nish Parkar;Cybersecurity Communications Manager**

Thank you so much for joining me. We're going to head out now to Zane. Zane, who have you got for us over there?

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## PRESENTATION

**Zane Powell;Associate Sales Representative**

Nish, looks like I'm sticking with IoT. It's all about IoT today. I'm still in the in IoT area. But I have someone different to interview. I'm with Fabien Maisl. Fabien, can you introduce yourself for everyone watching at home?

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**Fabien Maisl;Product Marketing Manager, IoT Security**

Yes. So my name is Fabien Maisl. I'm a Product Marketing Manager for IoT Security at Cisco.

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## QUESTIONS AND ANSWERS

**Zane Powell;Associate Sales Representative**

Fantastic, Fabien. Now we've had some huge, huge announcements from Liz Centoni today about Cyber Vision. What is Cyber Vision?

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**Fabien Maisl;Product Marketing Manager, IoT Security**

So Cyber Vision is a software product that Cisco acquired from Sentyo last summer, and we are launching it here at Cisco Live! this week in Barcelona. It's a product designed to help our customers gain visibility into their industrial networks so they can protect them against cyber attacks. It's because industrial operations have become a target for hackers. And at the same time, our customers want to deploy industrial IoT devices and then to benefit from Industry product technologies. But that basically makes OT, IT and cloud deeper integrated. And so with Cyber Vision, we are helping our -- the IT teams to work with the operations teams to secure those industrial networks so they can benefit from these technologies without putting their production at risk.

**Zane Powell;Associate Sales Representative**

Fantastic, Fabien. So really bringing OT and IoT together. So really important question. Why is security so important for IoT at the moment then?

**Fabien Maisl;Product Marketing Manager, IoT Security**

Well, because all industrial organizations want to connect their machines, want to connect their processes to be more agile, to be more productive, to introduce new types of services, new types of products. But as you do this, you basically open your networks to threats. And so you need to put in some kind of security to make sure you can do those new things without disrupting production.

**Zane Powell;Associate Sales Representative**

Fantastic. And I think that's what Cisco is trying to do. They're building security into absolutely everything. So look, if someone who is at Cisco Live! who want to find out more about Cyber Vision and IoT, where can they go to do that?

**Fabien Maisl;Product Marketing Manager, IoT Security**

So I'm actually doing a session in like half an hour in Hall 8. I'm doing another presentation today in the World of Solutions theater here in Hall 6. There will be another presentation tomorrow at 11:45, I think, here on the industry booth, and we also have a customer session tomorrow, Wednesday, in -- at the gateway, where we have the Head of Security from Airbus Helicopter, who will discuss OT security with Orange Cyberdefense. Then we have a more technical session on Thursday about how to gain visibility to segment your network. So that's in the Hall 8, in the technical sessions.

**Zane Powell;Associate Sales Representative**

Fantastic, Fabien. So look you have them here. If you want to find out more about IoT, get yourself to Fabien's sessions. I'm sure they're going to be absolutely fantastic. Now just to finish off, Fabien, what are you most looking forward to this week at Cisco Live?

**Fabien Maisl;Product Marketing Manager, IoT Security**

Well, we are looking at talking with more industrial companies that are now all in the lookout for security solutions for the industrial networks because this is the hottest topic right now. And so we really want to convince them that Cyber Vision is the tool specific to their needs to secure OT security and also to extend their IT security operations through that industrial domain.

**Zane Powell;Associate Sales Representative**

Fantastic. I can't wait either. Now we're going to throw it back to Nish, who's waiting for us in the studio. Nish, what do you have for us?



**Nish Parkar;Cybersecurity Communications Manager**

Thanks, Zane. Yes. It's just me in the studio at the moment. It's really interesting to hear more about IoT and help us to wrap up that session. So thank you so much both of you for joining us and sharing some of those insights.

So we're going to head into a quick break soon. And then we're going to learn a little bit more about CSR. That's one of my favorite topics here at Cisco. Cisco recently launched our 2019 CSR report. So I just wanted to share some of those highlights.

So for Cisco CSR, it's all about doing what's good for the world, and that is automatically what's good for business, right? So leading people, inspired by jobs, for building careers and some of the things that we're focusing on. And I just want to say a big, big shout out to [KU] at this stage. So KU leads our CSR asset here at Cisco. And her and her team, they've been here for 35 years here with Cisco, has had a huge impact on some of our CSR work.

So I was reading the report actually just yesterday. So 2.15 million students have been through the networking academy. I just think that's incredible. 2.15 million students around the world. We've had 469 million people positively impacted, and I know as a company at Cisco here, we're out to reach 1 billion people by 2025. And then we've actually had a 48% drop in greenhouse gas emissions. So I think that's incredible compared to our 2007 baseline. So a huge impact from the environment, on our people and in our communities as well. So we're going to head into a couple of videos here just around IoT to wrap up the session. Stay right there. We'll be right back to talk more about CSR.

(presentation)

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**PRESENTATION**

**Nish Parkar;Cybersecurity Communications Manager**

We're here at Cisco Live Barcelona 2020, and we're going into one of my favorite topics, one my favorite segments, and that is corporate, social responsibility and CSR. So Steve, I know you're out on the show floor. You've got to be very exciting. This is the thing that has really stood out to me as my #1 thing I need to make sure I do before I head out for the week. But, Steve, what have you got for us over there?

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**Steve Multer;Chief Storytelling Officer**

All right. So Nish, we are in the park, which is really a bridge, between what's happening over in the hub, where you are right now, and what's happening in the World of Solutions directly back here behind us. But this rain wall is such an incredible experience, and it's a great way to be a part of that CSR storytelling. You mentioned it a moment ago, it's really one of my favorite aspects of the show. I love to talk about who Cisco is at our heart, at our soul. We can talk technology all day long, but I love to talk about what the company is all about. I've got [Gida] over here with me. How are you today, Gida ?

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**Unidentified Company Representative**

I'm great. Thank you, Steve.

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## QUESTIONS AND ANSWERS

### Steve Multer;Chief Storytelling Officer

You are, great. So you're Field Marketing Manager for Cisco Corporate Affairs, and I want to ask you, first of all, give us a general overview of what's going on here at this rainfall installation? What are our attendees taking part in? Including our own Zane Powell, who's back in there right now?

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### Unidentified Company Representative

All right, sounds good. Well, Steve, in 2016, Cisco announced its goal, to positively impact 1 billion people. And this rainwall installation sort of our way of showcasing that, because what we're trying to do is that we're trying to get people to actually see how we are impacting, at this point in time, 3 lives per second, positively. If you go inside this rainwall installation, you will see that we've got some really -- they've got some really great, brilliant stories that you can see right by the smart umbrellas, #IoT, you can just walk in, open up the umbrella, look at these really great stories, there are like 5 of them. I would definitely implore that you go in and see these.

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### Steve Multer;Chief Storytelling Officer

It's such a great experience. And we always talk about how important storytelling is to getting people to understand what we are all about, what we are at our core and what we want to get accomplished. Is there a connection to what's happening here up at the front in the rainwall, and then what people are doing back in the rest of the park?

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### Unidentified Company Representative

Well, to be honest, there is a lot that's happening in terms of CSR across in this region. But if you look at this rainwall installation, you can see that we've got some really great stories around the nonprofits that we're supporting. And then if you go into the Impact Theater, you will actually be able to hear from some of our impact stories -- you will actually be able to hear from our impact speakers about what they've done, how their nonprofits, along with Cisco, have been impacting lives. At this point in time, we've already impacted 469 million lives, that's about 47% of our goal that we've already achieved.

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### Steve Multer;Chief Storytelling Officer

You're ahead of schedule.

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### Unidentified Company Representative

We are ahead of our schedule. And we're doing it -- various things. I mean, we've got the nonprofit that we're supporting, we've got our signature program, that is just going to Cisco Networking Academy, where, indeed, we have like 2 million students each year. We are training them for career courses, we're making them job-ready. They're getting skills that they actually say that we've been able to establish and use in our jobs as soon as we got into the job market.

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### Steve Multer;Chief Storytelling Officer

I'm so glad that you brought up Cisco Networking Academy, something that is really very near and dear to my heart. 10.8 million people so far coming through the program, 180 different countries. We really are changing lives, and we're exposing people to new things that they never thought they would imagine. Are some of them ending up supporting and what's happening with the nonprofits that we have here in the park area?



**Unidentified Company Representative**

Well, definitely. I mean, the dream team here is actually helping everyone across the Cisco Live, because all of those networks that you're seeing here in Cisco -- at Cisco Live has actually been established by our dream team. And not just that, I mean, Cisco Networking Academy, in general, is impacting everyone, whether that's nonprofit or the -- or people who are underserved. We are sort of looking at multiple gaps that we are filling, and we've got the gender gap that we're filling, 28% of our students are female. We are filling the talent gaps. We've got like 85% of our CCNA students say that we are job-ready, we have learned some really important skills. And we are also filling in the technology gap, because we've generated 10.9 million students in -- I mean, we've touched 10.9 million lives, and we've made them job-ready, career-ready.

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**Steve Multer;Chief Storytelling Officer**

It's such a fantastic story. [Gida], thank you for taking time with us today. I know it's a busy day. You've been packed up here with the rainwall all day long. I hope we'll get a chance to talk together throughout the rest of the show.

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**Unidentified Company Representative**

Definitely. It sounds great. And it's lovely to have a chance to meet you, Steve.

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**Steve Multer;Chief Storytelling Officer**

The more the merrier. Nish, we're going to go back up to you in the studio. Thanks.

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**Nish Parkar;Cybersecurity Communications Manager**

Thanks, Steve. That always was, by heart, hearing about all the different things that we're working on here at Cisco. There's so much that people can do actually here at the park, and the rainwall is one of them. Also build the bike, and then we're giving those bikes to people that need them the most at the end of the week as well. So make sure you do head down to the park, take lots of pictures. Use #CLEUR. But right now, we're heading into an exciting innovation showcase from yesterday around creating a strategy and culture for global innovation here at Cisco, something, I think, we do very well that I'm very excited to learn more about.

So enjoy the show, and see you soon, guys.

(presentation)

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## PRESENTATION

**Guillaume de Saint Marc;Sr. Director, Chief Technology and Architecture Office**

Thank you for the -- thank you very much for this great intro, very detailed, very comprehensive. So my name is Guillaume de Saint Marc. I'm very happy to be here. Thanks for being here. I work for our CTO of Engineering, Roland Acra, I'm based in Paris. Most of my team, the team I run is in Europe, across Europe. Personally based in Paris, where we have our Paris Innovation and Research Lab.

So as you probably picked up from the intro video, we're not just a typical CTO organization, and we go really a bit beyond. And our #1 motivation in life is innovation. So we do not innovate behind closed doors just between -- amongst ourselves. We really love to innovate, first of all, with the entire Cisco organization, that's part of our mandate, and beyond Cisco, of course, we're partners and customers in the industry ecosystem. So in the next 30 minutes, I'll do my best to share with you as much of what you've heard in the rapid introduction, and hopefully, that will be really

interesting for you, guys. I'll be ready after this session, if you want to talk about anything in particular, sharing best practices in innovation is really part of the culture, and is important. It's not like we know better. So we want to hear from you as well.

So to speak more about our -- so who we are? Primarily engineers, no surprise; software developers; some business folks as well. And we also are a bit more [rotated] than the rest of Cisco to what we call the senior tech talent. So our highest grade of engineers at Cisco, principal engineers, distinguished engineers and Cisco fellows, we have a number of them in our organization. What is it that we do? Well, we actually work on a number of technologies ahead of the curve, incubate these technologies and, when successful, obviously, help to deliver and scale them, just Cisco and our partners. Yes, so all the cool stuff, all the best work, the trendy stuff, we're looking at. But honestly, this is of little value to us until we really prove how useful it is. So we do not only follow the trends of the best world, AI, blockchain, all these cool stuff, but we actually work hard to see what's in it for us and for our community and for our industry in there.

And so why is it that we do what we do? So between us, we call these the big mountains. So what we are really passionate about is really trying to resolve very difficult problem, big problem, big challenges, not just for Cisco, but honestly, for the industry. And as you'll see a bit later in my talk, sometimes beyond the industry, for the greater good of people, society or the planet. We're not short of big challenge to solve.

Okay. So a few thoughts about the team, 166 people. It fluctuates, obviously. So small team at the scale of Cisco, but quite a big team for a CTO organization. 22 nationalities, we are across 14 countries. So the message there is we prize diversity, right? Different people, different culture. I'm very humble with regard -- when it comes to innovation. But if you're looking for the perfect innovation process, which will succeed no matter what, well, good luck. But what we do have is best practices. Really good things, which maximizes the chance actually to have an innovation outcome. And diversity is really one of the great advice I can share, and I'm sure you guys know about this. Having a diverse set of people from different horizons, culture with different backgrounds, looking at a problem 360-degree and try to cracking the problem together have much more chances to succeed than working just with the uniformity of people in a corner.

So a good way to summarize what we're trying to do in this team is we do discover what's possible, right? We do that for Cisco, we do that for, again, our customers and partners. And if you look at this innovation will, which is the way Cisco actually do faster innovation and push the envelope, is a fairly classic build-by-partner, invest-for-develop. We're not the only corporate with this kind of approach. So our team is really involved with the build and the codevelop, right? That's our day job, that's our bread and butter. Build ahead of the curve, transition work with our business groups to bring this to market, and codevelop with partners, customers, start-up and academia. But we're actually involved also on the other side of innovation, and it's frequent that we are also advising on a buy, partner or invest situation.

Let me pick up on an example. Sorry, I'm slightly biased to French example, given I'm based in Paris. Back in 2016, we engaged, as part of our start-up coacceleration program, with a start-up called Sentryo in Lyon, which is a nice city. And leveraging a lot of the DevNet APIs, we proved how Sentryo could be a great addition on top of our product. They do fiber security, IoT solutions for industrial environments. And from there, 3 years down the road, last summer, we acquired Sentryo, just as an example, how we actually engage with all of these activities. So the 3 things, which I'd like to really spend time on today in are the following: how we foster innovation, talk a bit more about tech and R&D. I won't be able to talk about everything, but I'll pick up on what we're doing around 5G and wireless technologies these days, and also how we run a number of initiatives for the greater good.

So as I alluded to already, there is not one silver bullet for innovation. There is not like one thing, which will give (technical difficulty) really what we do is that we do many things in parallel. And that's the best way to really foster an innovation culture across the company. Intellectual property, you wouldn't be surprised to know that in our team, we have a high number of patents per capita, but also the open source strategy, very important. As you know, Cisco has always been heavily encouraging and relying on standards, and beyond standards these days, a lot of the -- what used to be driven only by standards organization is also now driven by open source organization. So our entire Linux foundation strategy, work we are doing around technologies like (inaudible), internally known as VPP, or even more recently around [HIT], and these are good examples of how we are really fostering innovation and sharing with the rest of the industry the open source, which is a very powerful way to do it.

Innovation challenge and hackathons, we do a lot of these, again, a lot of time in partnership with the DevNet folks. Internal innovation challenge, so we have across Cisco an innovation called Innovate Everywhere, which is really open to absolutely 100% of our employees. We've engaged, in the past 4 years, more than 80% of them, more than -- close to 4,000 ideas submitted, 27 funded with strong sponsors and real funding to actually





develop them. So it's one way to do it, but it's very important as a function in the company of the state of Cisco to really give any employee and opportunity to come with, hey, I have a great idea, can you help me develop it? Or if it's not such a great idea, it doesn't matter. Can you help me learn how I can come more often with this kind of ideas.

Core innovation programs, that's obviously what we run in many places. We engage. We have a number of innovation -- core innovation centers across the world, I'll pick up on a couple of examples what we are doing with folks at Port of Rotterdam a bit later, and in the techno-conservation domain. But there is really a ton of these examples. Recently in U.K., we've run a great program called Rural 5G, where we've worked with a constellation of partners, academia, government agencies. So we do a lot of these. And start-up co-acceleration, I mentioned already.

So last but not least, I want to talk about our relationship with academia. So at Cisco, we do not have a large internal research lab, right? We're not like some of our peers in the industry, like Microsoft or IBM. But obviously, research is important to us. And so the way we do that is by collaborating directly with a number of universities across the world. And one example I want to -- so in the U.S., in Asia, in Europe, for instance, in London, we do a lot with UCL. Let me pick up on what we are doing in France with Ecole Polytechnique. So you see here that was last week, Roland Acra, second to the left, our new CTO, my boss, signing a new academic MoU engagement with this great university for the next 5 years. It's been already 5 years of super successful collaboration, and we are going for 5 more years. And more than 13 internships in the lab in Paris, and sometimes, also in San Jose in California, 15 publication.

We've organized 4 international symposiums, and we have a number of doctorates, PhDs, coming out -- jointly coming out of our labs. So we're extremely proud of this kind of collaboration, which goes well beyond just handing money to a university, wishing them good luck and asking just for a plaque somewhere in a room, right? So this is a great way for us to source the talent of tomorrow, make sure that whether they continue their career at Cisco or whether they join one of our partners or customers, it doesn't matter to us. We really need the best people to understand how we need to shape the digital technologies of tomorrow. And this is exactly what we do with this kind of engagement.

Okay. So let's talk a bit more about technology. So this is not exhaustive. This is a quick overview of a number of domains and a number of programs we are running. You will not be surprised to see that IT connectivity at the scale of trillions of endpoints connected [to scale], that's what it is, it's still a very vibrant domain for us. And we're not done with -- although some of these protocols have been invented more than 30 years ago, we are not done with what we can do with IT, IPv6, Segment 14, and all these great things. Cognitive networking is super important. It goes well beyond just virtualized network function. This is how we can fully embrace the beautiful model of [pool] elasticity and horizontal scalability of a cloud-native networking, and we are very active here. I mentioned VPP, (inaudible) open source projects, and more.

Cybersecurity, of course, cybersecurity scheme, it's really an arm race at the moment, including a lot of artificial intelligence getting involved into cybersecurity. One of the topics I'm mentioning here is we're working on quantum resistance encryption, and this is a bit of a cool topic. This is a bit of a Back to the Future. So in anticipation of potential future attacks from quantum computing, when they will be here and really ready to kick in to get -- to get cracking with these things. So we are already working on how we can make sure that today's communication will not be hacked in the future.

A lot of AI, of course, for network and infrastructure, ranging from better telemetry, how can we supervise complex IT systems, but also with some application to, for instance, IoT and video analytics, I have a small example at the very back -- end of this presentation.

And so what I'm going to focus a bit more on is the green parts. Tremendous amount of digitization going on across the industry. And one topic of interest is to discuss, I hope, for today is, how does digital transformation actually impact your wireless and mobility strategy? So as you have guessed already or as you know, obviously, the answer is a lot. So if you haven't had the opportunity to download this great report from colleagues in the Enterprise Business Group, fiscal 2020 global networking trend report, it's full of really good numbers, just a few here. They're all basically pointing at the tremendous amount of need for more connectivity. Connectivity is the foundation of any digitization, which is happening across all the different vertical of the industry, from health care to transportation, port, manufacturing, and we need more and more connectivity. And obviously, wireless connectivity is the more pervasive and the more useful to rapid digitization. So what is at stake really here? You might have seen a slide like this one, good marketing slides.

And really, the fundamental approach of Cisco on this topic is the following: we love all radio technologies. Wi-Fi 6? Great. 5G? Great. And guess what? We need both of them. This is a marketing slide. Without getting into much more technical slides, the laws of physics really shows how all these radios and frequencies are complementary. And tomorrow, if you want to address all the use case and all the need of the industry with optimal coverage and price point, you actually need to combine these guys, right? Not one or the other. So this is great. Let's just combine them. Is it easy? What is the level of integration we need? Well, the answer to this question is, we need these really well integrated, because what we don't want is have to deploy as we do today, let's say, Wi-Fi 6 enterprise network, fully private network, and in parallel, embrace the 5G network, which would be completely different, siloed, managed with different tools, something which would require a lot of import and investment for the enterprise. And this is important, both for enterprise and service provider. 5G is known as the first cellular technology transition for the first time, which is going to be B2B first, not B2C. It's not the consumer driving 5G, it's the business, right?

So this is great. At Cisco, we love that. And we -- our mission now is to say, "okay, so how can we make sure that enterprise can leverage 5G with the help of service providers, our partners and our technology in a very seamless way?" And this is important because, as you know, most of the frequencies worldwide are being allocated to service providers. So to answer this question, we've been looking at a number of technologies. So let me point out a few very quickly. Private 5G, yes, for sure. We need to be able these private -- need to be able these end-to-end and fully automate and supervise this private 5G networks, and we need to be able to do this really alongside the existing networks in the enterprise. And there is a very nice property of 5G technology, which is called CUPS, I don't want to bore you with too many details, CUPS means, our control user plane separation. Which is beautiful because we can leave the control plane with the service provider, and we can integrate the user of the data plane in the middle of the enterprise fabric in a super secure way, alongside Wi-Fi and all the other networks and technologies.

So that's for private 5G. We're actively working on this. [SPPI] exposure, very important. Once we have deployed this private 5G network, the last thing we want, as I said, is run this as a silo. So we need APIs from the cellular network to be able to hook up with all your regular -- usual supervision and management tools, and the idea here is, this is a product called UDC, Unified Domain Center, which will nicely integrate with tools like DNA Center, to make sure that it's just yet another [tag] inside your Wi-Fi network to actually completely configure or control a 5G network and make sure that you can immediately drag and drop and make all your policy users, quality-of-service demand flow from one to the other.

OpenRoaming Federation. Who noticed about OpenRoaming at this event? Show of hands? Yes, cool. Isn't it cool? So what is at stake with open roaming is very simple. If we want to be able to bring technologies like Wi-Fi and 5G cellular in a seamless way, and make sure that enterprise can seamlessly take advantage of both technologies at the same time, we need to make them easy to use. Everyone noticed that cellular roaming is something which the industry cracked decades ago. Wi-Fi roaming sometimes is still painful. (inaudible), oh, I'm not on the right network, this and that. So with open roaming, we've created an open identity federation with a number of partners in the industry to make sure that, when you show up at events like this, simply by registering, we actually connect your enterprise identity, your normal enterprise e-mail identity with an identity, which makes sense for the wireless infrastructure here. And you're on immediately.

No need to confirm anything. Maybe you just have to accept a certificate on your phone, and even we're working with a number of folks, including Samsung, to make sure that this is even completely transparent in the future. So keep this in mind, OpenRoaming Federation is going to be a critical technology, because what's behind just better roaming with Wi-Fi is elevate any identity and credential management beyond the specificities of a given access network. It's nice to have the same card, but it prevents you from being known and just on how, we need to manage you in an enterprise network, it's an issue, and vice versa, right? So we're trying to elevate with open roaming.

Mobile SD1 is another really interesting technology. You can go to Hall 5, where we have a space, it's a bit of a private suite type of area, and I recommend that you go and look at the demo, if you're interested. Very simple, and let me show you this [by round]. So I'm sorry, it's getting a bit complicated, you know how these different technologies combine. But as we digitize the world across a number of verticals, everyone understands that the traditional enterprise perimeter is rapidly changing. And a lot of the enterprise assets are now completely mobile, whether it's workforce or important equipment, transportation, stuff which needs to remain connected to the enterprise perimeter.

And so looking at how we can bring a number of agent technologies to the endpoint, so that you have the optimal choice of, I want this traffic to go directly to the Internet; I want this traffic to go back to my SD1, and actually my corporate network; and I want this traffic, because it's actually some fairly business-critical services, before you hit a number of cloud-based SaaS services, goes through my secure Internet gateway, like Umbrella. This is exactly the kind of possibility we are working on. Make sure that it doesn't matter whether you're, tomorrow, physically into your enterprise



perimeter or just in a mobility situation, we want to bring you the optimal connectivity with the best level of security. It's part of what the industry called SaaS type of solution these days, which are emerging. Secure access technologies at the Edge.

And the last one is hiCN. So hiCN I mentioned technology, we open source, real quick, it's a new transport protocol. Fully compatible with IT, obviously, but it's a new way to actually take advantage of such architecture. And the beauty of hiCN, is that it's multiaccess. So if you have the possibility to leverage simultaneously both 5G Wi-Fi or multiple cellular networks and multiple Wi-Fi networks at the same time, hiCN will do that. hiCN will also propagate content in an optimal way, and make -- because it's anchorless in design, it actually handles all the application level use case of mobility extremely well. We're working on currently on showing how this is going to potentially impact and improve Webex, and we're very excited about this. So keep in mind that technologies like hiCN will be very important for this type of architecture.

Okay. So if you want to know more about this, it's really, really cool work. My friend and colleague, [Sam Samuel], is running a deep dive session on this, I think, it's tomorrow, and this will be in Hall 8. So look for Sam, Sam Samuel. He's the expert on all this.

And you see here how we -- I mentioned the importance of simplified operations, not only you want to handle this from your usual DNA Center, for instance, dashboard. But in terms of checking the system service assurance, this is an example of how we are integrating all the technologies I mentioned, into a simple admin dashboard, so very cool.

Anyway. So that brings into what might become available very soon as a new wave of Cisco offers. Okay, so I have a few more minutes. Just to conclude on something, which is really important for us, the fact that it's not just about the technology, it's not just about the business. We actually do innovate for the greater good. And as I mentioned, for the greater good of people, society or the planet. So you might think, well, Guillaume, this is nice, but this is really just corporate social responsibility, we understand you guys are doing this. But it's not a big deal. And in reality, what's really important to understand is, CSR for us is not something we run aside. CSR is truly at the heart of Cisco's day-to-day activity. And most of the projects that we actually undertake, we do that with this sort of conscious engineering mindsets. Very simple. The Internet is great.

Can we use the Internet for doing more than just buying more products online or watching more advertising? Can we solve bigger, more interesting problems? So the answer, hopefully, is yes. And when we hire -- when we try to hire new talents, I can guarantee that it's very important to have stronger [skills] here. So a quick example, I'll go really quick. As you might have seen, Cisco and Port of Rotterdam are now doing a lot of co-innovation together with a number of partners, IBM, ESRI, and the guys at Port of Rotterdam have a lot of industry transition and digitization challenge to resolve in order to make sure that tomorrow, they run the port in an optimized way, including saving resources, transitioning out of the traditional oil and petrol activities they had, and stuff like this. It's super interesting. It's probably as complex as anything can get, it's like a smart city on steroids, and we are working with these guys, not only on bringing a CTO network, but how we can have all these different networks mesh, actually working together, exactly as I've explained before.

So all the 5G, Wi-Fi, wireless and mobility technologies, which I've explained before, we're actually experimenting with some of them with -- in this great living lab. And again, remember, open roaming, this is becoming the full identity federation in the future. Think about the amount of tenants, the amount of companies who need to operate in such a small -- the port is big, but it's, but at the end, a small geography, complexity is enormous. And so there is a ton happening here.

One last example, techno-conservation. So under the leadership of David Ward at Cisco, we have done a ton of work in the techno-conservation, especially over the past 18 months, where we've accelerated. We've incubated a full architecture. It's kind of an IoT architecture on steroids, and the goal for us was not just to create business for Cisco, but really to actually help accelerate the entire community. I mentioned Ecole Polytechnique, so we've used our academic relationships to organize the full symposium with the community of folks really trying to help with the conservation of species. We've done a ton of work with partners, like Entity Dimension Data in South Africa, where you can see how we've been developing some advanced video analytics, AI, to literally secure digital perimeter and prevent culture to get into the perimeter of the reserve.

But this goes really beyond just a couple of experiments and pilots. We're extending to different countries, different species. We're looking also at how we can protect the ocean. Anyway, so just to give you a feel for where we are going with this kind of things. And again, you have no idea how this is important that what we do makes sense when we're talking with these young talents from different universities, and want to attract them to work with us.



So that's it. We discover what's possible. And hopefully, the wider Cisco and you guys will make the most of it. I hope the talk was interesting. Keep in mind, Sam is going to give you a deep dive on the 5G stuff. So check that. We also -- I'll be also, tomorrow on the other theater, around 2:00 p.m., telling you more about what we do with connected cars and autonomous vehicles. I didn't mention that today, there was only 30 minutes, there will be more tomorrow for that.

Thank you very much, and have a great Cisco Live!

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## QUESTIONS AND ANSWERS

### **David dela Cruz;Commercial Account Manager**

What a great innovation talk on the innovation program that Cisco is driving and how Cisco builds a global -- but uses its global team to innovate together with customers and partners for the greater good of the society, projects like CSR projects and that sort of thing, as well as how we -- or what topics are on the longer-term road map. There's incubation things like 5G and Wi-Fi 6. And I'm joined now here in studio with Guillaume Sauvage de Saint Marc, very long name Guillaume, I hope you have a nickname, because otherwise...

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### **Guillaume de Saint Marc;Sr. Director, Chief Technology and Architecture Office**

I do have one, GSM. That's what my colleagues call me.

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### **David dela Cruz;Commercial Account Manager**

GSM. I'm okay call you that? Perfect.

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### **Guillaume de Saint Marc;Sr. Director, Chief Technology and Architecture Office**

Absolutely.

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### **David dela Cruz;Commercial Account Manager**

Perfect. So we've got the man himself, GSM. Fantastic talk. Lots of interesting points. And I guess, you're here to give us a little bit more context for both the viewers at home as well as the people that may have already seen your talk.

So I guess the first question, you talked a lot in your talk about fostering innovation, about how that's one of the key pillars that Cisco is driving. And how can Cisco customers, I suppose, get involved with that pillar?

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### **Guillaume de Saint Marc;Sr. Director, Chief Technology and Architecture Office**

Well that's -- thanks, David, that's a great question. First of all, thanks for having me. Super exciting to be here with so many of our partners and customers in Barcelona at Cisco Live. So yes. So I mentioned in the talk, really, that there is not like a single silver bullet in terms of innovation to engage. So we have a range of things really for customers to engage with us. It can start on one side simply with our DevNet team, they organized a lot of hackathon, so it's a way to get hands on and Sam here with our (inaudible), our solutions are more and more programmable, which is really an important trend. And Susie Wee and team are leading this effort. This is really a good way to get started, and understand how a given customer can actually leverage our portfolio of solution and sort of program their own business case, and make it like theirs.

Other ways to engage, we have a number of -- like representing a number of countries, 14 countries, we have innovation centers all across the globe, and we love to run this co-innovation and design thinking sessions with our customers. So we are usually quite active in the innovation ecosystem across these different countries, so we often meet in one of these events. And from there, we see how much we can help each other. And this can lead to a really very significant collaboration. I mentioned in the talk what we're doing with (inaudible), for instance, so this is very -- and this is just one amongst others. This is really a significant co-innovation effort, where we really try to work beyond actually just the current portfolio we have and try to incubate, in collaboration with customers and partners, usually, the next big thing for our industry. And this is really co-innovation, right? So we get into even sometimes tricky questions like how do we share IP for co-advancing? But this is what we are ready to do to push the envelope with the -- with our customers.

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**David dela Cruz;Commercial Account Manager**

Absolutely. It's definitely one of my favorite things I think about Cisco is that how we really work shoulder-to-shoulder [to develop solutions to overcome big problems like these]. Obviously, you're a Frenchman, quite the name and the accent gave it away...

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**Guillaume de Saint Marc;Sr. Director, Chief Technology and Architecture Office**

You can tell?

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**David dela Cruz;Commercial Account Manager**

I can tell. You mentioned in your talk about a partnership with the Ecole Polytechnique. I'd love to hear a little bit more about that? And how that's bolstering, I suppose, the innovation agenda in France?

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**Guillaume de Saint Marc;Sr. Director, Chief Technology and Architecture Office**

Yes. And thanks for asking. So this is -- so in general, collaboration with universities and academia is really important to Cisco for a very simple reason, is that at Cisco, we do not have internally a large research lab, such as some of our peers in the industry have. And so for us, collaboration with the universities is not just an option, it's a necessity. So we have research friends and we have a number of programs, which we're doing with these guys. But really, for us, it goes well beyond just throwing money above the fence and waiting for having a Cisco part on the world. It's really a really close collaboration, so Ecole Polytechnique is a fantastic example. We're working really closely with these guys. We have the share for Internet technologies and engineering with them.

And concretely, we host more -- well, we've hosted more than 13 interns from Ecole Polytechnique over the past 4 years. We have 4 PhDs graduating together with Ecole Polytechnique and based in our lab in Paris. And what's really important for us is with such deep academic partnership is, this is not only a way for us to source, maybe our next talent at Cisco, but if these guys doesn't stay with us, but they go and work with our customers and partners, it's equally important for us, right? So we want to make sure that across the globe, in a country like France, we can train and we can make sure that the millennial generation of next talents is really at the best of IT and digital technology for the future.

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**David dela Cruz;Commercial Account Manager**

Wow. I mean, it sounds like an amazing program. I wish my university had, had something like that. And sort of changing gears a little bit, I mean, you can't go anywhere at Cisco Live or anywhere really in the industry without hearing cybersecurity, it's such a massive topic, but I think almost every organization and individual on the planet. Now you mentioned, I think, in your talk, a term, I'm going to have look this up because I've never heard it before. Quantum resistance encryption, that sounds like it's very much on the bleeding edge? So explain that for us, please?

**Guillaume de Saint Marc;Sr. Director, Chief Technology and Architecture Office**

Yes. So I'll share a few words about this. So this is a good example of one of the innovation we incubated ahead of the curve. So you mentioned cybersecurity, it's a massive trend across the industry for a very simple reason: there is no digitization without security, right? And this is -- there is a lot of security copycat [stake] for us, for our customers, for the great [geography] of the industry and honestly, society. So one particular domain, (inaudible) know (inaudible) well, is quantum computing. So you might have heard about this one. It's much more speculative, filling the lab -- it's not really unleashed yet in the industry, but it will come sooner or later. And these quantum computing have the property that they might be able to break existing encryptions.

And so what we're doing is that we are really working to kind of prevent sort of Back to the Future attack. So we don't want that if quantum computers are available in 3 year, 5 year, 10 years, that it can come back and attack some traffic, which would have been recorded today. It's a bit of a Sci-Fi-type of scenario, but it's actually taken very seriously by some of our customers, no surprise, governments, Ministry of Defense, but also large banks, and customers who really care about the privacy of their customer. And so we've developed solutions, which are not based on quantum technology, but actually will be able to resist to the what we call the quantum supremacy when quantum computing will be available and might present some risks in the future.

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**David dela Cruz;Commercial Account Manager**

Yes, absolutely. It sounds like it's going to be a very interesting topic to watch over the next few years. Now I know you, both you personally, as well as at Cisco overall, were very passionate, I suppose that about making sure that our innovations leave a lasting impact for, things outside of our immediate circle, I suppose. I saw in your presentation, you talked a little about the saving the rhino project that we've been working on, what -- how did we get involved in that? And what was -- or what are the next sort of things to come?

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**Guillaume de Saint Marc;Sr. Director, Chief Technology and Architecture Office**

Yes. And this is really important. So as are both phase, can we do something better with the Internet than just watching more advertising or buy more online. And there are really some big problems which we can solve with Internet technology. So conservation, species conservation is one of them. We've done a lot, as you know, with the rhino project and with friends at NTT Dimension Data in South Africa. And we are going to do more. It's not just us. What we're really trying to do. And by the way, with the help of (technical difficulty) great symposium, where we actually hosted the community really active on that, including scientist, (inaudible), startups, large corporates, active on the topic of conservation.

And what we are trying to do is really not just bring our own solution, but enable a wider blueprint for the industry of how we can accelerate solving these problems. And we did a lot in Africa. We've started to do a lot of things in India and other geographies. We had a hackathon back in November there, which was very successful. And it's not just on earth, it's also oceans, and so we're looking into more programs like this in the coming months. So stay tuned, there is more coming.

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**David dela Cruz;Commercial Account Manager**

Absolutely. I'll definitely have to follow that, because I think we've got this amazing technology, and we're going to try and use that power to help solve those big problems around.

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**Guillaume de Saint Marc;Sr. Director, Chief Technology and Architecture Office**

And this is a really important way for also, as a large corporation, to attract millennial talent. Because these guys for a really good reason, they don't want just to have a job. They want to know what they are doing actually serves a purpose. And for us, take for good and conscious engineering is really important. And it's actually completely coincides with business. It's not like we are doing this as a side activity. Actually, our day job is also about this.



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**David dela Cruz;Commercial Account Manager**

Absolutely. And just one final question then for you, I've heard that you might have a new boss in town now. So could you give us -- have you heard any insights about how Roland might be shaping the forwards direction of the CTO?

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**Guillaume de Saint Marc;Sr. Director, Chief Technology and Architecture Office**

Yes. So Roland has been in charge (inaudible). He used to be our Head of Data Center division, a business group at Cisco, and he's now our CTO, my boss. So it's been only a couple of months, but Roland is ramping up rapidly, and you might have seen already. So I mentioned the Ecole Polytechnique partnership. So he was with us last week in France signing this deal, an MoU, for the next 5 years. So there is a lot that we have in flight, that Roland is going to help us accelerate and lend with the different business group at Cisco and with the wider industry.

And watch out for a new agenda on our side, because I know that Roland is really interested, for instance, in how we can get even further in simplifying and making our product easier to use and even more robust. So there is some future work which we can help here. And this is just an example. A lot will happen also on the 5G front and the heterogeneous network technologies. And I know Roland will -- does care about this, and I know he's going to push us even more than before on this front.

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**David dela Cruz;Commercial Account Manager**

Absolutely. Awesome. Well, thank you so much for your insights. I really appreciate you coming down to the studio and giving us a little bit of your time, packing us into your schedule, I know it's tough. So -- and continuing on I suppose one of the topics that you mentioned, which is innovation and co-creation, we'll be heading now into the innovation theater, where Susie Wee is going to be presenting about DevNet, her area of expertise. So stick with us, and we'll be right there in a moment.

(Break)

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**David dela Cruz;Commercial Account Manager**

Wow. What an amazing action-packed morning we've had so far today, with so many sessions on our compute and IoT this morning, a little bit about CSR just before the lunch break. We're now going to be kicking off the afternoon, shifting gear a little bit and looking at DevNet as a topic. DevNet, in case you don't know, is a community with resources and training programs for developers who want to develop software in conjunction with Cisco or to work with Cisco products. We're going to be heading over to the innovation showcase, which is on the other hall with Susie Wee, a little -- in about 15 minutes or so. She leads our DevNet efforts worldwide. The atmosphere here, though, on the show floor and the hub where we are, is incredible. So we're going to head out to the DevNet zone, where I believe Steve is ready for us with some interesting guests. So we're going to talk about DevNet.

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

David, you hit on exactly the right word. This is community. That's what DevNet's all about. DevNet is always one of my favorite things here at Cisco Live. As you can see, if you look around, with all the mobs and the crowds that are around here, DevNet is never a dead area. Everybody is always hopping because it's accessible to everybody. It's why -- it's one of my favorite parts of the show. And by the way, if you just turn around, I can wave that you. For those of you who are watching at home, we always like you to know how close things are. The TV studios directly back over here. We're straight across the over on the overhead now. That's even better. I don't even know what I am waving to, but I think it's right up there. If I'm pointing -- okay, great. I'm pointing to the right place.





All right. So we're going to see what's new and exciting. We always try to spend a lot of time in DevNet if we can. And I've got Casey Tong and [Thomas Tyler] back over here with me to give me the grand tour. You guys are both user experience engineers with Cisco DevNet. Thank you for pushing everybody out of your area so you could walk us around and kind of give us the inside scoop. Really glad to have you guys with us for the show.

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**Casey Tong;UX Designer**

I'm good. Thank you so much for having us.

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**Steve Multer;Chief Storytelling Officer**

Absolutely.

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**Unidentified Company Representative**

Yes. Thank you very much for having us.

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## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

This is fun stuff, right? All right. So we have been talking about DevNet design thinking for some time. There are going to be a lot of people watching on the broadcast. You don't know exactly what Design Thinking is. Give us kind of the introduction to Design Thinking and then talk us through the chaos that's on the wall behind you here.

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**Casey Tong;UX Designer**

Sure. Thank you. So Cisco Design Thinking is really a methodology to solve our problems. So instead of jumping into a solution right away, we always want to take a step back and to figure out what is the user's need, what are the things that are really happening out there. Capture the fact before we define the problem. So once we've defined the right problem, we can start ideating and be creative in software solutions. And afterwards, we can always go back to the user and say, like, "Hey, is this really fitting your need?" So that is something that can help creating more business outcome. And for here, today, we're actually trying to educate and advocate design thinking to our developer communities.

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**Steve Multer;Chief Storytelling Officer**

So Thomas, let me ask. Let's pull back to big picture. How is this a benefit to our user community?

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**Unidentified Company Representative**

Awesome. Yes, it's a great benefit to our user community especially when you think about programmability. When you're really starting to think about these problems that we're trying to solve, these complex problems, how do you think about it from the actual user's perspective? Who's actually going to be using this? So that's where design thinking comes in. Really, how do we actually critically solve problems in a fast and iterative way and really innovate using Cisco's technology.

**Steve Multer;Chief Storytelling Officer**

Cool. Yes, go ahead.

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**Casey Tong;UX Designer**

So. I'll give you an example, right? So for instance, in this area in here that you talked about, we have been capturing our user's feedback on what are the top 3 automation capabilities. And they can start voting into it, and in which, they also define the task that they're actually really looking into. In that way, it can funnel back to them, then and say, like, "Hey, there might be some missing gap or maybe there are some areas that we're already doing awesome and how we can ideate and create more valuable content to our users."

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**Steve Multer;Chief Storytelling Officer**

If somebody asked me how to get a chance to get started with Design Thinking, what are the first steps? How do they get involved with that? And how do they let everybody know, yes, we want to bring this on board?

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**Unidentified Company Representative**

Awesome. Yes. So there's multiple ways. Especially if they're here at Cisco Live, please come by the booth. During the week from 10:00 a.m., and then also at 3:00 p.m., we're actually doing some design thinking workshops, really hands-on on what is design thinking, going through all the different methodologies. But if you're watching online, go into [developer.cisco.com/designthinking](https://developer.cisco.com/designthinking), gives you all you need to know about what is design thinking. Shows you what events we're kind of coming to.

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**Steve Multer;Chief Storytelling Officer**

Yes. For those people who aren't here at the show, where do they go? So they're going to go to the website. But in terms of coming in here, what kind of a story are we going to be telling them?

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**Casey Tong;UX Designer**

So this is what we're going to go through. We'll be walking through them some of the methodology of design thinking. We'll be guiding them through this exercise, have them to get a quick sense of what it is like. And if -- for those of you at home, if you're working with your partner team, partner account team and if you're working with a partner account manager and account manager, I highly encourage you to reach out to them, to talk about, "Hey, how can we start a co-creation and design thinking workshop with DevNet?"

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**Steve Multer;Chief Storytelling Officer**

Guys, such a great job over here. This is really exciting stuff. So Casey, Thomas, thank you. For those people that were here at the show, come down and talk to these amazing folks. They're brilliant. They're going to be able to walk you through it, show you exactly what the benefit is to you. Thank you for taking time to talk with me.

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**Casey Tong;UX Designer**

Thank you so much.

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**Unidentified Company Representative**

Thank you very much

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**Steve Multer;Chief Storytelling Officer**

And making me feel welcome.

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**Casey Tong;UX Designer**

Yes, of course. And that's design think.

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**Steve Multer;Chief Storytelling Officer**

I've got a much better sense of design thinking.

All right. Keep doing a good job. I'm going to run away from you now, all right?

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**Casey Tong;UX Designer**

Thank you.

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**Steve Multer;Chief Storytelling Officer**

You follow me, Steve. Come on over because I want you to get a flash all around the booth. There is so much happening here at DevNet. We're going to keep checking in with you all week long on the DevNet front.

What I want to do next is talk about certifications. Huge part of every Cisco Live that we do all day long at the show, we are offering infrastructure and application development-focused technical sessions. So what do you want to do? API overview. You want a deep dive. You want a hands-on exercise. You want to learn the best practices or the case studies. We're out here learning about all kinds of things, right? Network programmability, development using containers, blockchain, DevOps, IoT. DevNet is what it's all about, and this is where the certification comes in. It's open to everyone. By the way, to start developing, using Cisco technology, you can get hands-on with everything, every element of the DevNet program. And again, get that face-to-face support from the developer teams.

All right. So once you're ready to go, and you're like, "Yes, I want to get certified." You know who you're going to talk to? You're going to talk to Ryan Rose. He's back over here. Ryan, thanks for talking with me. You're a technical program manager on the DevNet developer experience team, right?

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**Ryan Rose;Technical Program Manager;Cisco DevNet**

That's right. Yes.

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**Steve Multer;Chief Storytelling Officer**

All right. So first thing I want to know is we're always at DevNet. We spend loads of time here at DevNet. We always try to bring the cameras in as much as possible and tell the story. What is new and different for this particular event compared to some of the stuff we've talked about in the past?

**Ryan Rose;Technical Program Manager;Cisco DevNet**

Well, I'll tell you what, we are here talking about the DevNet certifications, and we announced that at Cisco Live U.S., but we are a month away from those exams launching on February 24.

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**Steve Multer;Chief Storytelling Officer**

February 24, baby.

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**Ryan Rose;Technical Program Manager;Cisco DevNet**

Exactly. I tell everybody that. It's very important. It's also my wife's birthday. So it's a date I can't forget.

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**Steve Multer;Chief Storytelling Officer**

Happy birthday in advance. In case Ryan forgets to say it later on, I'm going to take care of it now for you.

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**Ryan Rose;Technical Program Manager;Cisco DevNet**

Excellent. Thank you very much. But what we're talking about here is how people can get ready? We're a month out. So there's still that runway time that people can use to start getting ready. So we're talking about new DevNet tools that we've launched that are -- or are launching very soon for people to get ready. First, we have taken every single exam topic for all 10 of our DevNet exams, and we have listed that on [developer.cisco.com/certification](https://developer.cisco.com/certification). Then we found every learning lab that every registered DevNet member can take for free to have them start getting ready now for DevNet certification. So all available.

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**Steve Multer;Chief Storytelling Officer**

That is so cool, meaning that if you're here in Barcelona with us, you can walk in the door. You can get that early access to the information to now and kind of get the low-down because a lot of the people who are on the screen, they're not here at the show with us. They don't have an opportunity to walk in the door, but they still have access to that early information and they can begin the ramp up at this point.

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**Ryan Rose;Technical Program Manager;Cisco DevNet**

Exactly. In fact, every single person that has signed up at [developer.cisco.com](https://developer.cisco.com), all you have to do is go into our certification pages and you'll find all of those exam topics line-by-line. We're not keeping any secrets. We're letting you know what we're going to be testing you on. And what's great is, is we have found, like I said, every existing learning lab that will help you start getting ready. And if you're starting at 0, we have a plan for you. If you think Python is just a snake, we have a learning lab for you. So that's been great.

We're also talking about 2 other big things that actually Susie just got done announcing on stage. The first is our DevNet associate fundamentals training. This is -- if you like the way that DevNet does training, if you like our learning labs and our sandboxes, well, we have taken a lot of what we've learned and a lot of our skill sets. We've brought in our DevNet engineers and dev advocates and we have built an -- a new piece of training that will help you get ready for the DevNet associate certification that's launching February 21, 2020, so just a short time from now.

We are also talking about our new DevNet study groups because we know at DevNet, everyone learns together. And so we want to increase that interactivity between the 500,000 developers we have on DevNet. And so we are launching our new DevNet study group platform that will help people be able to engage, not only with the training that we have, but with one another. So that way, people can learn from each other together.

**Steve Multer;Chief Storytelling Officer**

Ryan, you are so all over this. I'm telling you 3 minutes, you have just gotten such an incredible overview of everything taking place within certification. The theater has been packed all day along. We're in a bit of a downtime for the moment, but that's going to start back up again. Ryan, thank you. Always love these opportunities to talk to see what you guys are doing, to see the kind of leadership that Susie is providing for you and for the rest of the team. It's always such a killer story here at DevNet.

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**Ryan Rose;Technical Program Manager;Cisco DevNet**

Hey, we're happy to be here. Thank you so much.

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**Steve Multer;Chief Storytelling Officer**

Thanks, man. It's been a pleasure to talk with you.

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**Ryan Rose;Technical Program Manager;Cisco DevNet**

Right on.

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**Steve Multer;Chief Storytelling Officer**

Stay with us. We'll hopefully be back to chat with you more. Now we're going to keep talking DevNet, DevNet, DevNet, DevNet. It is the DevNet show portion of the Cisco Live broadcast. But right now, I want to introduce you to a fantastic company. Natilik is guiding their clients on their journey so that they really understand their business initiatives and desired outcomes. So they're helping organizations all across the world today to deploy those key cross-architectural solutions that deliver real value out to their business. I want you to get to know this organization. Check out this VT. It's going to take about 2 minutes. We'll be right back here in the DevNet booth when it's done. Here we go.

(presentation)

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## PRESENTATION

**Nish Parkar;Cybersecurity Communications Manager**

Hey there. We're here in the DevNet Sandbox zone, and there's a lot of exciting things going around. I'm joined by Tom Davies. Tom, how are you doing?

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**Tom Davies;Senior Manager, DevNet**

Hello. I'm good. Thank you for having me.

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## QUESTIONS AND ANSWERS

**Nish Parkar;Cybersecurity Communications Manager**

So tell me a little bit about the DevNet Sandbox zone work here.

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**Tom Davies;Senior Manager, DevNet**

DevNet Sandbox is all about providing our partners and our customers with on-demand development environments for -- across all of Cisco's different portfolio. We've got about 80 Sandboxes people can choose from. We have 110,000 customers on platform, and they push about 10 million API calls through our different technologies and solutions we have in Sandbox every single year.

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**Nish Parkar;Cybersecurity Communications Manager**

Amazing. So what are some of the latest releases that people can use? Tell us a bit more about that.

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**Tom Davies;Senior Manager, DevNet**

We've got the latest IOx releases on platform that people can use and get into. We've got -- in the networking domain, we've got the latest DNA Sensor release, so 1.3.x, and we've got ACI in the data center realm for our delayed releases of [PANs] and customers can get their hands on to.

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**Nish Parkar;Cybersecurity Communications Manager**

Okay. And I keep hearing the word automation when it comes to this, right? So what does that mean in this -- why is it important? Why should people care?

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**Tom Davies;Senior Manager, DevNet**

Well, yes. We love automation on Sandboxes. We have our data [center], of course. And as part of that, we build automation into everything that we do. Our data center is 100% Cisco and they have APIs on top of them, and it allows us to completely roll out new changes to our network and our infrastructure en masse really quickly, and we know it's valid and secure through Cisco solutions. So everything we do is automated within our data centers.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. So I can see a lot of exciting things. Obviously, you've got the demos, the arcade. So people should definitely come down here, right?

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**Tom Davies;Senior Manager, DevNet**

They should, for sure. Yeah.

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**Nish Parkar;Cybersecurity Communications Manager**

And what else is there to do here in the zone? So tell us about -- a bit more about the arcade.

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**Tom Davies;Senior Manager, DevNet**

What they can do is if they visit any of our demos or if they visit any of our solutions, they can chat away, make sure they get -- or pick up a little demo token like this and they can cash it in. And if they then put it into -- get their highest score on Pac-Man, they'll pick up a Meraki goodie bag that they can pick up from the DevNet zone any time they come down.

**Nish Parkar;Cybersecurity Communications Manager**

Amazing. So definitely make sure you come down here. And then just in a couple of seconds time, we're going to head over Debbie. Debbie? Susie Wee is going to be doing an innovation showcase, talking about accelerating success through certifications of automation with the new network. I know a lot of -- there's still live attendees are here. They're very excited about certifications. Cisco's talked about lots of exciting new things in this space. Watch this talk and you can learn so much more about DevNet.

[Presentation]

## PRESENTATION

**Unidentified Company Representative**

Hello, and welcome to the innovation talks theater. My name is Toby, and I have the pleasure of being your host today. It's really good to see that everybody has made it here to Cisco Live 2020. There's a lot of us. But together, we're building the bridge to get you to where you want to be so you can make anything possible. Now at Cisco Live, you're going to learn new things, be inspired and create a path to endless opportunities. This week, we're having 14 innovation talks here in this theater, where we will, not only share with you our latest solutions, but also our innovations and best practices.

To keep pace with the complexity of rapidly transforming industries, infrastructure engineers and application developers must creatively evolve to continue to drive companies through digital transformation, ushering them to embrace a new way of doing networking. We are excited now to bring up on stage, a familiar face, but with a brand-new title and growing team, Susie Wee, SVP GM of the DevNet and CX ecosystem success team as well as several featured guests to share with you how the new network is accelerating digital transformation. Please help me give a warm welcome to Susie.

**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

Thank you. Good afternoon, everybody. So today, what I want to talk to you is about -- is how we can accelerate your success with the new network. And if we take a look, this all starts with what our customers are asking us for, some of you are customers, what you're asking our partners and Cisco for. They used to come to us for networking and connectivity, and of course, that still happens. But as people's businesses have grown and their networks have grown, then what happens is our customers started asking us different questions. They started to ask us, "Can you help me automate my infrastructure?" Automate, automate, automate.

And can you help me use my infrastructure to solve business problems? And that's an interesting concept. So the question is now what we have are a technology transformation underway that makes everybody want and need automation. And then there's a business transformation, and this really impacts the role of IT and infrastructure because the infrastructure can be used to solve and drive and grow business.

So if we take a look at what makes this possible, it's because the new network has entirely new capabilities. The way that we built networks, 5, 10, 15 years ago is different from what we can do today because now the network has new capabilities. It has intent-based networking, multi-domain networking. It's programmable. It has APIs, which supports DevOps, workflows and automation. And then application areas like IoT and Edge computing and cognitive collaboration come underway. And technologies like AI and machine learning and security start to get built into the



network and not done separately or on top. So when you put all of these together, you have an entirely new set of capabilities that you can use to literally drive new business opportunities and business growth for your company and to drive great customer experiences for your customers.

Now first, let's talk about a few technology trends, and we'll call these the ABC tech trends for 2020 and beyond. And as we take a look, the first one, a, is about using automation, plus AI, to empower people. We hear about automation a lot, and that makes some people worry. Like if you have a lot of automation and AI, does that mean that I don't have a job anymore? What does that mean? So let's break that down a little bit more.

Automation can mean a few different things. It can be making some operations autonomous to where you don't need a person, where things can be done by themselves. But also, automation and AI are very much about these next 2 categories. So one is that it's about assisting humans to do things at scale. So you could roll out configuration changes, and sometimes, we get errors and it's manual and it takes a long time. So automation can be used to help assist humans to accomplish these kinds of tasks. But in addition, automation and AI can be used to augment humans, to augment capabilities that you couldn't do manually. So for example, if you take a look at Cisco's threat intelligence portfolio with security, we can be actually measuring threats and collecting threats through Cisco's collectors across the world. So we know threats are going to happen and then protect your business from those threats before they get there because we've seen it in other parts of the world. So that's a place where you're augmenting a human capability by using automation and AI.

So the other thing is that we feel like automation will -- things more machine like, or dehumanize, but we work with customers like Starbucks and the way they view it is that companies will personalize customer experiences using AI because you'll know more about your customers. And AI will actually enhance human connections not take them away. So what this allows us to do is accelerate business with the infrastructure and do things like automation at scale, gain insights and intelligence from the infrastructure to drive business and customer experiences and drive business outcomes.

So next is b, let's take a look at next is driving business success with cross-layer innovation. So cross-layer innovation. Let's look at cross-layer technology innovation. Before, you could innovate by taking a look at each area and driving it forward as fast as it could. But in this next generation, a lot of the opportunities are basically looking across these layers, not looking at connectivity, data and devices separately, but how do you look at them together to create the experiences you need next.

Networking and security. Instead of looking at them separately, how do you innovate with networking and security together? Applications and infrastructure, typically done separately, but now the innovations come from driving infrastructure and application performance together and putting together business, technology and the user experience because the technology can enable new experiences that can drive entirely new business models and allow companies to compete.

And if we take a look at this, then what happens is, in the old model, the infrastructure, the IT teams would provide the infrastructure to provide the best connectivity and compute they could. The application teams would write the applications and hope they run on that infrastructure. And then the business teams would go off and develop their business models. But now that the infrastructure is programmable. Then what that does is allow modern applications and cloud applications to use that infrastructure and now that the network is programmable, you can do net DevOps type models as well and include the network in that cycle. And what that allows is entirely new experiences to come together to drive business. When you think about knowing if somebody walks into the store and connects into the infrastructure and giving them the best experience that you can.

And so let's take a look at this, where you take that programmable infrastructure and you start solving people's business problems, like how can I make my workers give a better experience to my customers? How can I connect up my stores and branches? And as an example, we have a customer here in Europe, Intesa Sanpaolo, a bank, a global bank that serves many customers, and they are a 500-year-old bank, and 500 years old is a long time. Now they have customers who like to walk to the bank every day to do their banking. And they need to respect and treat those customers.

And then they have new customers who are only going to do their banking through their mobile phones, and they need to help those customers as well. So as they put it together, what they did was they brought together their IT teams. They brought together their business head of bank branch offices. They brought together their customer support. They used APIs into our technology to then use the infrastructure to solve business problems and do this by having these teams work together. So that's a 500-year-old bank, modernizing their experience to best serve their customers.

The final trend I want to talk about is called community-led innovation for ecosystem success. So what we know about is if you think about community innovation, well, think about software. So we know in software, there's models of code sharing, using tools like GitHub and people collaborating to create software tools that can solve bigger problems together. Even the area of AI has become more democratized and it has community-led innovation because what you see across the ecosystem is a device company, can optimize AI algorithms in the chips. And meanwhile, data scientists can develop the greatest AI algorithms and then a developer who's writing a web page web application can use 3 lines of JavaScript to embed an awesome AI or people counting or object detection algorithm into their code. So you don't have to be a data scientist now to innovate in AI. So that's community-led innovation in AI. And the great thing is that networking, because now it's based on software, is going to this model as well.

And what we have is DevNet Automation Exchange, which is a tool that we have of curated software that's created by our community, our community of network experts, CCIEs, software developers, infrastructure developers, app developers doing software infrastructure. So they are coming together to create best practices and create code that actually solves the automation and the network use cases that people want. So it's one thing for Cisco to have a bunch of products that you can use and that are programmable. But now what's amazing is the innovation that will happen as we're writing code to solve different use cases on top of that.

And we're helping people walk, run and fly with networking and solve these use cases that help you get visibility and insights, go ahead and then push security policies and then evolve to be able to use the full DevOps workflow for optimization. And so as we build up this repository, that's really bringing innovation in a community way to networking.

And now what we want to do is -- that's great talking about the trends, but let's see it. And with DevNet, we have a see it, learn it, code it approach, and I would like to invite up Mandy Whaley and Ashutosh Malegaonkar to show some innovations that we have in making it real.

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**Mandy Whaley;Sr. Director of Developer Experience, Cisco DevNet**

Thank you.

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**Ashutosh Malegaonkar;Engineering Leader;Cisco DevNet Innovations**

Great. Thank you.

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**Mandy Whaley;Sr. Director of Developer Experience, Cisco DevNet**

All right. Thank you so much.

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**Ashutosh Malegaonkar;Engineering Leader;Cisco DevNet Innovations**

Hey, Mandy.

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**Mandy Whaley;Sr. Director of Developer Experience, Cisco DevNet**

So the new network helps us create new experiences and deliver new outcomes. And that's what Ashutosh and I want to share in this see it, learn it, code it section. I want to start with a fairly common situation, a major retailer has stores across Europe. Let's say, they're looking at bringing up a new store in Berlin. They also have their data center in Frankfurt. Now we're going to look at bringing up this new store, and we know that we want to do it in a repeatable way because we plan to do this very often, and we want to do it as efficient and quickly as possible. But there's some requirements that we need to cover. We need that connection from store to the data center. We want to be able to quickly deploy the local network at the store with a very standardized wireless configuration.

And then also at the store, we're going to have local applications running and we need to be able to configure the policy for those applications so they can use the data center services. And most importantly, we want to do this reliably, repeatedly and in a way that is scalable. We want every store to be configured in the exact same way. We want to send the minimum of people on-site to do that store standup. And we want to be able to get it up and connected and running as quickly as possible. And that leads us to automation.

So I'm happy to share with you this multi-domain automation demo. Let's take a look at the products that we're going to use to make this happen. To connect the store and the data center, we'll use Cisco SD-WAN. We're going to be using ACI to configure the policy for those applications that are running in the store, and we'll use DNA Center to help with the standardized configuration of the wireless network and also to help manage and deploy the local network. And then we'll be using UCS, 4 of the applications that are running in the data center and the store. And at the end, what we want is a connected store up and running all of the applications and servers that it needs.

So let's take a look at how we can do this. We're going to use a couple of additional tools. One of those is called Action Orchestrator, which is a workflow tool. We'll also be using GitHub for our single source of truth, and also WebEx Teams to communicate between the 2 teams that are involved in this standup. And most importantly, we're trying to eliminate copy and paste. No copy and paste from Excel. No copy and paste from Notepad. Don't copy and paste your configs around or your IP addresses. So we're working to move from that single source of truth and do everything in an automated fashion.

So let's switch over to the demo and take a look. All right. So this is Cisco Action Orchestrator. It's a work flow tool where you can build up steps that call APIs, that call custom Python scripts that you've written. They can call pretty much anything you can containerize and plug in. We're going to start this off running. All I need to give it is a name of our store. So I'm going to call it DevNet Zone Berlin since we're bringing up that Berlin store. I'm going to start it off running, and you'll see that it starts running, some of the steps turn green. Those have been completed. The blue one is the one that we're actively on. And we also have this WebEx Teams room connected to it. So as steps are completing, we're getting alerts in our WebEx team room. This teams can see how it's advancing and we're off getting back configuration information about how those different services are being configured.

So we're going to let that run and we're going to go back to the slides, and I want to talk about some of the APIs that we're actually calling in those workflow steps. So to -- we can go back to the slides. So to connect the SD-WAN connectivity, we're going to be using the V-managed APIs. We'll use an API call to get a list of devices, and then we're also using templates. Templates let you create a template that has specified ports, protocols, define it and then attach it to multiple devices. So we'll create a template for our store and we'll be able to assign that to all of the routers at our store.

For DNA center, we're going to use the enterprise SSID. This is one of the new intent APIs. And on this one, we pass in some configuration information. One of those would be our store name, which could be used as the SSID name, things like security level, the pass phrase we want to use, if we're enabling fast lane and different features like that. And this will start off the workflow to stand up this SSID. And then for ACI and UCS, for UCS, we're going to use the Python SDK, and we're creating VLANs and then also creating that new tenant in ACI using the ACI SDK as well. And then after those are created, we actually need to get the connectivity going by updating the vNIC templates and then setting up the application profile, that endpoint groups, using, again, the ACI SDK.

All right. So we're going to check back in on our workflow and see if we've completed, and we have. We've got success. That's always exciting to see in a live demo. And you can also see in our WebEx Teams room that we've had -- everything has finished deploying and we've got a message with, "Here's our server. It's ready to be used."

I did want to dive into one example, deeper in the workflow. We'll take a look at the DNA Center. So this is the child workflow that's creating that, and I want to look at one specific API call. This is the API call that calls the intent API to stand up the SSID. And you can see, here's the configuration data that we passed in. Here's our new store name that we put in in the demo. So everything ran. Everything's configured, and now we're ready to start doing interesting things at our store. So we'll go back to the slides.

So with this workflow automation, we've got a standard repeatable and also self-documenting way to stand up these new stores. We can send a very minimum number of people to the store to do the standup and they can work easily through WebEx Teams with the -- with people back at

headquarters. We've accomplished our 3 goals. We've got our store connected and compute-ready, and now Ashutosh would like to share with you some of the kinds of applications you can then run at the store.

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#### **Ashutosh Malegaonkar;Engineering Leader;Cisco DevNet Innovations**

Thank you, Mandy. So if you can switch to the camera. So how cool is this, right? I mean, this is a live WebEx meeting going on right now and I am wearing a Google Glass. What this is showing is the type of applications that we can actually see in the application space in a store or in the retail space. So Mandy, like, if you can just wave, like if you're standing there, like -- so this is an actual call, right? So this is an actual meeting that's going on and you could be talking to an expert remotely.

Now the things that we have done in this is -- if you can switch to the slides back, is like we've started seeing a lot of augmented reality or hands-free applications in the IoT space. But what we also see is that retail or health care is also asking for use cases, especially in health care, where doctors are doing operations in the OT and they want to actually see what's happening while the operation is going on. So these are some of the use cases where hands-free is needed. Now I lead a group of Co-Creations in DevNet, and we get to work with our partners and strategic partners like Google. And one of the projects that we are working on is the Google Glass project, where we have integrated the WebEx teams into the Google Glass. So what this helps is it really helps the IT engineers or it could be customers. It could be the store manager. But in this case, like Mandy talked about, a store bringing -- being brought up. Now it -- on the floor, you could actually have some issues. So let's say that I'm an IT engineer. I wear this glass and I'm able to actually show the problem to the expert who is back in the office.

So the way this thing works is that there is a registration process. And for this, what we've done is we've used the WebEx teams APIs as well as the security APIS. And the reason the security API is needed is because to make sure that this glass that I have -- I'm wearing is actually me. So I'll get a dual multifactor authentication coming to me. I say, yes, and then the glass is mine. So that's the registration process. And the second one is the actual making of a call. So in this case, what I'll do is -- if you can switch back into the video. So here, like I'm just showing you like if I first start, it starts setting up the device. And like you bring up a QR code, and at that point, it will start registering the device.

And that here, it will say that the registration is successful. The glass is under my name now, and then it'll say, scan a QR code. Now think about it, that if you're in a data center, you could have a serial number and you can actually look at that serial number and know which expert to call immediately. So in this case, like we actually made a call -- after the call is made, what you can do is this is a remote expert who's looking at it. What they can do is also share content back into the glass. So sitting here, if they share a diagram, like in this case, I'm going to show a diagram that shows up, the remote expert is actually showing a diagram and they're telling me like, "Okay, this is the problem that you need to fix or change the cable from here to here." So this is the kind of application that you can start working on.

So in conclusion -- if you can actually switch back to the slides. So in conclusion, right? I mean, one of the things that we are seeing is there's a hands-free experience that we want our customers to start having. The WebEx teams integration and the dual integration are pretty key for these kinds of applications. Thank you.

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#### **Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

Thank you. Thank you, Mandy and Ashutosh. So as you can see, what we're doing is making this technology real and bringing it to life, and there's tremendous opportunities ahead. Now in addition to the technology trends that we talked about earlier, I wanted to talk about some workforce trends because at the end of the day, this is about you and your careers. And what's interesting is this transformation that's going to the increased power and the technologists. So again, there's automation, but it's really about the expertise that becomes important. And because technology can drive so much business, that combination is important.

The second is that CIOs are going to be looking to developers and technologists to let them know what are those latest tech trends that I can use to provide value to my business. And also developers and technologists will have greater influence in buying decisions and business decisions. So we want all of you to be prepared to step up into that role. And I want to talk about some career success that we've had from our community.

So first, [Andre Elhart], who's at Dimension Data and NTT. And basically, in 2014, she jumped in and earned her CCNA and CCNP. And then she jumped into DevNet and attended a Cisco DevNet Express in Berlin. She attended a Cisco Live, started presenting her demos there. She organized the DevNet Express partner event and then went on to become a DevNet creator and has gone on to build practices and actually train people in our company about DevNet and automation. And throughout her career, she's grown to actually rise and train others on automation practices and now help the entire workforce transform across Europe.

Let's also take a look at [Matias]. [Matias Prokop] from Natilik, and he's been involved in Cisco Networking Academy and first started touching Cisco there and then earned his CCNP and earned his CCDP, and then became a Cisco partner and hosted a Cisco partner DevNet Express event with their customers and presented at Cisco Live and became a Cisco champion. So through this, he's worked in many companies. And now is at Natilik and is driving their practices as they bring automation into their business practices for their customers. I want to welcome -- stand up Matias right here in the audience. [Andre], yes. Excellent. And it shows you how -- what we really care about is your expertise as you're building up these capabilities. And we're hoping that as we help you with your career success, that you also become our customers for life, especially in this field where technical expertise matters, and we're committed to helping you succeed.

And if we take a look at this, then, again, it all comes to how we can help you build your capabilities for the new network so you can be successful in the years ahead. As you know, in DevNet, we've provided lots of resources for you through the community, most importantly in ways for sharing code for having learning labs and getting hands on with different APIs. And also, what we're doing is really looking at this transformation that brings together the world of infrastructure engineers with the world of software developers. And those of you who are here at the early stages of that transition are going to be leaders in this new and emerging area. And if we take a look at how you build your IT team or your technology team of the future, what we find is that you need that combination of infrastructure engineers and software developers or, more specifically, a combination of infrastructure skills and expertise and software skills and expertise. And with that, we have new certifications. We have a new CCNA, CCNP, CCIE and CC specialist certification. And in addition, we've launched entirely new Cisco DevNet certifications to certify your software capabilities.

And if you take a look, we have 10 new DevNet certifications that our DevNet associate DevNet professional plus 8 technology concentrations to really get you going and be able to work in new ways. And what this does is provide you for entirely new job roles like network automation developer. This was not a role that existed in the past, but it's a role that exists now because of the capabilities of the new network. So you could earn your DevNet professional and then combine it with a Cisco specialist in enterprise core, a DevNet specialist in enterprise automation and in DevOps, a powerful set of capabilities to make you a network automation developer.

Another role is the web scale engineer. The web scale engineer, now that you have entirely new levels of networking in your business, not only for web companies, but for any company that has a web scale infrastructure. So you'd combine that DevNet professional with data center automation and programmability with ACI engineering expertise and DevOps. And this starts to get to be a very powerful combination of skills for a new role that's emerging.

We've also announced, for partners, a new DevNet specialization to recognize the partners who have built up the capabilities to offer DevNet-type solutions to their customers because customers have asked, "Which are the partners that can give me the new network and all the promise that's provided by all these new capabilities?" And the DevNet specialization will provide that differentiation for those partners.

And with these new certifications, the new certifications are available for people on February 24, 2020. February 24. And in order to help you prepare, we have 61 new training courses that are supporting the new certifications. These are available, some available in January. The rest are coming in February, and this is how you can get started now to learn about these new capabilities to take you into the future.

And also, if you wanted to learn more about the DevNet certifications, you can go to [developer.cisco.com/certification](https://developer.cisco.com/certification) and look at the exam topics. And alongside on the right side are the 3 DevNet learning labs that can go alongside and help teach you some of those skills. So that's a great resource to get you started today. And in addition, we have some new DevNet tools for you to use, which is there's a new DevNet fundamentals training course that will be released in February 2020, next month. And what this does is give you a next-generation learning experience where you have an interactive coding experience and coding environment so that you can practice as you go. And it connects into a built-in integrated lab so you can get hands on with the APIs and the technology as you learn.

Now also what we heard is that people have started investing in study groups. So they've started study groups to start studying for these new technologies and to start studying for the certifications, and they've done it on their own. So we've listened to them, and then we've created a new DevNet study group platform to allow an online community platform for a study group leader who wants to come in and go through one topic, go through another topic, use our learning labs to study for these certifications. So this is available for alpha users right now if you want to go and take a look. So -- and then it will become available premium offers in February. So go ahead and start that now if you have a study group that you'd like to lead.

And then finally, what I'd like to announce is that we want to recognize those of you who are taking this leap into the DevNet certifications, and you're being the leaders in your field. So we are announcing that the first 500 people who earn any DevNet certification will be recognized as the DevNet 500. And so what you have the opportunity to do is to be the first ones to receive that DevNet certification. And we're doing that to recognize you, but also to help you and to partner with you as you become leaders in the next chapter of your careers and as you lead the power of the infrastructure in driving new businesses.

So I want to once again thank you for the investment that you've made in Cisco and let you know that we're committed to helping you in your careers and your businesses, and we appreciate all the effort that you've put in and given to us. Thank you.

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**David dela Cruz;Commercial Account Manager**

Welcome back to the studio. What a great talk by Susie Wee and her crew of the merry DevNet musketeers, I guess. She's just ended on the topic at DevNet certification and the DevNet specialization, and we're here to dig into that topic a little bit further. So I've got a really great guest here today. Welcome, Chuck Stickney. You're a business development architect for Cisco DevNet. Thanks so much for being on the show.

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**Chuck Stickney;Business Development Architect;Cisco DevNet**

Thank you. Glad to be here.

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## QUESTIONS AND ANSWERS

**David dela Cruz;Commercial Account Manager**

So for some people that maybe are not as familiar with DevNet and with partner programs in general at Cisco, what is the DevNet specialization in itself? And why is it important for partners?

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**Chuck Stickney;Business Development Architect;Cisco DevNet**

Sure. We view the DevNet specialization as being important for recognizing partners. Susie mentioned the ability to program into the new network. We want to recognize, not only customers and practitioners that have the certifications, but companies that have the ability to deliver and execute on that message and to be able to deliver those solutions for customers, leveraging programmability and automation on top of Cisco APIs and Cisco platforms.

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**David dela Cruz;Commercial Account Manager**

Awesome. And what kind of partners would be potentially interested in this new specialization?



**Chuck Stickney;Business Development Architect;Cisco DevNet**

We built this program to, of course, focus on our Cisco channel partners but we also want to focus on nontraditional Cisco partners. So we know there are many software partners in the community that they've never been able to have a relationship with Cisco because they simply don't sell Cisco product or services but they understand APIs, they understand programming and want to be able to deliver that both to customers as well as existing channel partners that have not created that type of platform. We -- this program will allow those partners to be specialized and recognized for customers who only focus on software and also for partners who wants to be able to leverage that for existing channel partners to deliver those solutions.

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**David dela Cruz;Commercial Account Manager**

So it's kind of like a 2-tone sort of program. One...

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**Chuck Stickney;Business Development Architect;Cisco DevNet**

Very much.

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**David dela Cruz;Commercial Account Manager**

One side is for existing Cisco partners getting into software and one is for Cisco -- sorry, software partners getting into Cisco.

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**Chuck Stickney;Business Development Architect;Cisco DevNet**

That's exactly right. Exactly, yes.

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**David dela Cruz;Commercial Account Manager**

And what can partners do to prepare for a DevNet specialization now? I saw Susie put a list of courses on. Is that all they can do is their workshops? What else is available?

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**Chuck Stickney;Business Development Architect;Cisco DevNet**

Yes. So like all Cisco -- or all Cisco specialization programs, we base that on the Cisco career certifications. So the first step that we always encourage folks to do is begin studying for the DevNet certifications themselves, the study courses. Susie just announced the class work that we have, the 61 courses that are coming out. Some of those will be traditional instructor-led training and some of those will be electronic training on the DevNet portal and through learning at Cisco. So we encourage our partners to go ahead and start taking that curriculum and getting themselves studied up, skilled up and certified so that their [individuals] are prepared, but also to focus on what their programs look like internally, making sure they have a good business plan around their DevOps practices and the go-to-market strategy for how they want to start to deliver Cisco services on software.

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**David dela Cruz;Commercial Account Manager**

Awesome. And all those programs and the resources that are available, where is the best place find all those and so they can get cracking, I suppose, on the production?

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**Chuck Stickney;Business Development Architect;Cisco DevNet**

Absolutely. So a couple of approaches for that. So developer.cisco.com is our portal. If you're new to DevNet, go to /startnow. That's the program -- that's the place where you use to get all of the information, learning tracks that are specified to where you sit in the world today. So if you're new to software, we have tracks that focus on taking a network engineer and allowing him to get into software. If you're old hat on software but new to Cisco, we have tracks for you to use to learn about the Cisco pieces of it and apply software to it. As you look to engage in the partner program, developer.cisco.com/partner, that's our landing page for everything related to the Cisco DevNet specialization.

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**David dela Cruz;Commercial Account Manager**

Awesome. And if the partner is going to put in all that work, obviously, they're going to be getting something in return. What are the key sort of benefits for a partner if they're going to undertake the specialization?

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**Chuck Stickney;Business Development Architect;Cisco DevNet**

Right. So some of the benefits we look for is we know when we launched DevNet 6 years ago, we built it on a community approach. So we want to make sure that we expand that community to the partners themselves, for the partners to be able to integrate and work together amongst themselves, but also to leverage the Cisco -- the DevNet platforms and our exchanges to be able to advertise the -- their capabilities inside of that platform. So again, it advertises to that community. We also look to let -- open up an ecosystem to be able to advertise what they have inside of that as well as to get into more internal access to Cisco resources, to be able to drive what they see from the customer to be able to bring that to our business units and help to leverage that.

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**David dela Cruz;Commercial Account Manager**

Awesome. Perfect.

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**Chuck Stickney;Business Development Architect;Cisco DevNet**

And I think I got lost in that question. So I'm sorry.

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**David dela Cruz;Commercial Account Manager**

Not a problem at all. I'm sure if there is more questions around what benefits, et cetera, are available, it's all going to be on developer.cisco.com. All the information is there.

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**Chuck Stickney;Business Development Architect;Cisco DevNet**

Absolutely.

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**David dela Cruz;Commercial Account Manager**

Yes. Thank you so much for your insight there, Chuck. We are now going to be heading over to the DevNet zone. And I think Steve is still roaming the floor, and he's got another great guest for us there.

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

I never stopped roaming, David. Basically, roaming is all I do. Thanks for throwing it over. Great interview there with Chuck, by the way, as well. We appreciate it. So I'm hanging out. We're back in the super-exciting DevNet zone. So much going on, but I've got Ashutosh Malegaonkar here with me. How did I do on the pronunciation?

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**Ashutosh Malegaonkar;Engineering Leader;Cisco DevNet Innovations**

It's perfect.

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**Steve Multer;Chief Storytelling Officer**

Not so bad, rock and roll. May I have you hold that up just a little bit?

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**Ashutosh Malegaonkar;Engineering Leader;Cisco DevNet Innovations**

Sure.

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**Steve Multer;Chief Storytelling Officer**

You are a principal engineer for Co-Creations...

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**Ashutosh Malegaonkar;Engineering Leader;Cisco DevNet Innovations**

I am.

## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

Here at Cisco DevNet. So do us a favor. Tell us a bit about what Co-Creations is and how it works.

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**Ashutosh Malegaonkar;Engineering Leader;Cisco DevNet Innovations**

Yes. So Co-Creations is the arm of DevNet where we actually work with our customers, partners as well as strategic partners, like Apple and the Googles and the NVIDIAs of the world. And what we do is we try to do like innovations. We try to do like step-by-step process, where a lot of our customers are saying, "Hey, we know that this product has APIs. We know like we have a problem, but we don't know how to connect these 2 together," right? So what we do is we actually come -- bring them together in our workshops. We like tell them like how, step-by-step, what needs to be done, and then that's how we can start making them successful. So currently, like we are working with a lot of our customers. We work with Visa. We work with Starbucks. We have worked with Target. So like there are a lot of good customers as well as like our strategic partners are Apple, Google and NVIDIA. Now here, what I'm going to show you today is, like Patrick on our team as well as Adrian on our team, they're going to show you like 2 demos. The first one is our partnership with Google, and he will walk you through the demo right now.



**Steve Multer;Chief Storytelling Officer**

Fantastic. Let's head on over. We're going to weave Patrick into the conversation here. How's it going, man?

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**Unidentified Company Representative**

Good. How are you doing?

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**Steve Multer;Chief Storytelling Officer**

Good. Nice to have you. So I'm going to have you here on the mic with me. Ashutosh just kind of set things up. So what are you going to do? You're going to walk us through the demo here?

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**Unidentified Company Representative**

So yes. So we have an integration that we've built out with WebEx and Google Glass that allows anybody that has a Google Glass device to make calls via WebEx.

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**Steve Multer;Chief Storytelling Officer**

Very cool. All right.

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**Unidentified Company Representative**

So what I'm going to do here is I'm going to actually scan a QR code that's going to actually set up a WebEx call with myself. So bear with me 1 minute here. Okay.

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**Steve Multer;Chief Storytelling Officer**

See? We're all product. We'd like to think we're human. We're not human. We're product. It's the nature of the beast. Are we online? Are we good to go?

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**Unidentified Company Representative**

Sure. I'm actually calling. And you can hear it actually starting to ring, and you can see here that I have an incoming call from myself. So I'm going to go ahead and accept that. And so this is going to bring me into an actual live WebEx call. You can see that -- you can see what I'm broadcasting from the Google Glass device. So the use cases for this are typically centered around remote assistance. So imagine myself being an amateur network IT professional and I need help racking and stacking some network equipment. I could call a remote expert and I could get live diagnostics remotely with help.

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**Steve Multer;Chief Storytelling Officer**

Very, very cool. Thanks so much, Patrick. I appreciate it. Let's bring the camera back on this way. And Ashutosh, we're going to -- I know. We get stuck in the humanity. This is Adrian back over here on this side, Adrian? Thanks so much.

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**Unidentified Company Representative**

Thanks Steve (inaudible).

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**Steve Multer;Chief Storytelling Officer**

Thanks for taking the time. All right. So what are we showing on this side?

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**Unidentified Company Representative**

So we're showing actually here a demo based on Cisco Cyber Vision, a product that's been just announced, right, here at Cisco Live. So what we have here, we have a Cisco IC3000, right, running a Cisco Cyber Vision sensor. And to our IC3000, we have connected our own -- you see here, DevNet robot.

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**Steve Multer;Chief Storytelling Officer**

What is his name? Have you named him?

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**Unidentified Company Representative**

Not yet.

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**Steve Multer;Chief Storytelling Officer**

You haven't named it yet, all right? You've got like 2 more days to name him. So I'm going to rely on you guys.

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**Unidentified Company Representative**

We're still working on that. So we have the robot attached to it. So connected to the router, the router has the Cisco Cyber Vision sensor running on it. And we've developed a mobile app using the Cisco Cyber Vision APIs, right? So with this, we can actually detect, based on the traffic that the robot generates, Cyber Vision, the text -- the traffic captures it. And then through the API, we gather all the data. We save it in a [feed] stack. And based on that, we build a mobile app, right? So here, you can actually see. On -- we turn it on. We can move the robot. It's going to get detected. As it generates traffic on the network. Right there, you see.

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**Steve Multer;Chief Storytelling Officer**

Yes, yes, yes.

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**Unidentified Company Representative**

It gets detected, and then you can actually also see that one of the components, the firmware on it, is actually outdated. We'll just give it a second here.

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**Steve Multer;Chief Storytelling Officer**

The beauty of live theater, kids. Here we go.

**Unidentified Company Representative**

Exactly.

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**Steve Multer;Chief Storytelling Officer**

Well, as people are down here, they're going to be able to come by, and they're going to be able to see it all operating in person, right?

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**Unidentified Company Representative**

Exactly, yes.

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**Steve Multer;Chief Storytelling Officer**

And you're here with them all week long, and so people can come right in and then ask you questions?

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**Unidentified Company Representative**

We're here all week long. Yes, more than happy to help everybody.

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**Steve Multer;Chief Storytelling Officer**

Fantastic. Adrian, thank you so much. I appreciate you talking through it. Hey, Ashutosh, look at you, you crept right up on my left. That's great. All right. So we're going to take a little walk over to this side. Walk us through exactly what people see when they come down and why they really need to get in with Co-Creations.

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**Ashutosh Malegaonkar;Engineering Leader;Cisco DevNet Innovations**

Yes. So the reason they want to get into Co-Creations is because we have like 2 modes of like engagement. The first engagement is called a workshop, okay? And in the workshop, we can take a problem statement from them and make sure that we can actually do like design thinking sprint with them. We can actually like create a recipe for them. So that's the first one. And the second one is that if everything goes well, what we can do is we can actually like create a project for them for 1 quarter, okay? And we engage with them, but the end of that quarter is a proof-of-concept that the customer is having in their store, okay, or in their office. So that's one of the differences where like the prototype is pretty cool because that's how like they can know that the value for what they're doing is working in that environment because I can show a demo anywhere, but it doesn't help the customer.

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**Steve Multer;Chief Storytelling Officer**

Absolutely, absolutely.

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**Ashutosh Malegaonkar;Engineering Leader;Cisco DevNet Innovations**

That's what the power of Co-Creations is all about.

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**Steve Multer;Chief Storytelling Officer**

That's fantastic. People can find out about it here at the show. And again, if you're not here at the show but you are turning into the broadcast, we're going to give you all the different ways that you can get to Co-Creations. As you can see, we've been taking a little slow wander through the center of the DevNet zone. We're actually going to continue back to this side. In fact, Steve, swing it around this way. There we go.

We're going to leap right in, my brother Zane. You're all here. You're holding up -- I was going to give them a high five. I'm not going to give him a high five because he doesn't have a free hand right now. But what? Oh, yes, there we go. Fist bump? Here we go. We'll do mic bump. It's even better. Boom, there you go. So take over from me at this moment. Tell us what we're checking out on this side, brother.

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**Zane Powell;Associate Sales Representative**

Yes. So, hi, guys. So we are over here, we're still in the DevNet area, but we are over here at the multi-domain. So I found a really cool person [to tell] you. So let's go.

So we have the amazing Matt. Matt, introduce yourself.

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**Unidentified Company Representative**

I'm [Matt DiNapoli]. I'm a developer advocate with the DevNet program.

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**Zane Powell;Associate Sales Representative**

Matt, right, we have multi-domain mentioned, so many times today, but what is it?

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**Unidentified Company Representative**

Really, what we're trying to do is spread the activities of engagement across multiple Cisco platforms. So if you need compute services, you're going to deal with UCS. If you need data center networking, you're going to be dealing with ACI. If you're going across multiple sites, you're going to be dealing with SD-WAN. And then within the enterprise itself, we're going to be working with DNA Center. So being able to deploy services that cover all of those different platforms is really what multi-domain is all about.

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**Zane Powell;Associate Sales Representative**

Fantastic, Matt. Now why is that important for our customers?

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**Unidentified Company Representative**

Because there are all of those things that need to be worried about for developer usage, for internal network usage, and so we need to worry about them because that's what's being used. And so if we're in a self-service situation where things need to be deployed and spun up more quickly, we need to find out ways to automate across all of those platforms in that multi-domain fashion.

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**Zane Powell;Associate Sales Representative**

Fantastic. Now for all the Cisco Live attendees out here today, where can they find out more about multi-domain?



**Unidentified Company Representative**

Actually right here, we are running a demo that shows literally all of those platforms that I just mentioned in action, being deployed automatically through an application that we like to talk about called Cisco Action Orchestrator. It's kind of the glue that stitches all of those interactions together with those platforms.

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**Zane Powell;Associate Sales Representative**

Fantastic. So guys, if you want to find out more, get yourself down here to the multi-domain section, and Matt will show you how to do it. Matt, final thing and just to finish up here. What are you most looking forward to at this Cisco Live?

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**Unidentified Company Representative**

Just everyone attending my sessions. I have a number of them, and I really like to teach people how to integrate with Cisco platforms, and it's really exciting for me to inspire people to do the stuff that I love as well.

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**Zane Powell;Associate Sales Representative**

Really selling yourself, Matt. Thanks very much for your time there, and we're going to go back to the studio where Dave is waiting for us. David, what do you have for us?

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**David dela Cruz;Commercial Account Manager**

Thanks, Zane. Looks like you're having a great time out there in the DevNet zone. And I can see that DevNet really is like the cutting edge. It looks like a playground in terms of the different kinds of possibilities that are there, the things that people are trying out. So that is really, really exciting. Now what you do when you've developed your application? Well, you've got to make sure that it actually performs and you can actually deliver the outcomes that you've set out to achieve out down to your customers. And it turns out Cisco has a perfect platform for that also, and that is called AppDynamics.

Now we're going to be heading over to the innovation showcase in just a little while. We've got a session called competing on user experience and win using application visibility and business insights from AppDynamics.

Now the speaker is going to be a guy called Danny Winokur. You may have seen him this morning on the main stage in the keynote and then also in the innovation talk from compute. And we're heading over to there -- right now to the innovation showcase. Thank you.

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## PRESENTATION

**Unidentified Company Representative**

Hello, everyone, and welcome to the Innovation Talks Theater. My name is Toby, and I have the pleasure of being your host today. And it's really nice to see that everyone's made it here to Cisco Live 2020. There's a lot of us here, but together, we are building the bridge to make it possible for you to do anything. And at Cisco Live, you'll learn new things, be inspired and create the path to endless opportunities. Now we're going to be having 14 innovation talks here in this theater, where we will share with you our latest solutions, innovations and, of course, best practices.

Now today, we will be exploring the world of AppDynamics. And to tell us how to compete on user experience and win application visibility and business insights from AppDynamics, please welcome on stage, Danny Winokur.



**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Thanks, Toby. All right. Good afternoon, everyone. How are you doing? People hanging in there post-lunch, yes? Good. All right. So as Toby said, we're going to spend some time today talking about applications. And it may seem a bit counterintuitive for a conference that has at least a tendency historically to focus on infrastructure. But as we talked about in this morning's keynote, if you had the opportunity to see it, things are now really starting with the application in a world where we have digital business, right? And so I want to come at it from that perspective, and I'll sort of paint a picture of how we understand what's going on in the application world. And by understanding that, we can actually take the infrastructure and make it much more relevant and better connected to serve the needs of the applications and, ultimately, the business results that drive all of our organizations.

So what's going on right now? When we go out and we talk with the largest enterprises in the world, what we see consistently time and time again across every single industry. I don't care what vertical you're talking about. It could be transportation. It could be health care. It could be financial services. What we see is that they find that they are now competing in a world of experiences. These are digital experiences delivered through applications, and there is a bar that has been set by what I describe as the digital design native companies, right? These are companies like Facebook, like Google, like Uber, that began their life in the cloud, in a digital domain, and they approached it in a way that was design-led from the very beginning.

And so they created an expectation among users of simplicity, of speed of update, of agility and a beautiful design so that things would move quickly, be responsive and easy to use. And we all have come as individuals to be accustomed to those kinds of experiences. And it doesn't matter whether we're in our role as an employee at a company using an internal application or whether we are a consumer interacting with an organization that might be a vendor or someone that we're working with as a customer. In both cases, we expect those applications to be flawless. And what we see time and time again is the companies that figure out how to do that and do it well are the winners. They steal market share. They steal revenue.

They steal market cap in their stock market valuations away from the companies who are failing to keep up and failing to compete in this new world of digital experience.

Now this is a world that is challenging because what you see is that customers are speaking with their wallets and with their feet, right? 84% of consumers are saying that they have experienced problems with their digital services, and half of them would actually be willing to pay more for a product or service that delivers a better experience than their competitors, right? So they actually will just move and go to the other thing. This makes it very, very challenging. And it puts a burden not only on the application layer, but it also places a burden on the infrastructure, because the infrastructure is what the application depends on in order to run.

And so the technologies that are being used increasingly by development and operations organizations in order to deliver these world-class experiences need to not just include application technologies, but it also needs to include all of the layers of the stack that are down the stack and that the application depends on in order to deliver the full experience.

So what are we seeing happen with the technology? We're seeing a fourth new generation of technology taking hold across enterprise IT. It's what I'm referring to here as cloud and microservices technologies, but it follows on the heels of what I would say were the 3 major prior generations of IT technology: the mainframe, client server and web technologies, right?

And the question you might ask is, well, why? Like what is it that is brought about the advent of cloud and microservices? And I would argue that there are a few different things. One, obviously, is that technologies continue to evolve and grow, and there's new innovation and new ideas for how we do things. But just as importantly is the fact that in order to compete in a world where more and more is being done digitally and where experience is your competitive currency, you need to iterate really, really quickly. Why? Why do you need to iterate quickly? Because a bunch of executives or business planners sitting in a corporate headquarters in a conference room are not going to be able to know what is the winning experience in a digital application. They might think they know, but they're almost always wrong.



The companies that have proved this model have done it by actually developing hypotheses based on real user research, implementing their hypotheses very, very quickly into an application and getting it out fast into production and then making sure you have instrumentation and telemetry that gives you data back in real time about how the users of application are using it, where they're succeeding, where they're having trouble, where they're abandoning; using those learnings to reform updated hypotheses, reimplementing those updates into the application and, again, getting it right back out into production.

And then round and round you go in an iterative loop. And the companies that have succeeded in perfecting the technologies and the operating model to iterate quickly through that loop are getting more shots on goal than their competitors.

And those shots on goal increase their chances of scoring and their time to success into creating the best experience. That's why we see cloud and microservices. Cloud and microservices takes monolithic application architectures, breaks them down into small bite-sized components that pizza teams can work on, right? Agile, DevOps teams, the size of a team that can eat a pizza. Those small groups can now iterate very, very quickly using agile methodologies, and they can, therefore, run that iterative loop that I just described to get the best winning experience out in front of their users.

But -- so that's the advantage, but there is a dark side, right? The dark side is that you now find application estates within mature enterprises that look something like this, right? What do you notice about this picture? It is really complicated. There's a lot going on. There's a hybrid mix of different technologies, things that are spread across a variety of different deployment environments. So all 4 generations of technology: the mainframe, the client server, the web, the cloud and microservices technologies, all mixed together into a jumble with components using every one of those diverse technology stacks. Some are deployed publicly. Some are deployed using cloud technologies privately. Some are deployed using traditional architectures on-premise. Some are still deployed on mainframe for particular things that involve like back-end data processing.

You put it all together, and it's not unusual that we see a single application using all of these components where you have front-end components on something like Lambda iterating really quickly on the front end, spanning to some client server components in the middle in the middleware, going all the way back to a mainframe for core data access on some sort of data processing system. And you put it together in one application, and it has to deliver a flawless, responsive, no-downtime experience that you can iterate on quickly to win. That's really, really hard, and it's putting IT under tremendous pressure.

So one of the sources of pressure is what I alluded to at the very beginning, which is not just about the technology. It's also about the fact that most IT organizations have historically been set up with different teams that work in rather siloed ways. So you have your infra team that is really focused on the stacks and the workloads that they've traditionally been focused on. How do you build the racks and how do you get your compute and your storage and your network, how do you create instances and VMs, and now how do we expand that to handle the cloud, but usually done in a way that is not particularly well connected to what is going on up at the application layer. Then conversely, you have your app teams, right? And the app team is focused on an abstracted topology, an application topology that has things that are moving around up and above and on top of that infrastructure.

And these 2 teams don't particularly have the same common language. They certainly don't have the same tools. They don't have -- they're not accustomed to looking at and using the same data sets in the same vocabulary, and it has historically made it difficult them -- for them to work together, which, in a world that was moving more slowly and where applications were just internal support for the business but hadn't yet become the business. That was okay. They could sort of functionally optimize themselves. For this new world, it's not okay because if they fail to work together, they can't achieve the velocity that is required to win in this experience-driven world.

So here's what -- here's how it plays out. Here's what it looks like in action, right, is we have the IT war room. Something goes wrong with an application that is now essential to the delivery of a company's core products and services. You have -- a war room gets created and you have all the different functions in the war room that are there representing the different components, and they're pointing fingers at each other, right? Well, my thing looks good. Does your thing look good? Yes, mine looks good. Well, it must be yours? No, no, mine looks good, too. Right? And meanwhile, over on the other side of the hall, you've got the business people who are trying to make their way in this new digital world of experiences where they can't execute a business initiative unless it is coded into an application and deployed, pulling their hair out. They're like, "Our results

are suffering. How on earth am I going to succeed in this new domain when things are constantly going down or there's delays or latency on my pages? My customers are abandoning, and I see the profitability beginning to suffer?"

So what does it look like in numbers? It looks bad, right? 48% of downtime incidents costing over \$100,000 and 22%, almost 1/4 of them costing more than \$0.5 million per instance. We go into organizations routinely that have mission-critical core applications that are going down as many as 3, 4, 5 times a week, in some cases, a couple of times a day. Right? And that speaks nothing to the reputational damage that happens when your application is written up in the newspaper. Your users get angry. They can't access core services that they rely upon. And as the earlier data showed, when that happens, those users abandon, right? And so it's not just the cost and lost revenues at the time, but you actually lose customer goodwill and you get churn. And you now see your business results begin to suffer further.

So what do you do about it inside the organization to solve? Well, the problem is that the traditional organization is designed this way, right? You have a business team, a development team and an operations team, and they operate pretty separately, pretty siloed. That is a disadvantage in this world of rapid iteration where you need to get to the experience. Because as we've discussed, a business initiative must now be implemented in code, and developers are now coding the infrastructure that is run by the operations team. So if your business is included in software and your software is encoding your infrastructure that is being deployed by ops, those 3 teams must work together as at least a virtual team, if not an actual team. And they have to be tightly coordinated with an intimacy of collaboration in a model that we're referring to as BizDevOps, right?

So we need to help organizations make this change because there are a couple of components to it. One is the human element of it, which is that people have trouble changing. They're used to doing things a certain way. And so you have to overcome that inertia in the human operating model around how the teams actually work with one another. But we can actually help them do that by applying technology. And this is where AppDynamics comes in, right?

So what does AppDynamics do? We monitor these complex hybrid, multi-cloud application estates with all of these diverse technologies, and we do it using something that we call the business transaction. So if you saw the keynote this morning, you heard me explain that what a business transaction is, is essentially a pathway through the components of the application estate that together accomplish a key outcome for your end user. They sort of create the building blocks of the overall experience. So it could be applying a discount to a quote. It could be checking out or doing a payment processing, right? Those -- it could be booking a car service, right? Those are actions that together ladder up to create a full application experience, but each one delivers an important outcome for your users.

And what the business transaction does is allows us to cut through the noise of monitoring all of these individual components of technology and instead, look at the core unit of monitoring as that outcome-driven experience that your users are having, so that when something does go wrong, it's placed in a context. We understand why it's important, what it is, who it's affecting and, most importantly, how to root-cause it and fix it, right? And so that's what we do in the context of a business transaction.

But importantly, one of the other innovations that AppDynamics has brought to market was not only the ability to monitor the technical performance of the application but also the ability to monitor business performance inside the application. Because the application has become the business, it now contains within it incredibly valuable business data. What are the dollars and cents, the pounds, the euros that are being transacted with your customers? What are the most popular SKUs or products that are being put into the cart? What's the conversion rate at the different stages of your user funnel? Whatever your relevant business metrics are, you can tell the system and it will begin to monitor them in real time the same way it does technical performance data, and then allow you to build rich visual dashboards that show you how your business is performing, and places it in a correlated way against the context of technical performance.

So as you can see in this particular dashboard, which I also showed this morning, we actually have the business metrics at the top around insurance quotes and loans approved and bill payments. These are essential to the business leaders of the organization lined up against what is going on with the business transactions that make up the back-end, outcome-driven building blocks that make up this application, right? So that we can now begin to understand how the business is related to the technical performance of the application.

Now this morning, we announced a third additional capability on top of the business transaction and on top of the Business iQ capabilities that give you the business information monitoring that I just showed you. And this is our new AppDynamics Experience Journey Map. What the



Experience Journey Map does is adds that third complementary component, which is a lens through the actual eyes of your end users, the screens they are actually looking at. And it builds using AI and ML technology, a pathway through the app in the form of the actual front-end screens that are seen on the mobile device or in the web browser, and it stitches them together and then actually shows you user abandonment and technical performance on each screen, screen by screen.

So now you have an additional lens. You can say, "I understand my back-end components with the business transaction. I understand overall business performance through the application, and now I can combine them on a screen-by-screen basis through the lens of the actual user journey itself." And that allows you to now focus on what really matters most, because it may well be that you see a problem on the back end. It isn't actually affecting your users, and you have different problems that are affecting your users. So you want to prioritize the ones that are affecting your users before you start bothering with more subtle optimizations on the back end that haven't actually had any user experience impact. So this is what allows you to really, really leverage the full breadth of what is possible with AppDynamics, and we're very excited to bring this feature to market.

So before I continue, I thought it might be helpful for you to hear from some AppDynamics customers about the value that they're getting, and how they're combining this array of capabilities to run modern experience-driven digital businesses. So why don't we go ahead and run the customer video?

(presentation)

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Okay. So hopefully, it gives you a sense for how some of the leading brands around the world are actually leveraging this combination of capabilities to gain the visibility that they need. But just as important as the visibility, these lenses that allow you to actually prioritize and focus across all of this information that comes in with just raw visibility allows you to focus on what really matters most to create a competitive advantage in this experience-driven world.

So in the opening, I promised that I was going to make this really, really relevant to the infrastructure. So let me show you how exactly that happens. If we think about the operating model challenges within large organizations, when you drill into the operations teams, those challenges often look something like this. Right? I talked about the separation of the business teams, the development and the ops teams. But now we're drilling into the ops team, breaking it into its sub silos. And within operations, we often see app ops totally separate from infra ops, which is totally separate from net ops, which is totally separate from security operations.

And the only way they can start to move in lockstep and move quickly with the business and the development teams to win is they have to figure out how to work first with each other. And one of the things that makes that hard for them is that they're using legacy tools that they've invested in over the course of years and, in some cases, decades. They know how to use them. They're loyal to them. There's an inertia in making any kind of change, and yet those tools are not interconnected. They don't have the same data. They have different perspectives on what is going on. They express them with different vocabulary, different user models. And it becomes, therefore, very difficult when these teams are forced together into a room for them to have a productive conversation around what is really going on because they don't share a single source of truth or a common data model.

What we've been doing at Cisco, since the acquisition of AppDynamics, is working diligently toward a vision that we have to actually put these things together in a way that allows interoperability and allows data exchange and allows a common data model ultimately so that these teams now have the ability, still through their tools of choice, but now they can look at a shared source of truth, expressed in a tool that's familiar but correlated on the back end so that the answers that are being produced through each tool are, in fact, the same. What that does is allows them -- sorry, the people then that are using those tools, it allows them to come together in a much more collaborative model where they're working together to solve problems based on facts and shared data.

So that vision is a vision that, ultimately, we believe, will allow us to bring data in from all of these different domain-specific controllers, not replacing them because we'll continue to have specialized domain controllers for the network. That obviously have areas that they go way deep in compared to how you control compute or compared to how you're going to control your application. But they can share data into a correlated system that



runs AI and ML technologies to produce valuable insights that you can then access and query for the human user. You can also pump them out through APIs on an open platform for integration with third-party tools and services that allow for the automation and the actioning of events that are going to make it easier to manage these large, complex digital businesses. And this is what we refer to as an AI ops operating model, right, using AI and ML within operations to go beyond simple DevOps or sec ops and actually give you automation across the full operation stack with data that is understood from each of the historical silos correlated and turned into something meaningful.

So today, we announced another important innovation, which, again, you saw Liz and I demonstrate this morning on the main stage, which is an important step in this journey on this vision that I'm describing, where we've actually combined AppDynamics with Intersight, which is Cisco's infrastructure, automation and management platform in the cloud, so that you for the first time can have your app operations team that is using app dynamics paired with your infrastructure operations team that would be comfortable using something like Intersight, they can actually now have their tools, exchanging the exact same data and producing insights in a shared source of truth that allows them to troubleshoot and immediately solve problems, right?

And so that looks something like this. You've got a closed-loop operating model between these 2 historically separate teams so that they can actually start solving problems together much more quickly, and they can even go a step further and actually begin doing cost optimization, leveraging a combination of the AppDynamics application information and the topology data paired with what Intersight is able to see with its workload optimizer across all of the different on-premise and public cloud infrastructure and instances that you're using with cost data so that you can do economic optimization of your application in addition to troubleshooting and performance optimization. Together, you end up now able to go all the way from the very top of the stack with business information and end-user experience through the AppDynamics Experience Journey Map that we launched into the back end of the application down into the compute layer and into the network. And you put it all together and you're able to now have a correlated view up and down the stack across 2 or sometimes 3 separate teams that are operating the full stack of technologies that produce that application.

So I had shown this morning, if you were at the keynote, a sort of working example of this with the next-gen financial application, a fictional application that is online banking, and financial services. So you've got your insurance quotes, your loans approved and your bill payments, and you can see that there are warnings coming up here, but I can now just simply click within that warning for the \$450,000 dollars that are being produced in insurance quotes and say, "Hey, I want to explore this further because I see below in that prior screen that there were some problems in my business transactions, but I don't know if or how they're related." So I want to now go into this new feature.

This is the Experience Journey Map that we launched this morning, and it lets you see the full screen-by-screen path that your users are taking through the application. And you can see in this example that it goes right to the little orange triangle there and says, "Hey, there's a problem applying discounts." That's actually where the users are feeling the impact. So sure, there may be other alarms that you see on the back end. I'm going to ignore those other alarms right now because I'm being told on the front end that if I look through the eyes of my users, I need to prioritize my efforts right here. And so I can now do that and go down into the stack, still in AppDynamics, and see that I've got problems on quoting services. I've got problems on discount services. I don't care about the quoting service problem right now. Because the prior screen showed me that the other aspects of my quoting, including quote sent, no problem, normal abandonment, normal technical performance. So those back-end problems haven't hit my end users. But the VMs that are alarming on discounts, absolutely. That's 70% abandonment on the prior screen. It's affecting my users, and so I need to fix that.

And that's what then takes me in to Intersight where I call up my infer ops colleague. They open up their tools, and now we're looking inside Intersight, no longer AppDynamics, and I start at the very top, and I can actually see that I've got my applications. Within my applications, I've got next-gen financial as one of the applications in my estate. And I can then go and look at the dependency graphs specifically for that application and begin to drill down into the VMs. They're the exact same VMs that AppDynamics was showing me. And I get a recommendation to actually solve and apply a recommendation on increasing the memory that's available to those VMs, which then solves the problem at the VM level. I go back into AppDynamics and I see that everything now has turned green, solving the problem. So you see that power of correlated data across the 2 tools that are sharing that data on the back end.

So you saw then the ability there to do workload optimization within Intersight, the ability to access common data sets across AppDynamics and Intersight, and the ability to apply machine intelligence to make smart recommendations on how to solve problems and how to optimize workloads.

Together, it's a very powerful combination that is unique to AppDynamics and Cisco. You're not going to see anything like that from another APM tool. So anyone else doing performance management, application management, they can't do it. And you're similarly not going to see anything like that from another infrastructure tool where you have that dynamic data exchange all the way up to the app layer. So this, we believe, is helping to pioneer a coming together across these historic, these historically separate operating teams to give you again that closed-loop operating model.

So I hope that's been helpful. There are a number of other ways to follow up if you'd like to get more information. So we have demos in the Reimagine Your Applications area here within the World of Solutions. We have an offering that we make available, that is essentially a starter pack to experiment with AppDynamics. We call it an AppDynamics Visibility Pack. It's a very lightweight, fast and easy way to get started. And we also, on February 20, are going to be running a global virtual event called AppDynamics Transform 2020, where we'll go into much greater depth with a number of the top executive leaders from Cisco as well as myself and a number of other players from AppDynamics, and we will go through in much greater depth what's going on with the latest and greatest on the AppDynamics road map and what's possible together with Cisco. So look for that on February 20. You can see it on our website, and I hope you'll join us there and that you enjoy the rest of Cisco Live. Thank you.

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#### **Unidentified Company Representative**

Thank you so much. Guys, a big thank you to Danny.

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#### **Zane Powell;Associate Sales Representative**

And welcome back to the studio, everybody. That was a great innovation talk, and it looks like we're staying with AppDynamics. I have 2 very interesting guests with me. I have Linda Tong, Chief Product Officer at AppDynamics; and I also have Ely Greenfield, the CTO. How are we going on, guys?

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#### **Ely Greenfield;AppDynamics;CTO**

Doing great.

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#### **Linda Tong;AppDynamics;Chief Product Officer**

Doing awesome. Thanks for having us.

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### **QUESTIONS AND ANSWERS**

#### **Zane Powell;Associate Sales Representative**

Yes. No, thanks for coming. So look, AppDynamics is on everyone's mind, they've been talked about a lot. How would you describe AppDynamics? I'm going to throw that out to both of you there.

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#### **Ely Greenfield;AppDynamics;CTO**

All right. I'll take it first. So the AppDynamics platform basically is the best way to get end-to-end visibility across your applications to detect, diagnose and remediate any problem you find no matter what layer it lives in.



**Linda Tong;AppDynamics;Chief Product Officer**

So the best definition of what AppDynamics is and what you can do is actually in this awesome video on YouTube, I believe if you search Zane Powell, you can see this great definition of how you can leverage AppDynamics to unlock visibility in your application. Is that right, Zane?

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**Zane Powell;Associate Sales Representative**

I think, Linda, I think we need to actually get it up on the screen, I think, so everyone can see that? Fantastic. So next question goes to Ely. How do AppDynamics and Cisco connect application visibility and business insights that enable only global enterprises that weren't working in today's market?

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**Ely Greenfield;AppDynamics;CTO**

So AppDynamics has always been about taking your application data and putting that in the context of your business data and making sure that we can correlate what we know about your code and how it's running to the most important things that your users are doing and the processes that matter most of your business. As part of Cisco, what we've done is we've been taking AppDynamics and correlating that data down to the other products, technologies, applications that Cisco has so that we can connect that same business data through the application layer all the way down to the infrastructure and network layer to be able to connect all that back up to what the business actually cares most about and help them drive transformation while maintaining their core KPIs.

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**Zane Powell;Associate Sales Representative**

Fantastic, Ely. I actually have another question for you. So I've heard this acronym -- we love acronyms at Cisco, BizDevOps. Can you tell us a little bit about that? And how does AppDynamics really enabling organizations to use this operating model?

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**Ely Greenfield;AppDynamics;CTO**

Yes, BizDevOps is kind of a funny term. Probably most of you have heard our -- the term DevOps, right? DevOps has been around for a few years. It's all about the idea that we need to break down silos between these 2 organizations and improve communication between the developers and the IT organization, which is great. It helps them move much more agilely. But what we really need to do is break down that last remaining wall, which is between the technical organization, the dev and ops organization and the business side, so that our IT and dev teams can make their decisions and take their actions really in the context of what matters to the business, and they can together work together to figure out how to really allocate their resources appropriately there.

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**Zane Powell;Associate Sales Representative**

So it's all about speed and it's all about agility. So that brings me on to my next question. Another 2 buzzwords, machine learning and AI. Linda, what is AppDynamics doing to use machine learning and AI at the moment?

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**Linda Tong;AppDynamics;Chief Product Officer**

Well, actually, since the very beginning of AppDynamics, one of our key innovations is how we've been leveraging ML. And so one of the things we've been doing is around dynamic baselining. Identifying your application performance is really difficult, and people have traditionally had to set their own sort of baselines and understand what does normal look like. We've created these dynamic baselines to recognize seasonality and, ultimately, what is normal for you so that we can help alert you when those go off. And then ultimately, what we've actually released more recently is how we identify when to alert you. So anomaly detection of when does something look off, when are you no longer operating in normal and



when do you have a problem in your ecosystem. So we can tell you intelligently that there's a problem, and then we can help you with root cause analysis so that you can quickly troubleshoot and get to the solution as fast as possible.

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**Zane Powell;Associate Sales Representative**

Fantastic. Now AppDynamics is a part of Cisco. And we see you guys as a great partnership. So the next question is really about how are you working together? How is AppDynamics and Cisco tying together network and infrastructure visibility with an application-centric view? And that goes to you, Linda.

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**Linda Tong;AppDynamics;Chief Product Officer**

So last year, we actually announced a really great integration with Cisco ACI, so the application-centric infrastructure. We found this great opportunity to get not only application visibility but through the lens of how you actually map that down to the network level. So within your data center, you can see how your application is performing. And if there are network problems, you could easily begin to troubleshoot those.

More recently, so this morning, we talked about an integration with Cisco Workload Optimization Manager, where you can actually start to see underlying infrastructure and how that might be impacting the application and how that might be impacting your business. So if something does go wrong, whether it's -- you don't have enough compute or there's no storage or there's something wrong with the network, we can understand where those problems lie in your infrastructure and exactly where the application level is causing a problem for your end users.

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**Zane Powell;Associate Sales Representative**

Yes. Fantastic. So really a kind of detection is really, really speeding it up. So, Ely, looking at this, what are some of the use cases? Where can we really see this being used?

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**Ely Greenfield;AppDynamics;CTO**

Well, so the classic use case for AppDynamics are really, our bread and butter is around monitoring application performance and making sure that you can detect those problems and diagnose root cause and correct them as quickly as possible, right? Now what we're seeing more and more is people leaning into connecting that down into the other layers and driving that connection all the way back to the business layer. This level of sort of visibility allows our customers not only to make sure that applications are running but start to invest in bigger projects like migrating to the cloud or just engaging in digital transformation in general, because they know what their SLAs are and what levels they're looking for, and they know how to make sure that they continue to maintain those as they make these investments.

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**Zane Powell;Associate Sales Representative**

Fantastic. Ely, that sounds really, really exciting. And I'm interested to find out more about the road map. Where do we really see things going? So, Ely, what have you done since last year since AppDynamics and Cisco, at least central nervous system vision one?

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**Ely Greenfield;AppDynamics;CTO**

There's been a whole bunch of innovations that have gone into AppD over the past year way more than we can list now. But when it comes to the central nervous system, our investments have really been about continuing to make sure that we pour more data into the system, so that data that we've collected on behalf of our customers is incredibly valuable to them to solve these problems with additional connections, additional data sources and also then tying it down into the other Cisco products like ACI, like Intersight, to make sure that we can drive action out of that system when you do discover a problem.



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**Zane Powell;Associate Sales Representative**

Brilliant. So really tying everything in together.

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**Ely Greenfield;AppDynamics;CTO**

Absolutely.

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**Zane Powell;Associate Sales Representative**

So, Linda, what is the sort of road map for the next 6 months? I know that you released some new products today. Can you give us a little sneak peek some of these?

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**Linda Tong;AppDynamics;Chief Product Officer**

Yes, sure. So today, we just announced the Experience Journey Map. So we're really excited to give you that visibility at the end user level. But over the next 6 months, we're going to continue those investments that Ely just mentioned around our platform, and being able to start to increase our scale so that we can start to be pulling in -- we can start pulling in more domain data from all these different sources and we can start to give you that kind of visibility. And then we're going to start to build these end-to-end experiences that allow you to do more than application performance. So we can start to give you insights into things like security and deeper network insights and -- so we're really excited about how we're going to unlock that and really bringing home some new innovation for the broader Cisco portfolio.

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**Zane Powell;Associate Sales Representative**

Fantastic. Well, guys, thanks very much. It was great to have you here. And we're going to throw it over to the Alaska Airlines case study.

(presentation)

Again, everyone. I just want to wrap up the interview I had there with Linda and Ely. I think 2 key points that we need to remember. AppDynamics is integrated deeper with all of Cisco's portfolio. We have ACI. We have CWON and that's really, really exciting news about the new customer insights platform. We all know that's all about customer experience now, so I'm really excited to see where the future heads. Now I'm going you throw it out to Steve, who's at the AppDynamics booth. Steve, what do you have for us?

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

Hey there, my friend. Thank you so much. I am as far from you as I can possibly get right now. We're all the way down at the far end of the Cisco showcase in the [wall]. This is where you come to see Cisco's full robust portfolio, to see all the different solutions of Cisco at work in every day scenarios. So make sure you get down here. We're going to talk now about AppDynamics a little bit more, continue the story we've been hearing about AppD all day long. Starting with the keynote right into 2 innovation talks, I've decided that Liz Centoni has got to be the hardest working woman in all of Cisco. She's everywhere. I don't know how she thinks.

Now what I want to do is start taking that AppDynamics story that we've been building up, and I want to start putting it into action. A lot of time has been spent trying to introduce people to what AppD is all about and how it fits into the Cisco portfolio and platform. Now that people understand it, now we want to get you started taking those first steps. I got Ben Haddox over here with me. How are you, bud?

**Ben Haddox;AppDynamics;Senior Sales Engineer**

I'm doing great. How are you?

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## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

Really good to be back with you. So solutions engineer here with AppDynamics, Ben is a perfect person to tell this story. Let's start off by talking about how AppD is connecting application visibility with business insights. It's a good place to start.

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

It is a good place to start. And that started a couple of years ago when we released our Business iQ. So one of the things we do at AppDynamics is we take every metric we collect, whether it's business, infrastructure, network. And we do it to a single end user transaction. So everything gets correlated back to a single end user transaction, and that becomes our single point of truth. So by pulling into business metrics, now we're saying it's important to keep IT up. But what's that impact on your business? If my application is down, what kind of revenue impact is it? How is my user base being affected by this? So that's where it really all started. And then that kind of fed into the CNS vision, and now we're putting that into applications.

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**Steve Multer;Chief Storytelling Officer**

I just love that. It's really exciting to see what this evolution is. We've been hearing examples all day here of AppDynamics integration. I'd love to hear from you, your own personal perspective, what are the capabilities that you're hearing about from AppD customers?

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

So our customers are really excited about the fact that these integrations we're starting to build. So we have a new team at AppD that is being led by Brian Paul. And what that team does is they enable our customers and our partners to use APIs to integrate their tools in to pull our data out and to put data into our solution. Because what we're finding is that when you build an AI ops framework right now, it's going to take like a conglomerate. It's going to take the whole village, so to speak. So when you can take all of the tools and solutions that a client is using and meld them all together into one complete AI ops framework, that's what they're excited about. And that's where these integrations come in. And in fact, some of the integrations I have here, if you want to take a look...

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**Steve Multer;Chief Storytelling Officer**

Yes, let's -- show us some. Are you okay to hold the mic?

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

I'm good. Yes.

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**Steve Multer;Chief Storytelling Officer**

He is just certainly multitasked. So I'm just going to stand back here. So where do we want to begin? Because I know we've got a few demos running up here.

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

So a couple of the ones that we started with. So last year we -- when we came in with Cisco 2 years ago, we started looking at, well, the obvious thing is how can we get into the network, how can we bring more of the network in. And one of the first things we did was ACI, which is the software-defined network by Cisco. So we've actually integrated ACI into our solution. And by doing that, what we've be able to do, I'm looking at an application now where I'm having issues, and I'm in my network dashboard, where I'm looking to say, okay, I know I've got issues in my network here. But how do I find out what's going on? Well, I can take a deeper dive, and I can start looking at my connections. And just by coming in, I can troubleshoot and go straight into ACI.

And in fact, I opened this up earlier and dug in, I was able to see that there were some policies that were being created and deleted that were affecting how the application was working. So quickly, without even having to be a network expert, without having to be an application expert, I could go in and say, "Hey, I know you just changed some stuff in the network that's affecting our revenue stream. Someone needs to go fix that and get the right people in to fix it."

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**Steve Multer;Chief Storytelling Officer**

Is this more a speed-to-diagnosis story? Is this more of a comprehensive overview story? How do you communicate this directly to your customers?

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

It's both. And if you remember Danny talking about that CNS vision, we're on the left side of that vision, the visibility, bringing in more visibility into AppDynamics. So we have partners out there that are doing just this kind of thing, where it's -- what's that extra data that we're not -- that we don't get. When that data comes in, again, we go back, we've got it correlated down to a single end user transaction, which is kind of the key theme that CTOs and CEOs, CIOs are looking for is, what's my end user? What's my customer experience with my application? So we can pull in that extra data and give them that view.

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**Steve Multer;Chief Storytelling Officer**

Absolutely. Now you've got a number of different things, that you can walk us through with this. Show us some of the other capabilities?

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

Correct. So on the other end of this, we can go into the CWOM integration. So here we have a dashboard that's showing all of our business metrics, architecture metrics, transaction metrics, but we're pulling in CWOM data. So CWOM will actually look at everything that's running, and it can scale up or scale down infrastructure as needed on demand by the application. But I don't even have to leave the app -- the screen with the integration we built with the Turbonomic folks. In CWOM, we can now pull everything in. And now you can see, I can come down here and I can take actions just from this screen without even have to leave it.

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**Steve Multer;Chief Storytelling Officer**

That's so cool. In terms of the organizations that are making the best use of this right now, does it seem to be fitting really with very large organizations or are small organizations keying off these benefits as well?

**Ben Haddox;AppDynamics;Senior Sales Engineer**

It's both. It's both. You'll see larger organizations because they get infrastructures that are so big and hard to manage, that you need something that can tie everything together and set that framework up so they can quickly resolve the issues that are impacting the revenue. For the little businesses, they see value in this because they may have an infrastructure, but they don't have all the resources to be able to manage that, and so it becomes cost saving to pull something like this in and to help them manage that infrastructure.

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**Steve Multer;Chief Storytelling Officer**

Okay. Very cool. In terms of FAQ, so you've got a lot of visitors here today. And again, for those of you who aren't here at the show, we just encourage you, there's something about being here in this space where you can come down and talk to people like Ben and the rest of the AppD team. And I've always out here to say, and I say this to Don all the time, there is nobody more passionate here within our Cisco family about what it is that you do than the AppD team. So a lot of the new people that were on board as well, we're really feeling the passion from all of you guys.

Let's talk about the FAQs of the people who have been visiting you here on the show. What have they been coming up and primarily wanting to see from you?

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

So I think it comes down, it's the new integrations and the new things that we're doing with our partners. They ask a lot of things about some of the newer technologies, how we're handling Kubernetes, how we're going into the cloud. A lot of the big cloud players out there like AWS, Azure, IBM Cloud, Google Cloud. We have integrations with their services, being able to play well in those clouds, being able to monitor applications across multiple clouds. So if you get into like a multiple cloud or a hybrid cloud situation, we can track a single user across all those environments and stitch it all together so you can see what's going on and where your issues are. So we get a lot of questions along that. But mainly along this new CNS stuff of how does that all fit together, what does it really mean. So...

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**Steve Multer;Chief Storytelling Officer**

All right. So let's actually go to the new. Because again, we kicked off this morning, there was a lot of AppDynamics talk. System Intersight capabilities, deep dives connecting everything from the application all the way down through the stack. Let's talk about what's happening, and we were hearing about it more in innovation talk during -- Liz Centoni's talk. But that new Experience Journey Map and solutions in terms, right, can you walk us through what's going on with that here?

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

Yes. So here, I pulled it up. This is over on our beta server. Of course, we made the announcement on this today. So what this does, this will be done out of the box. So if you have our EUM and you have our analytics, this will be automatically generated out of the box. And it's just showing you a flow of how users are flowing through your site and your applications on a page by page at a business view. What's my drop-off at each stage? Am I having issues on each stage? So if I highlight, like take for instance, here, I can see I've got a 27% drop-off. Well, my revenue is being generated on the back end, and I'm already losing 1/4 of my customers. But I can highlight here real quick, and I can see I'm getting a lot of Javascript errors on the front end. So now I already know that I've got an issue on my website, and I've got a lot of drop-off before I'm even getting to my revenue. So I need to go fix this right away.

So being able to quickly see from a business standpoint how customers are flowing through this journey of generating revenue and being able to quickly identify because it may be something business-related. All your application, all these squares could be blue and you may still have like a 50%, 60% drop-off. Now you've got a business issue that you need to go take a look at. But you're getting all of that information because, again, we collect everything and correlate it back to that single end user. So now you can see how your business and how your user is interacting together.

**Steve Multer;Chief Storytelling Officer**

So cool. Talk to us a little bit about the nature of the integration play, right? So you brought up ACI before and how we're putting in on the ACI side. How else is this integrating within the rest of what's happening within the portfolio?

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

So again, it goes into the business side of things. So as we get more and more of our partners coming in and integrating things together, they're looking at us to provide that data from that end user point of view. So we've got a lot of cool things. I know Moogsoft has been over here in our booth, doing some talks about the integration we just released with them. We have some integrations with ServiceNow and their CMDB. So you're seeing things like with Turbonomics and CWOM and Cisco.

On the other side, Cisco has been working hard on doing titration, SD-WAN, ACI. So you're starting to see a lot of people coming in and saying, "Okay, how do we become a part of this?" Because at the end of the day, that's what we're building, it's a framework, a framework that you can take and send in an environment and say this is how you're going to run AI ops, this is how you're going to get that community to talk together and correlate it all back to that single end user.

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**Steve Multer;Chief Storytelling Officer**

So let's talk about how people actually do integrate. If they're right now at a point where they're -- let's say that they're building their infrastructure, they're building out their organization to modernize for the future. They're moving toward those steps to make sure that they are catching up for Internet of the future capabilities. What is their first step in integrating with AppD if they haven't brought AppD capability on board yet? Where do you think they begin?

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

So the first step would be to talk to their Cisco rep or even talk to their partners, if they have a partner that's managing their environment. Right now, we are spending up a bunch of our partners, enabling them on this very idea of an AI ops framework and integrating. But the first step would be talk to your Cisco rep, ask them to bring in AppD and to see how this integration fits together. If they have a partner, bring the partner along as well. Because, again, at the end of the day, CNS is more than just a, "Hey, here we are to offer you a solution." CNS is a framework of bringing everything together to work in a -- the most efficiently for a customer. So if we can get the Cisco reps, the partner reps and the AppD reps altogether, we can give you the best solution that will fit the needs that you have.

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**Steve Multer;Chief Storytelling Officer**

That's so cool. All right. I want to ask you just a tiny bit more about this. But before we do that, though, we've got some mascots sitting back over. I got to be stealing all 4 or the ones that are sitting here. None of them for you. They're all for me.

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

Actually, this is the second time we've done this. I felt like it was a second date, so one of these is yours. It's from me.

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**Steve Multer;Chief Storytelling Officer**

It's like hacker bear. Why -- only one of them is mine?

**Ben Haddox;AppDynamics;Senior Sales Engineer**

One of -- okay, you can have 2.

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**Steve Multer;Chief Storytelling Officer**

Is that what everybody says? I've got 2 kids at home. Can I have 2 bears? That's alright. I can only carry 2 bears, can't carry anymore. All right. So talk about hoodie bear.

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

Okay. Our hoodie bear is -- you could go over to the lounge and you can get a hoodie bear. And when you go over to the lounge, we actually do a -- it's an express your -- I guess, it's an express your digital self. You can take -- it's a 5-question survey. And then at the end of the survey, they tell you what kind of digital person you are. Are you a digital diva? Are you a digital rager? Are you a digital drifter? So it has like -- I refused to take it. I was afraid to come up, like digital idiot, please leave the premises so. But no, it's really cool. It's a lot of fun. We got some cool things, places you can sit down and chat. I know we've got soda, food, water bottles, the bears, everything.

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**Steve Multer;Chief Storytelling Officer**

That's very cool. Right now by the way, back in the studio, I know that we're going to be tossing it back -- throwing it back up to Nish and to David in just a moment. And they're both thinking, "Are those bears mine?" And the answer is yes. That's okay. Actually, start to Zane, I'm going to get a third bear for David. So don't worry, Zane, they're -- look. (inaudible)

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

For you, Zane.

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**Steve Multer;Chief Storytelling Officer**

All right. So we've got about 1 minute left. I want to kind of put the button on what we're talking about here. For the rest of the week, we're going to continue to hear highlights from AppD and everything that's going on with the AppDynamics team. Kindly give us the big overview of what we're going to expect next in the picture. As we continue to roll through 2020 and we start to head toward what's going to be taking place eventually in U.S. end of May, beginning of June, what are we going to continue to grow toward?

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

So I think you're going to see us continue to grow out that CNS vision, looking at bringing in more integrations. You're going to see stronger integrations into the cloud with the cloud services, being able to go into some of those native cloud services and monitoring those. You'll see a lot more of the serverless stuff coming out. There are some really big things, things I'm not allowed to talk about because I know Danny and Linda and Ely are probably listening. But there are a lot of cool things our guys are working hard. And I think innovations like the Experience Journey Map are just the beginning, and there are some really cool things on the horizon.

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**Steve Multer;Chief Storytelling Officer**

There's so many cool things on the horizon. Again, we are crazy excited for everything that AppDynamics has been doing. Always a great story for us to tell here on the Cisco side, because again, it just builds for that depth and breadth of what we're capable of. AppD's just been such an amazing addition. Thank you.

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

We love Cisco. We love being a part of Cisco.

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**Steve Multer;Chief Storytelling Officer**

Say that again a little bit louder, please.

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**Ben Haddox;AppDynamics;Senior Sales Engineer**

We love being a part of Cisco, and we love Cisco Live. And you know what, this is my first time to Europe, and I thank you guys. You're amazing.

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**Steve Multer;Chief Storytelling Officer**

All right? Fine, I'll pay you later. Well done. All right, guys, so I'm on my way back to the studio, and I'm stealing every single one of the bears. All right, Zane, Nish, back up to you guys. I'll see you shortly.

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**Zane Powell;Associate Sales Representative**

Thanks, Steve. Steve, you know what, I almost forgave you there because I think you were actually going to bring me a bear. You didn't bring me a bear. So look, fantastic demo there from the AppD guys. And I think when you see it on the screen in front of you, it really brings everything together. You can see how it ties in Insights, it ties in ACI, CWON, Tetration. It's fantastic stuff. And just one point to recap on, AppDynamics isn't just for large enterprises. Small businesses are also getting a lot of value out of it too. Now I actually have our lovely Nish Parkar in the studio with me. Nish, what have you got going on?

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**Nish Parkar;Cybersecurity Communications Manager**

Yes. Lots going on today. It's been a busy day. We've had lots of talks, lots of interviews today. I've been wandering around the World of Solutions, the park. And I saw something really interesting in Build a Bike. Did you see that?

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**Zane Powell;Associate Sales Representative**

I've not seen Build a Bike. You'll need to explain it.

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**Nish Parkar;Cybersecurity Communications Manager**

So Build a Bike is where all the 17,000 attendees here at Cisco Live can head on down and actually physically help to build a bike. And then at the end of the week, we're donating those bikes to some of the local charities here in Barcelona and those who need it the most.

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**Zane Powell;Associate Sales Representative**

Fantastic. And I think CSR is such an important thing. And we can't forget, Cisco Live isn't just about a technology. It's also about celebrating other things that we do here at Cisco. And, Nish, can you tell us a little about Time2Give? And what Time2Give is and what's special about that?

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**Nish Parkar;Cybersecurity Communications Manager**

Yes, sure. So if this doesn't get you wanting to work at Cisco, I don't know what will, right?

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**Zane Powell;Associate Sales Representative**

I agree. Totally agree.

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**Nish Parkar;Cybersecurity Communications Manager**

So Time2Give is a program that is for all Cisco employees. And every Cisco employee gets 5 days off every single year to actually volunteer in any way that they like, right? So I think you have some ideas on how you're going to use yours.

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**Zane Powell;Associate Sales Representative**

Yes, you're right. You're absolutely correct. So yes, I'm actually -- so going off to Carly in France next month and 16 people, other people in the graduate program, we have a way to support the refugees in Carly. And there's an absolutely fantastic opportunity to give back for 5 days and going to make a difference to someone's life. So, Nish, I think it's time to hand it over to the first innovation talk. But before we do that, I want to ask you, I had -- you so had a Time2Give thing last year, was it?

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**Nish Parkar;Cybersecurity Communications Manager**

Yes, every year, actually. I make sure I use my 5 Time2Give days. I've got a couple of different things planned this year as well. But just one of the really key thing, I guess, that we want to kind of showcase to all of the attendees here is you can play a massive part in this as well. So yes, if you're here, make sure you take a look at the Impact Zone. Let's watch the showcase.

(presentation)Welcome back here to the studio here at Cisco Live Barcelona 2020. I'm really excited about this next segment. We're going to be talking all about Cisco Security. And to help me do that, I've got John Maynard, our VP of Security Sales. Hi, John. How are you?

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## PRESENTATION

**John Maynard;VP of Security Sales**

Hey, Nish. Great to be here.

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## QUESTIONS AND ANSWERS

**Nish Parkar;Cybersecurity Communications Manager**

And Wendy Nather. You're the Head of the Advisory CISO here at Cisco Security, Previously Duo, right?



**Wendy Nather;Head of Advisory CISOs, Duo Security**

That's right.

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**Nish Parkar;Cybersecurity Communications Manager**

So how are you both doing?

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**John Maynard;VP of Security Sales**

I'm doing great. It's amazing to see the buzz here at Cisco Live.

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**Nish Parkar;Cybersecurity Communications Manager**

As always. So John you -- I think it's fair to say you spend a fair amount of time on planes, traveling around the world, meeting lots of different customers. So what are the key things that keep coming up time and time again?

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**John Maynard;VP of Security Sales**

So I think the key thing is the security has moved from being the traditional blocker of the business moving fast to security being the enabler to the business. And so whether you think about whether it's the fourth industrial evolution, whether it's digitization, security needs to move with the speed of business. The business is moving quickly, as evidenced here at Cisco Live. And I think the security professionals and the CISOs that we speak today have moved to be how do I enable the business? How do I work with the business? And how do I work lockstep with the business to drive digitization at speed and at scale. It's fantastic.

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**Nish Parkar;Cybersecurity Communications Manager**

And Wendy you've got some first time experience as a CISO. So tell us a bit more about what -- have you got anything to add there? About your own experience as a CISO and the challenges that you faced in the past?

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**Wendy Nather;Head of Advisory CISOs, Duo Security**

Yes. I mean, absolutely. One of the things that is coming forward is the consumerization of IT, which really is driving the consumerization of security. People are no longer willing to put up with blocking security models, like the ones you talked about. They won't settle for an authoritarian model. We have to move towards collaboration with the partners that we work with, our supply chains, the people that we serve and that they want a better experience. They want a consumer experience with their security.

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**John Maynard;VP of Security Sales**

Absolutely.

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**Nish Parkar;Cybersecurity Communications Manager**

We've heard a lot about customer experience, consumer experience. Another key word that I keep hearing is innovation, right? So in Barcelona, all around the world, we have a massive network of innovation centers, and you guys were at an event at the Barcelona Innovation Center on Monday. So tell us a little bit more about that event.

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**John Maynard;VP of Security Sales**

Yes, I think what's really cool, Nish, is we're building these Co-Innovation Centers around the world. And these Co-Innovation Centers are critical for how we develop in IT, but also in cybersecurity. So we launched the first ever cybersecurity Co-Innovation Center in Milan, in Italy, last week, key noted by our very own Chuck Robbins, which is fantastic.

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**Nish Parkar;Cybersecurity Communications Manager**

What's actually in the Innovation Center?

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**John Maynard;VP of Security Sales**

And the Innovation Center is all about how we can work with customers and partners to codevelop solutions to collaborate as an industry. A lot of the problems in security have been -- we don't collaborate as an industry, we don't share best practice. So these Co-Innovation Centers are all about how we bring that to our partners, to our customers, and co-develop and co-innovate together, which is how we move the industry forward.

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**Nish Parkar;Cybersecurity Communications Manager**

Amazing. And Monday's event specifically here was off-duty for CISOs, [to network] right? So what were some of the key takeaways from the event on Monday?

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**Wendy Nather;Head of Advisory CISOs, Duo Security**

Well, we had these Chief Information Security Officers coming into the Barcelona Co-Innovation Center, which is in a beautiful restored 19th century textile factory. It's just gorgeous. And the great thing about bringing CISOs together is they know they're not alone. So we had a lot of stories shared and a lot of tips shared about how to approach security. And everybody came away saying that they learned something innovative, and they found new peers to talk to.

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**John Maynard;VP of Security Sales**

And I think the overwhelming feedback to that point was around trust and transparency in a group that are trying to solve the same problems together, and it's easier if we can do it together in the forum, the Co-Innovation Center. And that trust and transparency was critical.

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**Nish Parkar;Cybersecurity Communications Manager**

So we're going to head into the innovation showcase shortly. So we can learn a bit more about the Cisco Security, but do you have any insights or top tips that you can give us before we head in. What's new and up and coming with Cisco Security?

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**John Maynard;VP of Security Sales**

So I think Liz Centoni and the keynote speech was a great example where we're extending security into the other architectures of Cisco. So IoT security and OT security coming into the IT domain. And how we're solving that with Cyber Vision as an example, the visibility and control and response. It's just another example about how we're embedding security into the other architectures of Cisco.

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**Nish Parkar;Cybersecurity Communications Manager**

And so if you were to speak to a customer, anyone that's listening out there right now, what are some of the top tips and recommendations when any organization is thinking about their security approach?

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**Wendy Nather;Head of Advisory CISOs, Duo Security**

The first thing I would really start with is Zero Trust. It's a model that we've been talking about for at least 20 years, but John Kindervag came up with a catchy title for it, Zero Trust. Not everybody likes that term, but what it really stands for is using least privilege and segregation, separation of duties, to step up the level of security inside your enterprise as well as outside. So that they're the same. And what that ends up doing is that if you are authenticating and securing everything consistently, your users are happier too because they know what to expect and they get a seamless experience.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. I think you've set us up perfectly, Wendy. We're now going to head out into the World of Solutions, the security booth. That's where David is. David, you've got Jason, right, who's going to show you -- show us all a Zero Trust demo.

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## PRESENTATION

**David dela Cruz;Commercial Account Manager**

That's absolutely right, Nish. I'm standing here in the World of Solutions in the security booth, and it's great that you were just talking about Zero Trust because that's exactly what we're here to learn more about. So I'm joined here by Jason Wright. He's a Senior Product Marketing Manager at Cisco. Jason, thank you so much for being on the show.

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**Jason Wright;Sr. Manager, Global Field Product Management**

Thanks for having me. Appreciate it.

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## QUESTIONS AND ANSWERS

**David dela Cruz;Commercial Account Manager**

So Jason, I've heard you're the man to talk to about Zero Trust. What have you got to show for us today?

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**Jason Wright;Sr. Manager, Global Field Product Management**

Well, we've got lots of people that could talk about Zero Trust. That's a very hot topic for sure. But I've got a few different things that I want to show you and talk about today. Obviously, this is a really important evolution in security, and we're changing the way that we approach security by addressing both the workforce, which is our individuals, our people, the employees within a company for Cisco, that would be me. Also the workloads, which are applications, right? Those could be both on or off of the physical network. So we're used to having things on the data center, but we've got hybrid cloud environments, a lot of things moving up to the cloud. So we need to protect those workloads in those applications wherever they are. And then finally, the workplace. So this will be -- what you would think of as the typical infrastructure, getting a little bit more physical, but the segmentation to make sure that you have the right people going to the right places, is absolutely critical.

So what we built for a total Zero Trust solution is an architecture and a system where we use multiple technologies. So let's start with the workforce. That's the individual employees, like myself for Cisco, and we are using Duo throughout our network here at Cisco, and let me show you how it works from a multifactor authentication perspective. If you want to make sure that you've got the right people going to the right application on the right device, this is the product that will do it. This will challenge you. If you're going into an application, when you click sign in there, and it'll say send me a push or you can enter a password, and this will send it straight to your mobile device, where he says you have a login request, and then you just grab on to that. And here, you can approve or deny, and you can see what application and where it's coming from. Once you've approved, then you're allowed into your application and off you go. So this is something that we've even rolled out within Cisco, and now we have multifactor authentication into our VPN and into our different applications that we use as Cisco employees. So this is us eating our own dog food, if you will.

So let me talk a little bit more about Duo. And you can see the dashboard, but they've also got some really great functionality that they've rolled out, introducing multi-device management, right, MDM partnering with Microsoft to help out there. We also have a new functionality around device health checking. So that's been great. And AMP integration, integration with our advanced malware protection suite where if we find an endpoint that has been violated or has malware on it, we can force a reauthentication challenge to prevent that malware from getting that cool information that it's probably trying to access. So that is all the workforce. That's one aspect of Zero Trust security. Let's talk about the second one. That is the workload. So now we can go into Tetration. Tetration does a great job of getting very granular into your different applications that are running, whether they're on-premise or in the cloud or via a hybrid environment. And here, you can see different aspects of the application and their dependencies. Here you can see what traffic is going where, who has access rights. You can set policies, allow or deny. And you can have all kinds of information about the statistics and enforce your policy there. So this is a great level of visibility, number one, and to -- what applications are you using? What are they doing, both north, south, east, west? And being able to control and set your policy and visibility about what's going on there, okay? So that's the workload.

Your applications, wherever they are, we can get very granular into that. Finally, I want to talk about the workplace. This is the actual segmentation of the network. We talk about this a lot. There was recently -- or not be a little bit older, but we've talked about that use case where people are able to get into other parts of the network through [easy parts], right? We had a thermometer and a fish tank in our Las Vegas casino that was an IoT device and that allowed people in to get to the list of the big whales, the big VIP customers. So with proper segmentation, you could block that access, and that's what we're talking about here with DNA Center. This is also very important from an IoT perspective, when you talk about IoT devices, and that's why we've also rolled out this week here at Cisco Live, the Cisco Cyber Vision technology that's working with IoT devices and communicating information into ICE and DNA Center.

So here from DNA Center, I can set my policy of to and from source and destination and that is pushed down into ICE, where I can see actual users and devices and groups going to different places. And now we are enforcing the access and authorization throughout the network infrastructure. So now we're using the network as the enforcement mechanism endpoint here. And so that's kind of the holistic perspective when you talk about Zero Trust security. It's not just one thing, it's not just one way to do it. It's actually multiple technologies that are working together as a solution. Cisco does a great job of bringing these together and providing that solution for our customers to protect the workforce, the workload and the workplace. So that's what Zero Trust is all about.

**David dela Cruz;Commercial Account Manager**

Amazing. I can tell you're very passionate about the subject, Jason. And I've heard that you're also a presenter and if people want to find out more, where can they go?

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**Jason Wright;Sr. Manager, Global Field Product Management**

Well, we have a couple of different places. We could check out our Zero Trust portion of the website. But I wanted to also let everybody know that if you want to have the ability to see some more of the videos, we do a lot of those, check out [cisco.com/go/threatwise](https://cisco.com/go/threatwise), and we can see the ThreatWise TV, and we get into more detail about this and all of our other security technologies as well.

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**David dela Cruz;Commercial Account Manager**

Perfect. Thank you so much for your time.

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**Jason Wright;Sr. Manager, Global Field Product Management**

Thanks for having me.

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**David dela Cruz;Commercial Account Manager**

And I think we are heading back to Nish in the studio. Back to you, Nish.

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**Nish Parkar;Cybersecurity Communications Manager**

That's right. Thank you, David, and thank you too Jason as well. What a great summary of everything to do with Zero Trust. We're going to head out now to Ash's innovation talk about making security easier and refining the [grind]. Make sure you don't go away because when we come back from this talk, we're going to have a customer here with us in the studio, bringing all of this to life for you all. So enjoy the innovation showcase and see you straight after. Enjoy.

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## PRESENTATION

**Unidentified Company Representative**

Hello, everyone, and welcome to the innovation talks theater. My name's Toby, and I have the pleasure of being your host today. And a big welcome to everybody. I'm glad everybody made it out to Cisco Live 2020. There's a lot of us here. But together, we are building the bridge to get you where you want to be, so you can make anything possible. And here at Cisco Live, you'll learn new things, be inspired and create the path to endless opportunities. Now we'll be showing 14 sessions here in this theater, where we will inspire you, show you our latest solutions, innovations and, of course, best practices. Now today, we're joined by Ash Devata, Head of Products for Cisco's Duo Security and Zero Trust. Ash joined Cisco through the Duo Security acquisition in 2018. He was the VP of Products at Duo and helped the Duo product grow from a few hundred customers to 20,000-plus customers today. Prior to Duo, Ash was at RSA, among other companies, working across various security domains, including data loss prevention, governance, risk and compliance, security operations and key management. In this session, Ash will talk about how to get more security value in an easier fashion. He'll cover how Cisco is innovating to enable you to deploy and manage security with minimal [calls] and overhead. Please give a warm welcome on stage to Ash Devata.

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## Ash Devata;Head of Products, Duo Security

Thank you, Toby. Hello, everyone. For the next 30 minutes, we're going to talk about how we at Cisco are innovating to make security easier for you. Now I've been in the industry for about 15 years now and security is a hard job. As a practitioner, you're always trying to catch up with the adversary of the attacker. An attacker finds a new way to compromise your infrastructure, you're catching up on reading about that threat? How do you apply patches? How do you actually catch up? So a lot of us think our #1 enemy in the industry is the adversary, but that's actually not true. And it's like that saying, I met the enemy and it's us. So the enemy #1 in cybersecurity is actually complexity. Complexity in terms of the threats you need to go after, the processes you need to set in place to understand those threats and put remediation plans in place, complexity in terms of end user workflows. A lot of times you expect a lot from your end user. You expect them to create a unique password for every application, and they use dozens, if not hundreds of applications. You expect them not to click on a phishing e-mail. It's a pretty cute cat video. I want to click on that.

But as IT, you expect me not to. So how do you reduce the kind of stuff you're asking from your end user? How do you make security easy? So today, we're going to talk about how Cisco is helping organizations simplify security. And it falls into 3 main buckets. The first one is around simplifying the end user experience. How can you make security not be a friction for end users, but just be in the back end. It's like seat belts in a car, it's not a friction. You're just used to it -- or airbags in a car. They come in when you really need them. Otherwise, they're not in your way. The second thing is how do you make security easy for practitioners. How can you simplify IT operations? Make sure you're not spending money on dozens of vendors or spending money on a lot of security analysts to understand threats. I'm going to walk you through 3 specific examples that came out in the last few months from Cisco that help you in this theme. The first example, or innovation number one, is around multi-factor authentication. It is a basic security control everyone should have. This is the #1 threat vector, attackers compromising user credentials and thereby entering your network, entering your applications.

And MFA is a very strong controller can -- helps you with that. How many of you have MFA deployed across your organization? Quite a few, less than like 20%. The rest of you should definitely think about adding MFA. In the old world, MFA was pretty hard. You had to ship tokens. You have to install on-prem components. You have to build custom connectors. But these days, you can get up -- MFA up and running in less than 5 minutes. So definitely consider this as the immediate project you can work on because it significantly reduces the risk. For those of you familiar with Duo, Duo offers a multi-factor authentication product. It's all cloud-enabled. We support different forms of authenticators, all the way from biometrics, push notifications, FIDO-standard tokens, all the way to delivering a onetime pass code through SMS. But the key innovation is not about MFA. MFA is pretty easy to use when you think about it from Duo. It's pretty easy to deploy. The key innovation I want to focus on is how are you taking advantage of MFA to solve the problem around endpoints, the endpoints that your end users are using.

These can be the mobile devices, IOS, iPhones or Android devices. These can be Macs. These can be Windows machines. And these can be the devices that you are giving to your end users and managing fully managed corporate-owned devices or on the other extreme, devices that the end users bring to the organization, BYOD, bring your own device. Because Duo is in the path of access, it can see every device the user is using to access your corporate network or applications. And at the time of access, we do analysis on the device without any agents requirement. We talk with the back end, if it's a managed device, to understand more about the device. And based on that, we can enforce a policy. And I actually want to show you a live demo that we set up for you to show how the workflow looks like. Can you move to the live demo, please? So what you see on the screen here on the right-hand side are a bunch of applications we support. On the left-hand side is actually my phone. I'm showing you my phone live. And I hope I don't get any text messages right now. So what I want to show you is generally the -- how the end user experience is.

Let's say you're logging into Office 365, a very popular application. I just type in my username, password, which I buffered in a copy and paste. I say log in and now you see with the prompt for the end user, explaining the end user that's 2 FA or multi-factor authentication is enabled. And a bunch of options are given to the end user, authenticate using push, a phone call, a passcode and so on. In this case, I'll select a push. And on the left-hand side, you should see a push notification come to my phone. And I'll click on the notification, it opens up the notification, it's telling me that Ash is logging in from Spain. We get a location detail for the country level, but not a city level because getting a city level geolocation violates the GDPR policy. So we take a lot of care at this level of design on what data we capture, what we share. And if I did not initiate this authentication, I actually have a choice to say it's either a mistake or fraudulent. Let's see what happens if I say it's fraudulent. It actually blocks me on the right-hand side. So if you think about it, how this is going to work in your organization.

You are right now with this deployment, enabling all your workforce, all your employees to actually be first responders when a threat is happening. You are enabling the employees to complain or send a notice to the security teams that something wrong is going on. And this signal can go to the IT admin or can go to your SIM platform, and you can use that for your soft operations. Now let's go try this again. In this case, I'll just not -- accept the authentication request instead of blocking it. So on the phone, you'll see that I get a notification in a few seconds. And again, the notifications are sent through the cloud directly to my mobile device. I think I'm off the network right now. Murphy's Law. Oh, I did not click push, no wonder. So now a push notification should be coming to my phone, there you go. And I'll open it up. This time I'm going to approve. And if I'm logging into a more sensitive application, you can set up a policy to require biometrics. So you can step up the authentication based on the risk of the application. And what if my device is not secure?

What if my browser is out of date? That's a significant risk depending on what I'm trying to access. So I downloaded Firefox, a really out of date version of Firefox. Don't tell this to my IT team because I'm not supposed to do this. And let's see what happens when I log into Office 365. So same device, same username and password, I log in and something interesting came up, the orange color banner. It's telling me that my device is out of date by more than 12 months. It's trying to tell me something. It's not creating fear. It's not a big alert symbol. It's not red. It's not in the face. So you're making security more accessible, usable, not fearful. But if I'm like a typical end user, I'll just say, whatever, I don't want to read that, just send me a push notification. And once again, a push notification, I can approve. Again, I get a push notification. I approve and on the left-hand side, you see that I'm getting into the application, but the system is warning me that, hey, your machine is out of date.

We strongly recommend you update your software because it's causing a risk for the organization. Again, it's not in the face. It's helping the end user get educated. But again, I'm busy. I just want to get to my Office 365 portal. I say skip, I'm in. But if you think about what just happened, the system recognized that your Firefox is out of date, but it warned the end user, but it let the end user log into Office 365. Logging into a cloud application using an out of date browser, it's kind of bad, but it's really not the end of -- from a security program perspective, it's not really, really bad. But what if I'm using the same browser to log into, let's say, my engineering repository, where we have our source code. That's a much bigger risk. Again, same device, same username, same browser. And let's say my engineering network is segmented using Cisco VPN, or Cisco ASA. I click on this, I type in my username and password. And in this case, you'll see that I was completely denied. And again, the design aspect of this took hundreds of iterations for us. We're not putting a red alert based on the user. It's all based on the research and the feedback we got from customers. You don't want to scare your end user. You want your end user to actually read and act in the right way. So we tell the end user that the system is out of date and we explain what they should be doing, and we explain them the Firefox is out of date and how to update. So that's the end of the demo.

And as you saw in the demo -- I should get my clicker. As you saw in the demo, it's multifactor authentication, but it's also analyzing all your devices. We can identify if a device is managed or unmanaged. We can identify if a device is jailbroken or rooted, if it's got screen lock enabled, if encryption is enabled. And all this is done without installing any agents. All this is done by hooking into the OS-level APIs that the big vendors Apple, Google and Microsoft provide. We actually have a customer story, TAJCO Group. They make this really awesome exhaust pipes for most of the automobile brands out there from BMW, Audi, Volvo and so on. So see the story and see what the customer has to say. Please play the video.

(presentation)

So thanks to TAJCO, we're getting a lot of feedback from them, and thank you, TAJCO for being an amazing customer. So that's the innovation number one, how do you use multifactor authentication, not just to secure your users, but also get visibility into your endpoints. Innovation number two is around the second biggest threat, endpoints. Windows machines and Macs, especially. No matter what you hear from the industry, the threats from iPhones and Androids are relatively low, mainly because Apple is a closed ecosystem. That's pretty good. The latest versions of Android are way more secure than they were in the past. And these service providers and the device manufacturers are good -- putting in good security controls for Android devices. But the lowest hanging fruit is around Mac and Windows machines, especially Windows for attackers. So this innovation is about how do you take advantage of your existing endpoint security products and get more value from an access perspective. Let's see what that is about.

There's a product called advanced malware protection from Cisco. AMP, short form is AMP. AMP for Endpoint. This is a world-class endpoint security agent. Gartner calls it EPP, endpoint protection platform. It detects if you have malware or antivirus on your machine. So it's scanning files. It's looking at the traffic, so it makes sure your machine is malware free. The second part of this agent is EDR, or endpoint detection and response. In



case something slips and your machine gets compromised, how do you detect that it's compromised? So EDR is quite sophisticated. It's looking at all the network traffic from the endpoint perspective. It's looking at the processes happening on the machine. And it's got a machine learning model that kind of detects that something bad is going on in the machine and alerts the IT admins about it. Those 2 together is a single agent, and we from Cisco had it for a while. That's not the key innovation. It's more about -- the innovation is more around what do you do once you know that this specific endpoint is compromised. The traditional workflow is it sends an alert to the IT admin or a SOC analyst, they try to gather the context, who is actually using that machine? Who is that user? Is it someone I really care about? Or is it just a contractor kind of playing with it? And they don't really have access to a lot of infrastructure.

They want to understand all that. And based on that information, they want to take a remediation step. And all this takes time, and all this assumes that you have a dedicated SOC analyst. So a new integration that we built between Duo and AMP can actually automate the entire process. It significantly reduces your time to respond. So what we're trying to do here is as soon as AMP for Endpoint detects that your machine is compromised, it tells Duo that, that machine is compromised. And then Duo immediately enables a policy to block that specific machine from accessing any net new corporate application. And all that is happening in a seamless fashion. You don't need to do any custom integration. You don't need to do an endpoint level integration. Irrespective of how many users you have, a few hundred or a few thousand or tens of thousands, there's only one simple integration from the console of AMP to the console of Duo. You're literally taking the API keys of credentials from AMP for Endpoint, you're plugging them in Duo and then you set up a policy, and that's it. You're enabling the automated workflow. How many of you are part of a SOC or you have a SOC program, security operations center? So a few hands.

So as a SOC analyst, you live by this every day, you always want to automate a response procedure, and this is one of the ways it can help you in your workflows. It also creates log information from this, and that log information can be sent to your SIM or whatever data link you have in the back end. So it's not only immediately blocking it from [automated] fashion, it's also providing all the log data for remediation. And you can also go into the Duo console and get a history of the behavior of that endpoint and the user. You're not blocking the user, you're blocking only the endpoint. So that's the innovation number two, how do you automate endpoint response when you know the endpoint is known to be infected. And the last one I want to talk about is specific to SOC use case. There's a new fabric or offering from Cisco called a Cisco Threat Response. And as the name suggests, it's all about how do you respond to threats, every day, when you have hundreds or dozens of them coming in from different products.

If you're a SOC analyst, typically, your job falls into 2 buckets: one, you're getting a lot of alerts from different products you have. Firewalls; endpoint detection software; from your IDS, intrusion detection systems; from your web secured gateway; e-mail secured gateway. Every security product out there is telling you that there's something wrong going on. I see bad traffic, there's something bad, you need to pay attention to. And at a SOC team, you have a very small set of security analysts, and they cannot humanly go through all the alerts. And they typically want to answer some basic questions. What exactly is this threat? What is this alert about? What is the impact for me? And are we seeing the same threat from other places in the organization. As an example, you see a threat indicator or a threat alert from endpoint tool, you want to see if the same threat exists on the e-mail side or the web side. And today, it's a pretty -- bit of manual process. You have to go to different systems, go through different consoles. What CTR allows you to do is plug into all the security products that are creating alerts for you and combine all that information.

And a key differentiator that -- there is we're not pulling all the data, but just putting APIs for all the data you have there. So we're not creating a net new data lake for you for all the threats. Instead, what we're doing is providing you a modular way to connect to AMP for Endpoint, to connect with the firewall system, to connect with Umbrella and so on. So if you find a new threat, let's say, e-mail secured gateway tells you that it's seeing a specific type of malware on Ash's machine, I'm downloading an e-mail. You can right click on that alert from Cisco Threat Response and see what other products found the same threat. And it'll show you, from a differentiation perspective, all those threats as red color. And then you can investigate what the security community is saying about that specific threat. So you get the intelligence from Talos or third-party feeds all into the system, same console. So for a SOC analyst, you can easily automate a bunch of your workflows and increase your response time. In the industry, the average is about 100 days by the time -- if day 1 is when you got attacked, 100 days plus is when the company actually realizes that they got attacked.

So the attacker is in the organization's network without being discovered for more than 100 days. That's ridiculous, right? Your house is getting robbed and you realize that you got robbed after 100 days. So the whole focus is how do you reduce the dwell time for the attacker and make sure you're responding in a faster fashion. And we want to enable you to do that without hiring more analysts, without buying more tools. So this specific

product, Cisco Threat Response, is offered for free if you have any of Cisco's other security products. If you're using e-mail security or endpoint security, CTR is just available as a new module for you. So we actually have a customer called NHS that was willing to share the story with us, and we made a video with that customer. Can you please play the video now?

(presentation)

If you missed the highlights of this, they have about 50 medical facilities they need to secure, lot of sensitive data, health care information. Their team is 3 people. And it's not just security. They also own the IT infrastructure. So they need tools like this that automate the workflows because they don't have time to go after every threat. And that specific innovation, in terms of reducing the time to respond, automating the workflows made Cisco Threat Response one of the fastest-growing products in our portfolio. We launched this less than 18 months ago. And today, we have more than 7,000 customers using it in production. So it's a pretty amazing product. I would strongly recommend you to try it. And one of the key things today is all the products we talk about today, Duo, AMP for Endpoint, Cisco Threat Response, they're all cloud-based, which means there's no on-prem component.

And you can start using them, just have a trial for 14 days or a full month and see how they can help you in terms of your existing workflows. So just to summarize, we're working hard to simplify the end user experience for you. We want you to think of all your end users as they're on your side, helping your organization be safer, not on the other side where you're trying to see -- competing with them or they're not on the other side of the IT. The second thing, we're trying to simplify security operations. We understand there are too many vendors. There are too many products. So we're doing a lot of native integrations all through APIs so that you can plug and play. So that's pretty much the end of the talk that I wanted to highlight today, and we have live demos on the solutions side, all the products you saw today are available for a full live demo and enjoy the rest of the show. Thank you again for attending this session.

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#### **Steve Multer;Chief Storytelling Officer**

And welcome back to our live broadcast here from the Cisco TV studio, coming to you from the hub here right next door to the world of solutions at Cisco Live Barcelona 2020. What an incredible day it's been. I hope you have been having half the fun that we've been having here at the show. And if you haven't been having half the fun or maybe it's a little more than half, get down here to the conference so you can be a part of it with us. My name is Steve Multer. I want to remind you to keep reaching out to us, utilizing social media #CLEUR. We want to hear from you, and we will keep responding back to you. We have just come out of our final innovation talk of the day, our own Ash Devata, Head of Products at Duo Security. We heard so much about what Cisco's user-centric Zero Trust security platform is all about.

Duo was so powerful, it's a more recent addition for us here in the Cisco platform, but we are protecting access to all of that sensitive data at scale, all users, all devices, all applications and it's a great launch into our final event here of the day and some of our final conversations. And I've got the best person here to continue it -- the security conversation with our own Ben Monroe, security -- Senior Director of Security Marketing with us here at Cisco. You and I have had, what? About half a dozen opportunities to talk with one another over these different events.

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#### **Ben Munroe;Director of Product Marketing**

If we're not showing our age, sure. I'll go with half a dozen. It's good to see you again.

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## **QUESTIONS AND ANSWERS**

#### **Steve Multer;Chief Storytelling Officer**

We don't show our age, we're feeling young, we're vibrant, we're energized. If this event isn't going to do it for us, I don't know what is. Thank you. I know you've had a huge day already, and I'm so glad to have you here in the studio with us. So Ben, we've really -- if you think about it, we've reimagined the network. We've changed the way that business is working. Now our Cisco platform is doing that really good heavy lifting for security,

making sure that every solution works together with every other solution as a team when it comes to security. We want them to learn from each other and listen and react in coordination. So let's talk a little bit about what we just heard from Ash, but really what we're doing within the security platform that excites us today.

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**Ben Munroe; Director of Product Marketing**

Sure, Steven, yes. I mean there's a lot going on, right? And I think this idea that you were talking about of security products working as a team is incredibly important. And one of the definitions of a platform is that the various control points, the various layers that you have that contribute, have to work together. They have to learn from each other. They have to get smarter because of what they learn. They have to make things easier. They have to give the teams that operate them time back to do important things like threat hunting, policy harmonization. All the work they want to do, but they can't because they're spending their days fighting threats.

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**Steve Multer; Chief Storytelling Officer**

Absolutely. Security must feel to you a little bit like the Superstar right now. I don't know that there's anything we talk about on the technology side and the Cisco delivery side that doesn't also incorporate elements of security. How do you do a good job of really honing in and making sure that everybody understands the security aspects of everything that we offer here at Cisco.

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**Ben Munroe; Director of Product Marketing**

So I think it's really about getting out of the product level discussions and talking about the outcomes that we're delivering for our customers. The outcomes that they really want. You think about the Chief Information Security Officer, and we're going to get to meet one of those in a short while. We're looking at senior executives in companies who want to simplify the experience of security, the way they do it, and the way that it's experienced by their organization. They want to help businesses accelerate. They want to help move to the cloud. They want to help free users to become mobile. They want to help with the digital transformation. And they also want to help future-proof. And they want to make investments that are good for the next 5, 10 years. Those are not things that are going to have to get redone. So you've got these extremely senior, extremely strategic thinkers. And it's our role. If we're going to be the most trusted partner, it's our role to meet them where they want to be with a platform that helps deliver those experiences. Frankly, on a personalized basis across the different people in their team.

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**Steve Multer; Chief Storytelling Officer**

It's a really exciting time for people, I think, because the opportunities are more expansive than they've ever been before. I don't know when we've ever had such a comprehensive amount of elements available to us in technologies and capabilities. But of course, the threat landscape continues to extend with each different element that we bring on board within the organization. What do you think is so unique about what we offer here at Cisco with regards to our platform? Everybody offers great security, go to any event, go to an RSA, go to a blackout, and everybody says, we offer the best security out there. What are we doing here at Cisco that's so unique?

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**Ben Munroe; Director of Product Marketing**

Frankly, the number of vendors there are at those shows you mentioned, who are all saying, I have the panacea. I've got the single bullet. That's part of the problem and reducing the confusion that is part of our job is in the security industry. But your question about what's different? I think we're combining 2 really powerful elements in our platform. The first of those is what Ash was just talking about, trust verification, continuous trust verification across the workforce for the users that you and I are coming into work every day, across the workloads, all these applications and then residing in a multi-cloud environment. And in the workplace, the physical location we're at. So that's the first thing. Trust verification on a continuous basis.

Second element is threat detection. We can't lose sight of that. And we've got Cisco Talos, right? Hundreds of some of the smartest researchers on the planet, who are unpacking all these instances of malware that they find, who are reverse engineering. Who are really understanding what the bad actors are doing so that we can help to defend, and writing protections into our products that are then pushed out at scale. And platform-level advantages and platform-scale approach means you're not updating piece by piece, you're actually giving people a consistent layer of protection, whether it's on e-mail, on web, on the network or the user and device level. And that's where Cisco excels.

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**Steve Multer;Chief Storytelling Officer**

What are we hearing from our customers, like you said in a moment ago, we're going to bring up Michael, one of those customers. But what are you hearing specifically as you walk around an event like this, and you get the chance to meet with our customers, what are they saying to you?

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**Ben Munroe;Director of Product Marketing**

Sure. Some of the things we hear from our security customers are regular and are -- I want to say, depressingly familiar because the security industry challenges don't go away. Threat landscape gets more and more dangerous over time. Bad actors are better funded. Nation states are better funded and a very agile about the ways they can attack. They've got security infrastructure systems like ours that they test their products again. They're an extremely versatile and agile group of people. But the talent shortage is a perennial problem that is actually out of control. Recent data has been published that say there's 4 million unfilled jobs in cybersecurity worldwide. And there's only about 1.5 million cybersecurity professionals worldwide anyway. So how can that equation balance out. And what it means is we need to drive our platform into more places, more organizations at more size so that you can do more with your security. And you're not reliant on trying to hire more people because there is no one to fill those 4 million jobs. It's untenable now?

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**Steve Multer;Chief Storytelling Officer**

Absolutely. The work that you Ben, are doing along with the entire security here at Cisco is really such yeoman's work. And we're going to come back. We're going to talk a little bit more about it. The #1 threat -- you just mentioned the threat vector and how it continues to grow and expand. The #1 threat continues to be e-mail. And before you and I get a chance to continue, we're going to actually head out to the show floor. We are going to go over to one of my favorite people who I get an opportunity to work with quite a bit at a lot of different events, Jason Wright. Our own David dela Cruz is out on the show floor right now with Jason, our own threat wise TV host. Can you guys hear me out there?

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**David dela Cruz;Commercial Account Manager**

Yes. Absolutely, Steve. I'm still down here at the World of Solutions in the security stand because there's still just so much to learn about security. And since we had such a good time with Jason last time, we've asked him back on. Now, Jason, thanks again for joining us.

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**Jason Wright;Sr. Manager, Global Field Product Management**

Thanks for having me, again.

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**David dela Cruz;Commercial Account Manager**

Not a worry at all. As we all know, despite the best efforts of the collaboration team, e-mail is still a massive communication tool and remains the #1 threat vector for security compromises, I suppose. So what has Cisco got in the toolbox, so to speak, to help deal with that problem?



**Jason Wright;Sr. Manager, Global Field Product Management**

Well, several tools in the bag for sure. I'm going to talk about the most important one, which is our Cisco e-mail security technology. Now this can be deployed either way, either in the cloud as a cloud-based service or as an appliance, if you have an on-premise type of deployment with exchange. So either way that you want to roll out your e-mail, we've got you covered, and we have security technologies that are there, inspecting all of those e-mails come in, all of the traffic that gets generated from content in the e-mails and making sure that we keep our users safe. So the first thing that I want to talk about is a recent release that we've had that showcases some new features and functionality. So one of these is advanced phishing protection, right? And so phishing is probably one of the biggest threats when it comes to the #1 threat vector. So we have integrated our advanced phishing functionality into the product now. So instead of having to roll out additional technologies, this is built in, so you don't have to worry about deployment or management of any additional functionality. So we continue to add functionality into these products to keep them very well rounded and protecting that #1 threat vector.

Now the additional aspect of this is that we can start to see what's inside the emails. So if there's an attachment that went by that got delivered to you in e-mail box, and we didn't know it was bad at the time but we learn more information about it. Then we decide, wait a minute, that's bad. We probably shouldn't have let that file go to that user, we can actually reach back and pull that e-mail out of that user's inbox, whether that's O365 from a cloud or from exchange on an on-premise type of solution. So either way you want to deploy it, we have that functionality. It's kind of that retrospective detection. We've also put in some additional infrastructure improvements to be able to do all of this a lot faster so we can reduce that time to detect and time to remediate. Now the last thing I want to talk about here is that e-mail security is not just a product that you want to use by itself, it's part of a holistic ecosystem of your security technologies.

And as such, we want to make sure that it interoperates and communicates with our other security technologies. So if you look at the e-mail security management appliance here, you can see a lot of great information about what we've seen and how our policies work. But we also have casebook that carries all of the other information from all the other security technologies along with it. That's the beauty of what Cisco Threat Response is bringing to the table. So if I load what's going on with that particular e-mail here, we're running comparisons and correlating information from domains and IP addresses and files and users and where the e-mails are coming from and going to, to be able to see this entire view of everything that's going on here. So you have a beautiful view from multiple security technologies, web security appliance, your firewall, Stealthwatch, AMP for endpoints, all of these put together, it's platform-based approach that makes the difference, and that's what we bring to the table.

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**David dela Cruz;Commercial Account Manager**

Okay. Awesome. Thanks, Jason. I can see you're very passionate about the subject, but we've got a guest waiting in the studio, so we're going to get back to Steve and the customer perspective from there.

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**Steve Multer;Chief Storytelling Officer**

Thank you so much, David. Hey, by the way, David, if you're still there with me, if you can still hear me at all, tell Jason that he needs to send his hat back to the studio. I'm not going to accept anything other than the hat. I want it back here, just let him know. And I'll give it back to him at RSA, okay?

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**David dela Cruz;Commercial Account Manager**

No problem.

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**Steve Multer;Chief Storytelling Officer**

All right, cool. Thank you. We are back in the studio now. I've still got Ben Munroe here with us, but now we finally get to get down to the nitty-gritty and actually put all of this into application. Michael Jenkins is with us, CISO from Brunel University. So glad to have you with us. Thank you for being here in the studio.





**Mick Jenkins;BrickTech;Chief Security Officer**

Absolute pleasure, delighted to be here today. And yes, looking forward to this.

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**Steve Multer;Chief Storytelling Officer**

You are a little too far away from me, but that's okay. We'll be able to talk to one another. I want to start out with you on this because I want to talk about what your on-the-ground experience is like. We can talk about our security capabilities here at Cisco over and over again, it gets really exciting once they start to get put into applications. So let's talk about what your main challenges were and how Cisco has been able to help you begin to address those challenges?

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**Mick Jenkins;BrickTech;Chief Security Officer**

I mean, firstly, when I arrived at the university, kind of had a vision of what I wanted to design and build. And certainly, most of the roles that I had spent both in my military career and private sector career was all about capability development. And quite often, I was given a blank piece of paper, given a kind of mission. And then it was about thought leadership and how can we build something tangible. And for me, it was all about a unified cybersecurity platform with the right instrumentation, the right people, the right training, the right processes, and actually trying to get ahead of the game. Because when I arrived there, it was very much standard IT security, but of course, we're moving into an area of exponential threats. And we needed to really develop better capability in order to protect our assets. So our information and data assets.

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**Steve Multer;Chief Storytelling Officer**

So in terms of why Cisco, I was going to save that question for a little bit later. Let's just go ahead and tackle it right up here with front?

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**Mick Jenkins;BrickTech;Chief Security Officer**

Yes. No, it's a great question, and I went out to the market. I spoke with many, many different vendors, described my vision, my objectives where I wanted to take the university. It needed some innovative thinking. It needed some very critical friend thinking, as I called it, I needed a critical friend that I could trust. It would help me develop what I had in my mind. And in a sense, because I came from the intelligence community, I kind of new that I wanted compartmentalized intelligence, if you like. Nowadays, we call it Zero Trust environment. So I knew I needed to build safe data havens, have instrumentation that allowed me to detect, to mitigate, to monitor, to contain. And in effect, in my old world, that was what we termed actionable intelligence. And I'm delighted to say that when I got in the room with many different experts from Cisco. They were superb in helping guide the way that I could go about this, and we began to formulate a kind of road map and then it was really down for me to get the investment from the executives.

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**Steve Multer;Chief Storytelling Officer**

Sure, always one of the hardest things to do. I think you're going to be using this whole friend thing a lot in the future? Is it just me?

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**Ben Munroe;Director of Product Marketing**

No. I think the idea to be a trusted partner is one of the things that just keeps us going Mick. And one of the things that gets us going and a North star for us. That's great to hear. The one thing I'm interested in is why you mentioned the executives then. We just did a survey of CISOs worldwide, and it was reported that 89% of CISOs say that, that executive level buy-in is absolutely critical. So I wonder whether that's something that's easy for you to do. Or is that a difficult achievement inside of an organization like yours?

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**Mick Jenkins;BrickTech;Chief Security Officer**

I think every business, Ben is different. It's different environments, different executives, different styles with the Executive Board. And I think the kind of role of a CISO is to break through that and have a conversation and engage with the business in a way that you can show that security, if it's balanced proportionate, well designed, will give some value back to the business. And clearly, it was very important to me as I worked with Cisco, as we brainstormed this, it was very important that we became a business enabler. But actually, I wanted to take it a step or 2 further. I wanted it to become a business winner as well. And I think in the world [anyway], we've got different pots of data: personal data, high-end research data, the government and nation states either want to attack or in our case, our nation wants us to defend and protect it.

And commercially sensitive data. I think we're in a world now where the executive really do understand that they've got to kind of get ahead the game -- ahead of the game. And very interesting, World Economic Forum stating that cybersecurity is 1 of the top 2. So if that doesn't convert into Executive Boards, then I'm not entirely sure what is. But having said that, I think most Executive Boards take it very seriously. They -- you would expect it to be in the top 3, if not the top 5 strategic risks. And it's really then for, sort of, CISO and that engagement to steer the route and the path towards a better capability to develop and protect.

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**Steve Multer;Chief Storytelling Officer**

Absolutely, absolutely. I wish we had more time to talk. I cannot let you go without mentioning one thing for those folks out here on the screen, who have not had an opportunity to meet you. You were a defense intelligence officer, you write spy and forensic thrillers. You live this stuff, which means that Michael, who you've just heard from right now, if he is not the voice to help us tell this story at Cisco, I don't know who is. Michael, thank you so much. Ben, thank you for being here as well. We truly appreciate it, and especially here at the end of the day. I hope we'll get a chance to talk more. So in just a moment, we are going to come back, and we are going to do our first daily wrap show. We do this at the end of every day.

We get some highlights. We get some special announcements that we are here at the show. Before we get there though, we're going to take a very quick look at Cisco Threat Response. It's a key element of our integrated security application platform. It helps to automate integrations across our Cisco security products. Go ahead and check out this video, you're going to see us back right here in 1 minute, don't go away.(presentation)

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

So as you just saw there on the broadcast, we cannot wait for our closing keynote, in just a couple of days here. Richard is going to be with us, and I don't know if he's going to be flying around the pond. But at least, we'll be glad to have him here with us. What we're going to do now is something brand-new that we have not done before. We're going to go to our start-up of the day. Cisco investments is one of the leading active corporate VCs on the planet. And what we're going to do is introduce you each day to a brand-new start-up that we are so excited about here at Cisco, and that you can visit over in the World of Solutions to do that, we're going to go onto my buddy Zane Powell out in the investments village.

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**Zane Powell;Associate Sales Representative**

Thanks, Steve, my friend. And how are you? I'm fantastic.

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**Steve Multer;Chief Storytelling Officer**

I think we are still live here? Is that right? We are still live. My apologies.

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**Zane Powell;Associate Sales Representative**

Yes. We are live here at investment village.

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**Steve Multer;Chief Storytelling Officer**

You know what, I can't hear you at all. I think you are talking to me, but I can't hear you at all in my ear. My apologies.

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**Zane Powell;Associate Sales Representative**

You can't hear me, that's fine, Steve. Not a problem. Not a problem. So we're out here at the investment village, and this place is full of innovation. It's all about startups. And I'm super excited to bring our first startup of this series. I'm here with Mark Fieldhouse, who is from NS1. Mark, can you introduce yourself?

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**Mark Fieldhouse;NS1;General Manager EMEA**

Yes, sure. So Mark Fieldhouse. I'm the general manager for NS1 in EMEA. Great to be here.

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## QUESTIONS AND ANSWERS

**Zane Powell;Associate Sales Representative**

Fantastic, Mark. Thanks very much for your time. Now Mark, I'm thinking that NS1 had a recent investment by Cisco. Can you tell us a little bit about what you do and some of the problems that you're solving?

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**Mark Fieldhouse;NS1;General Manager EMEA**

Yes, sure. So as a company, we started about 7 years ago. And it's a real privilege, actually. We help to manage and automate some of the world's most trafficked internet and enterprise applications. And very simply, we do that by leveraging what's known as DNS, which is very pivotal in customer experience, edge computing and IoT use cases. So obviously, the partnership with Cisco is pretty pivotal in that strategy as well.

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**Zane Powell;Associate Sales Representative**

Fantastic, Mark. Now a little birdie told me that you've been doing some work with Cisco Umbrella, is that correct?

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**Mark Fieldhouse;NS1;General Manager EMEA**

Yes, absolutely. For us, the Umbrella integration is pretty pivotal because our customers are coming to us and saying, the service NS1 provides on-premise is fantastic. How do you integrate the security angle to that as well. That partnership with umbrella helps us to provide not only on-premise authoritative name serving, but to pass that to Umbrella to ensure that nothing that shouldn't escape, escapes the organization. So it's a very symbiotic relationship.

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**Zane Powell;Associate Sales Representative**

Fantastic, Mark. And I think that's what Cisco's all about. It's all about integration, it's all about partnerships. So look, what are your customers telling you? What are they really saying? What are the benefits that NS1 brings to them?

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**Mark Fieldhouse;NS1;General Manager EMEA**

Yes. So look, it's very simple. The buzzwords around edge computing and IoT use cases but fundamentally, it all comes back to automation. And I think if there's one key message it's doing a lot more with a lot less, right? We're a containerized platform. So our customers deploys and integrates things like DevOps, life cycles, installing and running networks programmatically is key for them. So much of the people coming past the booth here, that's a very common question for them.

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**Zane Powell;Associate Sales Representative**

Fantastic. And we seem to be getting a lot of attention here anyway. So look, someone's watching this and they're interested in finding more about NS1. What can they do this week at Cisco Live? Where they can go? Who can they come to see?

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**Mark Fieldhouse;NS1;General Manager EMEA**

Yes. So there's a couple of things. You can go to my colleagues at the Umbrella booth. But importantly, you come and see me at the NS1 booth. And if you've got use cases, you want to discuss if it's edge computing, IoT, data centers, cloud, by all means, my team will be happy to facilitate that.

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**Zane Powell;Associate Sales Representative**

Fantastic. Now you told me earlier, we actually had a chance to speak earlier and you told me that you did a presentation yesterday. So it would be great just to hear how did that go? What was the reception that you got at it?

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**Mark Fieldhouse;NS1;General Manager EMEA**

Yes. It's amazing. I did a presentation on edge computing, looking at some of the significant industries like streaming and gaming, and how you help facilitate probably some of the lowest tolerance users that you have in the industry. So yes, some great questions. Really good audience. Yes, fantastic opportunity.

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**Zane Powell;Associate Sales Representative**

Fantastic, Mark. Listen, thanks for your time. Really exciting stuff, and I'm excited to hear what the future has to hold.

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**Mark Fieldhouse;NS1;General Manager EMEA**

And I look forward to seeing everybody at the booth.

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**Zane Powell;Associate Sales Representative**

Now we are going to throw it back into the studio, where Steve is weighting on us.

**Steve Multer;Chief Storytelling Officer**

Thank you so much, my friend. I appreciate it. And I'm so sorry, I abandoned you in the first part of the conversation, but now I hear you loud and clear, you're looking spectacular.

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**Zane Powell;Associate Sales Representative**

Steve, I only forgive you because you gave me that hacker bear earlier on. That's the only reason, I'll let you off, okay?

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**Steve Multer;Chief Storytelling Officer**

I did. I brought him in an AppDynamics bear, for those of you who weren't tuned in at the time. Thanks, my friend. I appreciate it. I am really excited for what we're going to do in the next few minutes here in the live studio because I've got the human being who is really responsible for all of us being here at the show. I'm sorry to lay all of that on you, but it's just the reality. Wendy Mars is here with us, President of Cisco EMEAR. Welcome, and first up, congratulations.

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**Wendy Mars - Cisco Systems, Inc. - President of EMEAR**

Thank you. Isn't it fantastic?

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**Steve Multer;Chief Storytelling Officer**

It is. Right away, right out of the gate this morning at the keynote, you took to the stage and there was a very different feel for the show. It felt very personal. It felt very engaged. It felt invested. And you kicked off with a couple of things that I loved. That all of this -- we can build the greatest capabilities in the world, and we do, but it comes down to trust, and it comes down to integrity, making that reach out. And I think you really embody that.

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**Wendy Mars - Cisco Systems, Inc. - President of EMEAR**

And I think also, one of the things that's so important is our people. People here, if we look at this event, we have 18,000, which is the biggest ever. It's amazing. We're incredibly proud of that. And the teams here are not only making this event happen but all of our customers and partners who come and invest and work with us. We're incredibly proud. Without them, it wouldn't happen.

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**Steve Multer;Chief Storytelling Officer**

Without them. It wouldn't happen. It's interesting. We just had Michael Jenkins here in the studio, you were sitting out and watching. And he came to that as well. As one of our customers, on the CISO side, who we pay such close attention to, he talked about Cisco being a friendly support, something that he could really trust and get behind because we got behind him. It's that commitment, right?

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**Wendy Mars - Cisco Systems, Inc. - President of EMEAR**

Yes. And I think also, it's -- people will buy from people, and you need to feel as though you will be with that relationship through the good times and the challenging times and work together, and that's very much part of our DNA as an organization. And our customers appreciate that.

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**Steve Multer;Chief Storytelling Officer**

I love it. And I can feel it coming off of you here. It's very sincere. Talk to us about getting this event together. This is your first time running this particular event of having this under your leadership? What was the experience like?

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**Wendy Mars** - *Cisco Systems, Inc. - President of EMEAR*

The teams that actually set this up are incredible. They're the best in the industry. And I arrived here actually on Sunday.

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**Steve Multer;Chief Storytelling Officer**

You didn't get here till Sunday?

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**Wendy Mars** - *Cisco Systems, Inc. - President of EMEAR*

Yes. I got here Sunday. And we looked at -- we got this confidence in your teams.

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**Steve Multer;Chief Storytelling Officer**

Sure. Absolutely.

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**Wendy Mars** - *Cisco Systems, Inc. - President of EMEAR*

Got here Sunday and saw this setup, which clearly, it started but the speed at which all of the events is deployed is amazing. And the big part here, of course, for us is the interaction that people can have in the solutions area, in the World of Solutions, in the hub. But also some of the giving back activities, the building of bicycle and all of those things, which are amazing as well.

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**Steve Multer;Chief Storytelling Officer**

Absolutely. That corporate social responsibility is such a big part of who we are. I was out there talking to [Geeta] earlier at the front of the park, and I said, so much of what makes this really tick is who Cisco is at our core, it's the heart. We can talk about technology all day long. But it's why we do what we do, right? It's the old Simon Sinek idea. People don't necessarily remember what you tell them, they remember how you make them feel.

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**Wendy Mars** - *Cisco Systems, Inc. - President of EMEAR*

Exactly.

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**Steve Multer;Chief Storytelling Officer**

And I think that's very important for you, isn't it?

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**Wendy Mars** - *Cisco Systems, Inc. - President of EMEAR*

Yes, it is. And it's very important for me personally for us as an organization, and to be able to make sure that you can connect and that you can do more together. When you're able to really connect from a value standpoint because that's what people are looking for now more than just great



solutions, great innovation, giving back to the business and the business value to outcomes, but also really getting into some of those -- that value-based connection as well for the company.

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**Steve Multer;Chief Storytelling Officer**

Now that you're in this leadership position, where would you like to see this particular event go from here? What would you like to see us do over the next 2 or 3 years?

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**Wendy Mars** - Cisco Systems, Inc. - President of EMEAR

Well, so I'm not going to tell you where it's going to go next year because we are in a different location.

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**Steve Multer;Chief Storytelling Officer**

Well, we're not going to worry about location.

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**Wendy Mars** - Cisco Systems, Inc. - President of EMEAR

Which we will reveal on Thursday in the closing. But I think for us, it's all about -- if you look at we have the IT manager track that's running, we have 1,000 people that have joined that track. It's capped at a 1,000. So that's continued to grow, which is amazing. We have all of the different DevNet work, the -- all the certifications that are happening as well and the evolution there. So we'll continue to build on all of that capability. In addition, if we look at the ecosystem and the partnerships more broadly, all of that makes what we do even more impact-focused. We can drive the scale through that capability and relevance as well.

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

It's fantastic. Once again, I want to congratulate you for all of this. None of this is happening without you, and I'm just going to say that flat out, whether you believe it or not. It's not happening without strong leadership. I appreciate it. I want you to stay with me right now because we're going to -- thank you, for being here in the studio, but we're going to see you in just a couple of seconds here because we are going to roll to a highlights video from this morning's keynote, which was, in fact, kicked off by our very own Wendy Mars. Enjoy this tape, and we will see you back here live in the studio as soon as that's finished. Here we go.

(presentation)

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**Wendy Mars** - Cisco Systems, Inc. - President of EMEAR

You have come from all across Europe, Middle East, Africa, Russia and beyond to be here with us. And we're all here because we believe in technology. We are excited about technology, we believe that it provides answers to many of the challenges that we face on a daily basis.

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**David Goeckeler** - Cisco Systems, Inc. - Executive VP and GM of Networking & Security Business

All right. It's always great to be back in Europe. It's also really good to be back in Barcelona for the start of Cisco Live. We're going to start with the application, talk about the evolution of the portfolio around AppDynamics and what we've been doing. But I want you to really pay attention to this because there's going to be some surprising things that come out here.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

So as David said, applications over the past decade have moved from this role that they used to have of supporting our business to now playing a role where they actually are our business. We're being expected to support constant change across hybrid, multi-cloud environments. The new feature that we're introducing today is going to complement that by giving you a view on the front-end user experience, where the screens are that the user is actually seeing on the front side of their application.

This is the AppDynamics experience journey map.

It uses AI and machine learning in order to automatically map the journey our users are taking through the actual front-end screens that make up this application.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

But today, I'm excited to announce that we have new capabilities within Intersight, and it's called the Workload Optimizer.

So the first thing that you see when we launched the Workload Optimizer is a dependency graph on that left side. Each of those circles actually represent a different entity. What the dependency graph is saying is that, each one of these entities is dependent on something else or uses those resources.

Now the Workload Optimizer also has a new capability, which is a recommendation engine.

And that recommendation engine pulls together performance, efficiency, compliance constraints. It takes a look also at historical usage patterns.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

So it looks like you're actually pulling in all of the application topology data from AppDynamics.

You're joining it with other data that you'd collected from other elements in the infrastructure. And in this view, it looks like you're actually monitoring all the applications in the estate. So that looks pretty powerful, and it looks like you're actually optimizing across both public cloud instances and on-premise instances. Are you using machine learning to actually accomplish that?

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

We have to because we're pulling in massive amounts of information.

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**Scott Harrell** - Cisco Systems, Inc. - Senior VP & GM of Intent Based Networking Group

We just got done talking a lot about applications, but this is a Cisco Live, so it seems imperative that we talk about the network as well. And there's no bigger change in the network right now than the move from SDN, software-defined network, to intent-based networking. And really, when we break this down, about what is so different about intent-based networking, it's about the idea that you're going to use English language policy

and use a network-wide fabric to program the network. And the goal here at the end of the day is for you, they are offering these complex networks, these global networks to simplify things. But starting to think about how you actually are going to use SD-WAN to automate your on-ramp to the cloud.

And what we're going to do to interconnect it with your SaaS services, your IS services, your colo services, so that your SD-WAN fabric now extends into the cloud itself. So I'll give you some idea about how we do this. When you think about Office 365, it's a suite of applications. We've integrated with the APIs directly from our centralized SD-WAN console so that we dynamically and automatically optimize those connections for all your users. And what it means for your users is they're going to get up to a 40% performance improvement when they use Office 365, excuse me, with Cisco SD-WAN.

And so this ability to synthesize all this data and get you to the root cause fast is critical, and sometimes you're going to start from the app layer. Sometimes you're going to start from the compute layer. And sometimes, you're going to start from the network layer. And this is where Cisco's data center Network Insights comes in. It's a brand-new solution that actually integrates directly inside of your existing products, ACI, DCNM and for your data center and allows you to actually use those tools to get to root cause. And we can do things that nobody else can do. We can actually, not only bring out all the stats and the data that we know of from your Nexus switches, but we can also combine that with flow data because our cloud scale ASICs produced the richest set of flow data in the ASICs on the market. This is something uniquely that Cisco can do. It's available now, and it's available -- integrated inside of ACI and DCNM.

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**Jonathan Davidson** - Cisco Systems, Inc. - Senior VP & GM of Service Provider Business

So what we did is we wanted to go and focus on the key elements, the seminal technology that actually will help you transform and build that next version of the Internet. We focus on 3 key things. One is specifically around Silicon, optics, software and how those all come together in systems.

Cisco Crosswork Network Insights, which helps you understand if any of your BGP routes have been hijacked anywhere in the world. We have real-time data on over 300 million BGP routes globally, and we can notify you within seconds if anyone accidentally or maliciously has tried to take control of your routes anywhere in the world. And so what we've done is we've created a cloud service where you can upload your configuration. You can select what hardware platform you have and what version of code you want to test on. And using machine learning, we actually dynamically build a test plan for you.

All right. Now if you take the silicon, you take the optics, you take the software, you need to be able to put that together in market-leading systems. And what we have now is an entirely new platform called the Cisco 8000 family, that in a single RU, you can have 10.8 terabits per second in a single-router device. And you can have a grand total of 260 terabits in a single platform. This is going to enable the next version of the Internet with all of these great architectural foundations coming together.

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**Sri Srinivasan** - Cisco Systems, Inc. - Senior VP & GM of Webex Meetings, Teams, Calling & Devices

For too long, Microsoft has been an or, Microsoft or Cisco. Now it's an and, Cisco and Microsoft. Now no session of ours is complete, if we haven't shown you one of our brilliant devices. I've got a few up my sleeve today, and I plan to show you at least 2 of them. So the very first one, announcing the instant office, the Webex Desk Pro. At last, the wait is over. For the first time in Europe, announcing the new, Webex Room Panorama, everyone.

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**Susie Wee**, SVP & GM of DevNet and CX Ecosystem Success

So now our customers are asking, "Help me automate my infrastructure. Help me automate, automate, automate. And help me use it, help me use my infrastructure to solve my business problems."

**Alistair Wildman;Head, EMEA Customer Experience Group**

And I'm really pleased today to announce that we're reimagining our flagship services product, the Business Critical Services 3.0. And for the first time ever, this will be brought to market with our partners, and it will be scaled through our partners.

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

And what we've been doing is really working to help you continue to build the teams that you need to grow your business.

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**Alistair Wildman;Head, EMEA Customer Experience Group**

So we've always known that you're the heroes of IT. So please join with us, and we'll help you make the heroes of your digital transformation. Thank you.

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**Steve Multer;Chief Storytelling Officer**

Absolute power house, keynote, what an incredible way to start off the event and to kick off really everything that's happening for Cisco here in 2020, so exciting. Stay with us here on the broadcast all week-long for more of the same. Really, it's almost even hard to keep up, but we are going to keep up here, and we are going to end today's reel on such a great high note. I've got Colin Seward here with us, a Head of IT EMEAR with us here at Cisco. How are you, Colin?

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**Colin Seward - Cisco Systems, Inc. - CIO for Europe, Middle East, Africa and Russia**

Doing very well, thank you.

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**Steve Multer;Chief Storytelling Officer**

Very well for ending the day with us here. And

Bram van Spaendonk, our Senior Manager IT here at Cisco. Hello, Bram.

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**Bram van Spaendonk - Cisco Systems, Inc. - Senior Manager IT**

How are you, Steve?

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## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

I'm so glad to have you guys here. We're going to end by talking about Cisco IT management, which is really an incredible program for us. It's how IT leaders are developing better business and technical skills. It's a customized educational experience. So Colin, let me kick this off with you.

This is the ninth year in a row that we have had the IT management program and that it's been completely sold out. Why? Why is this program so popular?

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**Colin Seward** - *Cisco Systems, Inc. - CIO for Europe, Middle East, Africa and Russia*

I think one of the things people like about it is, it's a program designed by IT. So Bram and I, both in Cisco IT, and what we try to do is design it as if we're in the audience.

So we think about -- if we were sitting there, what would we like to hear? Or yes, we love technology. We'd love to hear about the latest technology. But we're managers, we're leaders. We have to try to set a vision, try to inspire people. We have to get the teams to work together. So we tackle issues about leadership and teams as well. So it's designed by IT for IT. And I think that's why it ends up being sold out.

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**Steve Multer;Chief Storytelling Officer**

Creates constant demand. So Bram, I'll ask you for the people who are watching here on the broadcast, who aren't in the program, if you go into an ITM program, what is it that you are being taught? What are these people hearing? What are they learning?

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**Bram van Spaendonk** - *Cisco Systems, Inc. - Senior Manager IT*

So the program is really designed for people that have one foot in technology, in IT, and the other in management and leadership, right? So think of a director of infrastructure or a manager of application development. And often, these are folks that started as engineers, as architects, as analysts and now become managers, now become directors.

So they want to learn, not just the technology, but they want to learn, how do I develop a skill set? How do I create an operating model?

So well beyond technology, which, of course we're at a technology conference, but they're really interested in how do other companies tackle the same problem. So when you're asking, what did they take away? Well, one thing they take away is, gosh, I'm not in this alone. These are peers that have the same problem.

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**Colin Seward** - *Cisco Systems, Inc. - CIO for Europe, Middle East, Africa and Russia*

We try to keep it real so that the speakers we get on stage, we've pull a lot of people from Cisco IT as well as from the BUs and the various different product teams. And when the IT guys tell their story, so to Bram's point, they're trying to keep it real. They're trying to talk about what they actually have learned trying to deploy this, the challenges they've had, how they've overcome it. And hopefully, that helps the customers. And in the breaks, we then go out. We talk to the customers, we learn from them. They've done some innovative things, and hopefully, they learn from each other as well.

So we're trying to get this community all working together, learning from each other.

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**Steve Multer;Chief Storytelling Officer**

And it proves value in so many different directions. You're proving value for their organizations. They become more valuable to the organizations themselves. It's a win-win situation, right, Bram?

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**Bram van Spaendonk** - *Cisco Systems, Inc. - Senior Manager IT*

That's right. I mean if you can say like, "Hey, I spoke with this person that has a similar role in banking or in health care or in finance." Having the same challenges, that's when that builds credibility, right? And we are peers in the industry.

So having that peer-to-peer networking, when we do the survey, that's what people -- they value the most, is to be able to talk with peers and say like, "Oh, I approach it this way and coming up with some other examples in addressing these challenges that clearly we all have." And it's fascinating. I've been doing this around the globe, whether it's in the U.S., where we do the IT management program. And it's very similar as how we address or how we are faced with these challenges, and there's also some differences though.

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**Steve Multer;Chief Storytelling Officer**

Absolutely. Colin, let me ask you, when people go home, when they go back to their organizations after being -- having gone through the IT management program, what do we hear from them that they are doing first? What are the first things that they do when they get back with this new knowledge?

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**Colin Seward** - *Cisco Systems, Inc. - CIO for Europe, Middle East, Africa and Russia*

It's a tough one because you -- when you come to Cisco Live, both in our program and all around the place, you take so much content back. And one of the challenges we recognized was people go back and they were a bit overwhelmed.

So this year, for the first time, we're doing some workshops as well. So they get to hear on the stage some of the high-level messages. They get the top tips and so forth. But also the workshops, they get a bit more practical hands-on. It's the first time we've done this. Yesterday, we actually ran the first 2 workshops, completely sold out.

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**Bram van Spaendonk** - *Cisco Systems, Inc. - Senior Manager IT*

Success.

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**Colin Seward** - *Cisco Systems, Inc. - CIO for Europe, Middle East, Africa and Russia*

So we think this is going to be a great way of adding some extra value. So when they go back, they don't just feel it's academic. They're actually ready with some hands-on they can get there and start applying.

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**Steve Multer;Chief Storytelling Officer**

Absolutely. Guys, so exciting what you're creating. Thank you for coming in and talking with us about it. We will see a lot more about ITM throughout the week. But Bram, Colin, thank you guys for your time, and hopefully, people will keep reaching out to you as well.

Guys, we are coming down to the very end of the program. Remember, throughout the week, do not miss a minute of it. If you do accidentally, that's okay. We've got you covered out there on -- all the videos are going to be posted out to the YouTube site. You can check them all out. Be with us all day tomorrow, keep hitting us at #CLEUR. We're going to look forward to seeing you tomorrow. Steve Multer on behalf of everybody. Have a good night.

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

Welcome, everybody, back to the live broadcast coming to you from Cisco Live! Barcelona 2020. It is Wednesday morning. We have been having so much fun here at the show. Hopefully, you've had an opportunity to tune in with us throughout the day yesterday. Stay with us all day today if you can. If you miss out on anything, that's okay. We've got it all posted for you out at [ciscolive.com](https://ciscolive.com).



But we've got an incredible amount of great stuff happening today. My name is Steve Multer, I'm 1 of 4 hosts that you will meet throughout the show day. Remember to keep reaching out to us on social media using #CLEUR wherever you like to go, whether it's LinkedIn or Twitter or Snapchat or Facebook, you name it. Keep reaching out to us. If you find us, I promise that we will find you as well.

And we are headed toward our first big innovation talk of the day. That's going to kick off at 11:00 with Sachin Gupta. He is our Senior VP of Product Internet, Intent-Based. Wow, listen to me, right away in the morning, Intent-Based Networking Group here at Cisco. And we'll talk about cloud and the modern workspace. Very excited for that. Again, 11:00 Barcelona time.

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## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

But first, I am so glad to have our own Chintan Patel back here in the studio. Good morning, my friend.

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**Chintan Patel** - Cisco Systems, Inc. - CTO - UK & Ireland

Good morning. Nice to see you.

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**Steve Multer;Chief Storytelling Officer**

I feel like we didn't see you since yesterday morning. We need more of these opportunities to talk technology.

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**Chintan Patel** - Cisco Systems, Inc. - CTO - UK & Ireland

Great to be here.

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**Steve Multer;Chief Storytelling Officer**

But you've been out there listening to what everybody's been saying out on the show floor. We started off with such a powerful keynote yesterday morning. We replayed that keynote. What have you been hearing from people as you've been walking around about the technologies that really stand out to them and get them excited?

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**Chintan Patel** - Cisco Systems, Inc. - CTO - UK & Ireland

So look, first and foremost, what an energizing morning it was yesterday when we had the keynote. I mean, so many announcements, incredible announcements across so many areas of the portfolio. I've been spending time with customers from across the region. They're pumped up. They're very excited about what we announced because it really does touch every type of customer we have, whether it's service providers, whether it's enterprise, whether it's in the commercial space. Across the board, even in SMB, we've got solutions in our portfolio that we announced yesterday that touch everybody.

I think the one thing that stood out front and center was how we're laying the building block for the Internet of the future. People are very excited about what we're doing as a company to help connect the next 50% that come online over the next few decades. The application world is going through such a revolution. We saw the announcements we made around what we're doing around connecting the application to the infrastructure like we've never done before.

Applications are the heart of every business now. The number of applications doubling in businesses over this year. 50% of them will be refactored and redesigned in some shape or form. We're using containers and Kubernetes to deploy these applications in new ways. And as this environment gets complex for our customers, we announced new solutions that really bring together both the app developers and the DevOps teams and our customers with the IT teams. And so actually, we can bring together these organizations and the teams that we're supporting to give visibility like they've never had before.

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**Steve Multer;Chief Storytelling Officer**

So many new solutions and really more than we usually hear even in an opening day. My question is, are people getting it? Are they starting to see the interconnection between all these capabilities? Is it overwhelming them? Or do they see how one aspect will support another aspect?

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**Chintan Patel** - Cisco Systems, Inc. - CTO - UK & Ireland

What I've been hearing is it touches so many different areas of a customer's environment, whether it's the contact center and some of the innovation we announced around AI. In the contact center to help automation and augmentation, whether it's the new capabilities in WebEx around AI and adding a new voice transcription service to it; or whether it was in the IoT space and the operational technology space, where we're bringing all the security. The wealth of security that we offer in the IT world, we're bringing it to the operational world through Cyber Vision using things like Talos and Stealthwatch, which is such great tools, which our IT teams have been using for many years. We're now bringing that to all the other things that are being connected to the networks of our customers.

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**Steve Multer;Chief Storytelling Officer**

Which is really exciting. We had Ben Munroe here in the studio with us yesterday. We had a great security talk and touched on a lot of those capabilities as well.

Let's talk a little bit about multidomain architecture. Great offering. Why do you think it's so important? How are customers seeing their challenges being solved with multidomain?

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**Chintan Patel** - Cisco Systems, Inc. - CTO - UK & Ireland

Well, I think the first thing is, I mentioned applications are being developed, designed and ultimately deployed in completely new ways. They're far more distributed, they're on-prem, they're in the cloud, they're containerized. And so the ability for every business, which is a digital business now, having that visibility into what the application is doing all the way down to the infrastructure is really, really important.

And so we're the first to enable that to happen and enable those 2 teams, which, up until now, worked separately to have this closed-loop operating model so that actually everybody gets end-to-end visibility of what's going on all the way from the front-end user interface down to the infrastructure.

And then we're providing all of that capability for Container as a Service through our Kubernetes model. And so we're actually taking the complexity away. We're embedding AI and machine learning in all of these capabilities. So actually, we help the IT teams operate and bring these services to market far quicker than perhaps we've done before.

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**Steve Multer;Chief Storytelling Officer**

So exciting. Nobody has the depth and the breadth and the power that Cisco does. We want to continue to hear from you all day, all week-long here on the technology side of things. Chintan, thank you. Do not be a stranger. Please come and visit us as much as you can, okay?





**Chintan Patel** - Cisco Systems, Inc. - CTO - UK & Ireland

I'll be back. Will do. Thank you. All right.

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**Steve Multer;Chief Storytelling Officer**

Again, thanks for your insights.

All right. So what we're going to do now is take a quick flight out to the park, which is sort of a bridge area between where we are here in the hub and next door over at the World of Solutions, and we're going to say a fabulous good morning to our own Nish Parkar and Zane Powell. How are you, my friends?

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**Nish Parkar;Cybersecurity Communications Manager**

Good. Quick flight indeed. I think that would be the quickest flight in the world.

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**Zane Powell;Associate Sales Representative**

Yes. Good morning, Steve.

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**Nish Parkar;Cybersecurity Communications Manager**

So we're here in the makerspace here in the park, as you said. I'm one of your hosts, Nish Parkar. Day 2, super excited. I'm here with Zane as well.

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**Zane Powell;Associate Sales Representative**

Yes. Hi, everyone. And it's Day 2, and I'm super excited as well. And I have something really cool to show you what we're doing here at the makerspace. Look at this. How did we make this?

Well, basically, what we're doing here is we're taking e-waste and Cisco. Any technology company has lots of e-waste, and we're really reusing this, and this is all part of a circular economy. Nish, what's your favorite thing down here at the makerspace?

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**Nish Parkar;Cybersecurity Communications Manager**

I feel like there's so much. I mean, if you just take a look at this table here, Steve, there is so much like random things that come from all different Cisco parts. One of my favorites is -- let's go over here and take a look.

So someone who's been very, very excited with -- and gone crazy with a little Cisco cable, and they've made themselves a potholder. So these are things that you can do when you come down to the makerspace here in the park. If you're not here at the show, make sure you do come along next year because there's great opportunities to be playing with some of Cisco technology, get your hands on it and really be part of the fun.

So Steve and David, make sure you come along as well in the show. Back to you in the studio.

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**Zane Powell;Associate Sales Representative**

Right. I have just one thing that I want to show us, just quickly if we can move over here. I've seen -- I've never actually seen one of these in real life as a 3D printer. And this is a famous castle in Barcelona, Sagrada Família. Hope my pronunciation was correct. And it's absolutely beautiful. And the guys down here, they're doing a lot of great things.

Now the final thing that we want to show everyone is if we can just move the camera and we can get a shot of this. Look at this. This is a 3D waste, e-waste sculpture. Nish, what do you think of that?

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**Nish Parkar;Cybersecurity Communications Manager**

I think -- I mean, it looks very quirky. It's very unique. There's lots of different things that people have been building throughout the week, which are being added to the sculpture, and it's all about using technology as part of the Cisco Refresh program to actually have a positive impact in the world. And there's certain things in now which makes things easier to do, make things better for the environment. People have been getting really creative with what they've been doing.

So like I said, if you are at the show, make sure you come along. If you're not here, make sure you do come along to the show next year. There's great opportunities to get your hand on Cisco technology.

Back to you in the studio, Steve.

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**PRESENTATION**

**Steve Multer;Chief Storytelling Officer**

All right. Great job, guys. Thank you so much. I tried to cut Zane off there, and then I realized, no, we had a 3D-printed Sagrada Família. In case you are wondering why you should be here live in Barcelona with us, it's to see 3D-printed versions of Gaudí sculptures. So there you have it. That, among many other reasons.

Glad to have you back live in studio with us. We are in a great segment right now. We are going to take a moment to speak with and recognize our phenomenal sponsors here at this event. Very, very grateful for them. And we're going to begin with NetBrain, and I'm going to turn my attention over to the left this time, where I've got Jason Baudreau here with us, VP of Marketing for NetBrain. How are you, Jason?

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**Jason Baudreau;NetBrain;VP of Marketing**

Hello. Good to see you. Good morning.

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**QUESTIONS AND ANSWERS**

**Steve Multer;Chief Storytelling Officer**

We were talking a moment ago. And again, I was able to walk by the booth yesterday. You guys were jam-packed, giving loads of demos. You've got a divided area. You were so busy in the middle, I couldn't even walk into the booth. So congratulations.

**Jason Baudreau;NetBrain;VP of Marketing**

Thank you.

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**Steve Multer;Chief Storytelling Officer**

I want to start by talking a little bit about network operations. First of all, do you guys really believe that network operations do in fact need transformation? And if so, why do they?

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**Jason Baudreau;NetBrain;VP of Marketing**

Yes. And why now, right?

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**Steve Multer;Chief Storytelling Officer**

Why now?

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**Jason Baudreau;NetBrain;VP of Marketing**

Because I think a lot of it -- one of my favorite things about coming to Cisco Live! every year is understanding what's going on in the industry and the transformation. And of course, we're hearing a lot about the transformation from what was typically physical networks to SDN and ACI. And of course, now it's SD-WAN and towards the public cloud. And the thing is one of these technologies isn't displacing the other. It's really augmenting, right? So networks are becoming more heterogeneous end-to-end. And so much of this automation that's bringing -- that's coming to the network is bringing simplicity through abstraction. But when things go wrong, the complexity still lies underneath the surface. So teams in the operations side are struggling to troubleshoot and respond to incidents amongst all that complexity.

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**Steve Multer;Chief Storytelling Officer**

Well, let's talk about the NetBrain approach. What exactly do you offer? What is the primary story that you're telling to customers today and throughout the week?

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**Jason Baudreau;NetBrain;VP of Marketing**

Yes. So NetBrain, we're a network mapping and diagnostic automation solution. So we talk about network automation in the context of incident response, day 2 troubleshooting automation. So, so much automation today has been focused on the day 1, the provisioning. So we think it's time for automation to come to day 2 network operations. And that's what we mean by NetOps transformation, bringing in automation and augmenting every existing workflow with that automation.

So what is that workflow? It's an incident response workflow. It's a ticket that's coming in typically from a ServiceNow or a BMC Remedy, right? And the typical enterprise organization may have hundreds or thousands of these tickets every day. So something that's happening with that volume, that's ripe for automation, right? So we try to augment those workflows. From the moment a ticket comes in to the moment a ticket closes with 2 things, with visibility of the network and with end-to-end visibility of the network and automation.

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**Steve Multer;Chief Storytelling Officer**

Very, very good. Let's talk a little bit about medium time for resolution because we hear it pop up all the time. It's one of the catch phrases we hear wherever you go. What are the challenges that we face in MTTR and how do we begin to overcome them?



**Jason Baudreau;NetBrain;VP of Marketing**

Yes. So especially, I think that the team -- the term MTTR it's so overused, right? But the real part is the mean, mean time to repair, the average. So to improve an average of something, you have to be continuously and systematically better over time.

And so we think automation, the approach with automation is through a continuous feedback loop of lessons learned. And in every incident has some sort of a resolution, and there's a lesson to be learned about that problem. So we ask ourselves, if it took 4 hours to troubleshoot a problem, is it going to take 4 hours next time to troubleshoot a similar problem? The answer should be no. We should digitize the lessons we take from that event, codify some sort of diagnostic automation and ultimately, from left to right is a typically -- gets escalated. It should be shipping network load to the left, right? Less escalation from Tier 2 to Tier 3 architects, more driving automation, driving that workload down to Tier 1 response. We even think there's opportunity to drive workloads to what we can call Tier 0. Before a human even opens a ticket, there's opportunity for automation to augment through maybe an API-triggered automation from a ServiceNow ticket, for example.

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**Steve Multer;Chief Storytelling Officer**

Do you see in the future that we may actually reach some level of standardization in terms of the practice in how we do what you're just explaining?

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**Jason Baudreau;NetBrain;VP of Marketing**

I think quite possibly. I mean, if you look at -- we talk to hundreds of customers throughout shows like this, and we try to understand what is your troubleshooting process. And so much of it follows a very typical workload, the day -- the life cycle of an incident. A problem comes in, it's usually a ticket, there's usually an IP address. Usually, it's a source and a destination of an application, for example. So can you standardize the mapping of an application flow? Can you embed that map application flow inside of a ticket? What are the top 3 to 5 things that you should be checking for when you troubleshoot? Well, why don't you just automate those and embed the diagnostic response from that inside the ticket.

And then there's a curve ball there, which is there's going to be a wildcard of things that you can never anticipate, right? So how do you automate something so reactive and shooting from the hip like troubleshooting? So it has to be absorbing lessons learned continuously and ongoing so that every unknown problem eventually becomes a known problem. And then those known problems have associated known diagnoses, and those diagnoses can be automated.

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**Steve Multer;Chief Storytelling Officer**

And this is a deep embed for NetBrain in terms of how you are responsive in this way with your particular customers. Are you guys really hand-in-hand on a daily basis with them to get to these points?

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**Jason Baudreau;NetBrain;VP of Marketing**

Yes and no. I think the thing we have to do is we try to integrate into their existing workflow, and we try to augment that with automation. But more importantly, we have to provide a platform to enable the customer to drive that automation themselves. Automation has to be customized to the unique network, to the unique use cases within that network. So ultimately, that's why a platform has to be there. And on a low-code or no code way to automate, that helps network teams, not DevOps teams, not programmers or scripter. Helps network teams create that automation.

And the part of the network transformation, the NetOps transformation, is who is the automation for? It's not for just the people that build the automation for the few. It needs to be for every network engineer, needs to be able to access and use that automation. So an enterprise has 100 or 1,000 network engineers, they need to have that automation at their fingertips, not just 1 or 2 people, but everybody, every day.

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**Steve Multer;Chief Storytelling Officer**

Absolutely. All right. So for those people who are with us here on the streaming broadcast and not live here in Barcelona, if they want to get more information or they want to get started working with NetBrain, what would you like them to do?

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**Jason Baudreau;NetBrain;VP of Marketing**

Yes. So certainly, if you are here, and we're booth #7 in the World of Solutions. If you're not here at the show, so visit us at [netbraintech.com](https://netbraintech.com) and learn more. And if you're interested to see what sort of mapping and visibility automation looks like, you can basically get an evaluation version of NetBrain.

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**Steve Multer;Chief Storytelling Officer**

All right. Fantastic. Jason, thank you for taking the time to be here with us today. Thank you so much for your sponsorship here. We are really grateful for it and for that partnership that we have with you at NetBrain, between you and Cisco. And congratulations on the great work that you've been doing.

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**Jason Baudreau;NetBrain;VP of Marketing**

Great. Thank you, Steve.

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**Steve Multer;Chief Storytelling Officer**

Really good to have you here in the studio.

We're going to take a very brief run back out to the park. And again, I see Nish Parkar out in my low-volume monitor. Hello, my friend.

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## PRESENTATION

**Nish Parkar;Cybersecurity Communications Manager**

Hey, Steve. See, as I'm here in the Build a Bike area. It's just a few hundred meters -- or not even that, maybe 10 meters away from makerspace that you saw us in earlier. And this bit of the park is really exciting. So there's an opportunity for attendees here at the show to actually head down to the area and build a bike. So donating just 5 minutes, maybe a little bit more if they have more time throughout their day, to actually come and build a bike. And I'm here with Peter. So Peter, come on over. How are you doing?

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**Unidentified Participant**

Very well. Thank you. How are you?

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## QUESTIONS AND ANSWERS

### **Nish Parkar;Cybersecurity Communications Manager**

Yes, really. Thank you. So obviously, I've sat and seen a little bit talking about the fact that attendees are building bikes. Why are they doing that here at the show?

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### **Unidentified Participant**

So we've got a list here where we're building 50-plus bikes. We're working with 5 charities in Spain, 3 of them are in Barcelona, 2 are in Madrid. And what we're hoping to do with the bikes is actually help homeless people get back, get -- reengage with society. You probably -- we always know -- we always look at homeless people and think about people just on the street. So they are part of who we're trying to help. But also, there's lots of people who are fleeing domestic violence, who are away from their normal home and need a bike just to get to school, get to work, and we're hoping to actually solve a few problems today.

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### **Nish Parkar;Cybersecurity Communications Manager**

And it's amazing because it's actually when you look at it, it's quite simple. People can come down, just spend 5 minutes here. That will have such a big impact in the communities here in Spain as well.

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### **Unidentified Participant**

It's amazing. We're hoping to get through over the last few -- over these few days, maybe up to 1,000 people who can contribute and make a real difference to this.

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### **Nish Parkar;Cybersecurity Communications Manager**

And how are we doing against the target here this week so far?

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### **Unidentified Participant**

Well, we've gone past halfway, which is really good. I think today, we are looking to do 15 and tomorrow, another 10, and then we'd have achieved our target of 55 bikes.

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### **Nish Parkar;Cybersecurity Communications Manager**

Amazing. And I actually really enjoy cycling, but I have no idea how to build a bike.

So Zane, I can see you standing there behind me. You're chasing a wheel to go on your bike. So how is that all going there for you?

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### **Zane Powell;Associate Sales Representative**

Well, I mean, I think it's going okay. I have the sleeves rolled up and getting stuck in. And...

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**Nish Parkar;Cybersecurity Communications Manager**

Okay.

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**Zane Powell;Associate Sales Representative**

Peter, how is it going? Is this -- am I looking...

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**Unidentified Participant**

No. You're doing alright, Zane. So pull that little lever back there, pull this lever, so -- this backwards. It's in your hand. That's it. And then we're going to slot that into the bike. You're going out. And then we're going to engage to those 2 holes there. We go -- you're in?

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**Zane Powell;Associate Sales Representative**

Yes.

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**Unidentified Participant**

And on that side and in this side. And then this lever here, just close it. And then screw this one clockwise here while holding that one. And then when it tightens up -- is it tight? Now pull that one back, pull this one back out, open it, tighten it a little bit more, and now squeeze it back in. You've done it. Well done.

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**Nish Parkar;Cybersecurity Communications Manager**

Simple as that, guys. You saw it. Just -- I'm really curious, does that wheel -- is that going to spin? It does. It does. Is that easy then, Zane?

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**Zane Powell;Associate Sales Representative**

It was idiot proof. Even I could do it.

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**Nish Parkar;Cybersecurity Communications Manager**

Amazing. Well, Steve, we're going to head back to you in the studio.

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

Well done. Thank you. Nish, you said you're genuinely surprised that Zane was actually able to put a bike together and that the wheel did in fact spin. We were all laughing about it here in the studio. Well done, guys. We'll keep coming out to you in CSR.

Our next sponsor here during this particular segment is Cisco Customer Experience. And Cisco CX has been right out of the gate, such a powerful, powerful conversation. Here at the show, CX is delivering all those outcomes that business really demands in this hyper-connected digital world.





It's all about the digital transformation. There's a lot of challenge and risk in it. But of course, what's happening with CX is a life cycle approach. It touches across so many different aspects of our Cisco portfolio, and we're really excited to talk about it right now.

So I should introduce who I have with me, Phil Wolfenden here, our VP of Customer Experience Centers in EMEAR. And I'm especially excited to have [Mena Ahyad] here with us, Consulting Engineer for CX EMEAR. And also, I need to let all of you know, Mena is the youngest CCIE that we have in Africa, and that's really incredibly cool. And I wanted to make sure that we got that in. So welcome, guys. Thank you so much and glad to have you with us.

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**Phil Wolfenden;Vice President Customer Experience**

Thank you for having us.

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**QUESTIONS AND ANSWERS**

**Steve Multer;Chief Storytelling Officer**

So Phil, let's talk about right out of the gate at the keynote yesterday, CX, a big part of the story and maybe for the first time at one of our Cisco Lives where CX takes such a front seat at the event. How exciting was that for you after all the years that you've put in to build this up?

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**Phil Wolfenden;Vice President Customer Experience**

Yes. And you and I have talked to most years about this exact thing, Steve. So in previous years, I remember coming and saying, yes, we're incrementally stepping forward. We're getting a little bit more famous in the company. Yes, we had to mention sometime in the -- on the third day. This year, it's taken a huge leap forward. It's like we have -- we're now part of the company strategy. And honestly, that's -- I've been here longer than I care to inform everybody. This is the very first time...

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**Steve Multer;Chief Storytelling Officer**

20 years, by the way. I should say 20 years building this up.

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**Phil Wolfenden;Vice President Customer Experience**

Indeed, indeed. And it's the most traction, the most airtime and the most relevance we've had at a company level ever.

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**Steve Multer;Chief Storytelling Officer**

It's really incredibly exciting. Mena, you heard Alistair talking yesterday that CX is really a people business. What does he mean by that? What do you mean by that when we talk about this as being a people-focused business?

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**Unidentified Participant**

Yes. So I totally agree with Alistair that CX is a people business, and I'm really happy to be part of this organization as we share the same value as well that I value the most, which is caring about people.

So I think at CX, we have a pool of diverse talents, which not only bring technical experience to the customers and partners but also take them through the great customer experience, which aims at achieving the customer success. So what I personally do at CX is that I'm a consulting engineer. So I love to be part of the customer success journey, which starts from gathering the requirements and then putting the design based on these requirements and then implementing and testing this new design environment.

At the end, I believe that CX, that we build our CX success portfolio based upon our customers' and partners' success.

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**Steve Multer;Chief Storytelling Officer**

Which was really so perfectly put. I don't think you could have encapsulated it any better. To me, and I always talk about this, this goes to the heart of who we are at Cisco. As much technologies we want to talk about is great. We got the tech. Everybody can go and check it out for themselves. But it's sometimes very hard for people to understand who we are as a corporate culture, how we feel about our customers. Are they getting it? Do they understand what is available to them through the CX offering?

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**Phil Wolfenden;Vice President Customer Experience**

I don't know is the answer.

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**Steve Multer;Chief Storytelling Officer**

Okay.

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**Phil Wolfenden;Vice President Customer Experience**

I hope they do.

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**Steve Multer;Chief Storytelling Officer**

I mean, when you walk around a show floor like this, what are the responses that you get?

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**Phil Wolfenden;Vice President Customer Experience**

Well, I heard some stats yesterday. So for those who haven't seen it, World of Solutions, you go in, there's the CX set, right there.

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**Steve Multer;Chief Storytelling Officer**

In front of you.

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**Phil Wolfenden;Vice President Customer Experience**

And it's enormous.

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**Steve Multer;Chief Storytelling Officer**

Which tells you, the fact that it's right upfront, that tells you a lot of what you need to know.



**Phil Wolfenden;Vice President Customer Experience**

There you go. So go visit that. I was told yesterday unofficially that the CX tent was the second busiest in World of Solutions. We were only beaten by Collaboration, but they cheated because they were giving away the device. So...

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**Steve Multer;Chief Storytelling Officer**

We didn't say that live on air. No, no, no.

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**Phil Wolfenden;Vice President Customer Experience**

There we go. So if we're all playing fair, then the CX stand was the most popular in World of Solutions, and that's amazing.

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**Steve Multer;Chief Storytelling Officer**

All right. So that does mean that people are starting to get the story. They know what's available. What about visit to the CX centers?

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**Phil Wolfenden;Vice President Customer Experience**

So the engagement levels that we have, it is going off the chart. And the strategy we have now about managing people around that life cycle and delivering business value that they define, we don't define what they want from the solution. The customers define what they want from the solution.

The impact we're having of escorting them a white-glove service, that's guiding them around that life cycle to those objectives, is having tremendous impact. And we're so busy. We talked about it being a people business. Honestly, I can't hire people fast enough. There aren't that many talented people in the world right now for me to be able to hire them all. So it's going great.

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**Steve Multer;Chief Storytelling Officer**

What a wonderful problem to have. And then I think that sort of puts you into rarefied air, the fact that you are actually in the door.

You're still fairly new to the team here at this point. What has the Cisco experience been like, being a part of this particular organization and what it tries to accomplish?

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**Unidentified Participant**

Yes. So after graduation from university, actually, I started in one of the CX centers in Krakow, Poland for 6 months. And I'd say that in my network journey from scratch in the CX center, and we started there from -- with the CCNA, the associate level, in routing and switching. And then I wanted to understand things later, so I went for the CCNP, which is the professional level, and then the CCIE. And all of my studying materials was from the online learning platform for Cisco.

So I think as a graduate within 1.5 years, to start from scratch at Cisco and then using the CX Services Academy program and their online learning platform is a great example. And they really encourage every graduate to join this CX graduate program because you will not only learn the technical knowledge, but you will also like gain the connections and bonds with all of the Cisco colleagues from the region, which will last along his career. And I believe, at Cisco, if you would like to learn, it's not only for young graduates, it's for everyone. And if you would want to learn and develop all of the -- like the -- everything is available for you.



**Steve Multer;Chief Storytelling Officer**

Opportunity, opportunity. By the way, I don't want to miss mentioning that yesterday, CX posted out one of the coolest videos that I've seen in a while from Newcastle, their implementation of what was happening in CX. And I was just really impressed with it. For those of you who haven't seen it, it's again all about that digital transformation story, finding better outcomes for local residents in Newcastle, better cost savings, making sure that the area is known for tech innovation. And to me, that speaks to so much of what CX is trying to accomplish. So congratulations on that. And go check out that video again from the Newcastle City Council.

Phil and Mena, thank you. I'm really, really glad to have you guys in here with me. I'm glad to be able to hear this story. Thank you for the sponsorship. Congratulations on the success, and I hope we get a lot more opportunity to talk with one another.

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**Phil Wolfenden;Vice President Customer Experience**

Hoping so. Thank you, Steve.

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**Unidentified Participant**

Thank you so much.

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**Steve Multer;Chief Storytelling Officer**

Thank you, guys. It's been a pleasure.

All right. Now we have got a short video, a very short video that we are going to play for you that help sort of take you on that customer journey. Enjoy the video. We're going to see you back in just a little over 20 seconds. We'll be back shortly.

(presentation)

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

And that is what it is all about. Thank you again for being with us live here on the broadcast. My name is Steve Multer. Remember to keep reaching out to us all day and all week long using #CLEUR. We want to hear from every one of you. And I promise, we are going to respond. We're going to reach back out to you.

We are still in the middle of our sponsorship segment. And now we come to one of my favorite Cisco partners, in fact, our platinum sponsor here at the show, and this is NetApp. I always love the opportunity to talk NetApp. NetApp is all -- wherever Cisco is, NetApp is right there with us, every single step of the way. We're very, very grateful for it. I want to introduce Adam Fore, Senior Director of Portfolio Marketing. Good to have you with us, Adam.

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**Adam Fore;NetApp;Senior Director of Portfolio Marketing**

Thanks for having us.

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**Steve Multer;Chief Storytelling Officer**

And then Cormac Dunne here is with us, Director of Digital Infrastructure for ICON.

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**Cormac Dunne;ICON;Director IT Operations**

Hey. Hi, Steve. How are you doing?

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## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

Welcome. Thank you, guys, for taking time out of your busy day. Again, I was over at the NetApp booth yesterday, and you didn't have a free minute to do much of anything. You were so mobbed over there.

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**Adam Fore;NetApp;Senior Director of Portfolio Marketing**

It's been great. Yes. Definitely.

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**Steve Multer;Chief Storytelling Officer**

It's been a really, really good show for you. So NetApp, for those of you who haven't had an opportunity to connect in with what they do, they offer a lot of proven capabilities to build your data fabric, modernize your IT, simplify the private cloud so you get better agility, fuel data-driven innovation on any cloud. You guys do yeoman's work out there. What is really the big story for attendees over at the NetApp booth this week? What are people excited about and what do you want them to know about what NetApp is up to these days?

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**Adam Fore;NetApp;Senior Director of Portfolio Marketing**

Yes. One of the things we're talking about is memory-accelerated FlexPod. So it's another advance we have with FlexPod. We're working with Cisco, integrating kind of Optane technology, Intel Optane, in that architecture that allows you to give orders of magnitude, better performance for some of your enterprise applications. So it's a continued evolution of just how we're evolving our joint FlexPod solution with Cisco.

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**Steve Multer;Chief Storytelling Officer**

Alright. Very cool. We're going to talk a lot of FlexPod because you don't find a lot of products that have more longevity than FlexPod or more of a long-term partnership.

Cormac, tell us a little bit about ICON. What is it that ICON delivers that people need to know about?

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**Cormac Dunne;ICON;Director IT Operations**

Yes. Sure. So I work for ICON Clinical Research, and we have a global offering of outsourced development, commercialization services. And our customers are pharmaceuticals, medical device companies and biotech, government and public health organizations. And our business processes, we collect and store and process a significant amount of data.

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**Steve Multer;Chief Storytelling Officer**

I always get very excited any time we have the health care reference because I really don't feel that there's any other sector out there or any other industry where there are more requirements involved, where there's more compliance issues, where security becomes more of an important story. So we're so glad to have you and your perspective here with us. How are you using data these days as a tool for innovation to address your current and your future business goals, your visions and so forth?

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**Cormac Dunne;ICON;Director IT Operations**

Yes. It's interesting that you pick up on that, and that is true. And look, it is a very regulated environment, and we have to be very careful in terms of the duty of care we take with our customers' data. What I would say is standardize and simplify has been our mantra in IT operations for many, many years, and we've consolidated all of our data and client computed requirements onto a FlexPod solution. This allowed us to quickly make copies of that data and perform multiple forms analysis on that data. This enables us then to assist our clients, reduce time to market to find sites and sort of [treat] patients faster.

I would say, in addition, we enjoy the flexibility of the product set, okay? For example, they -- we harnessed the FlexPod replication technology. And this allows us to integrate acquired [copies] in the standard format, at speed without impacting ongoing operations.

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**Steve Multer;Chief Storytelling Officer**

Perfectly put. And I'm so glad that you brought up the flexibility because, Adam, that was where I was going to go with you next.

Let's talk about that flexibility on FlexPod. Again, the longevity, the continued demand. Why do customers like ICON and so many others really look to FlexPod as their answer?

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**Adam Fore;NetApp;Senior Director of Portfolio Marketing**

Yes. I think these guys are a great example of leveraging that flexibility of the FlexPod architecture. A great example is what they're doing around, say, cloud tiering. So with their existing environment, they've been able to implement a new capability of being able to tier into a cloud where they can take, say inactive data, move it to a lower-cost storage so that they can kind of reduce that cost of the primary environment. And so that's something they implemented locally. And because they're a clinical environment, they can't really put data in the public cloud so they actually implemented their own S3 service in their environment. And so they're actually turning into their own S3 service, but they continue to have the ability to, say, back up to that service or back up to the cloud or they could even move data to that data and applications into the cloud so they can access a cloud native, say, services they need to, then bring that environment back on-prem.

So they're starting to use the flexibility that, that architecture provides, and they're kind of open to all these other capabilities as well.

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**Steve Multer;Chief Storytelling Officer**

So grateful to NetApp for this ongoing partnership and the ability to continue to deliver for so many customers like ICON.

We have got a lot more NetApp to talk about. My apologies there. Phil and Cormac, thank you guys for being in here with us. Don't go away because we're going to continue the NetApp by conversation. No. No. My goodness, my apologies, you can tell. This is how we know we've had multiples. Phil was a moment ago. We're back with Adam now over on this side. Thank you.

We are going to continue talking NetApp, but this time over in the NOC, because you guys are playing a very large role in the NOC. And our own David dela Cruz is over in that area, which I think is just right over here to this side in the hub. David, can you hear me out there?

**David dela Cruz;Commercial Account Manager**

Yes. Thanks, Steve. That's right. I'm in the NOC, the Network Operations Center here on the show floor in Hall 6. Yes. And to continue the conversation with NetApp, our platinum sponsor for the show this week, I'm here with Arvind Ramakrishnan and -- who's a Solutions Architect at NetApp, and Joe Clarke. He's a Distinguished Services Engineer at Cisco. So basically one of our top engineers. Thanks so much for being on the show, guys.

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**Joe Clarke;Cisco Systems;Distinguished Services Engineer**

My pleasure.

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**Arvind Ramakrishnan;NetApp;Solutions Architect**

Welcome.

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**David dela Cruz;Commercial Account Manager**

So a couple of questions for you. Obviously, NetApp is a big part of not only sponsorship with Cisco but also the NOC itself. What is NetApp's role in the NOC here and how long has NetApp been supporting Cisco Live! as an event?

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**Arvind Ramakrishnan;NetApp;Solutions Architect**

Sure. So I'll probably start with the second half of your question, which is how long we've been part of the Network Operations Center. So it all starts with FlexPod, which is a joint solution between Cisco and NetApp. And we began 10 years before, and FlexPod is now celebrating its 10th anniversary, and we've been part of this NOC ever since. So NetApp is the official storage provider for the Network Operations Center, and we've been doing it for 10 years now.

And now leading into the first question, that is what's our role here. We, being the official storage providers, our role is to provide the necessary data services for all the operations here at the Network Operations Center's data center. So we provide all the core essential storage capabilities. And then also, in addition to that, we also bring in one extremely critical value-add, which is to also ensure business continuity and disaster recovery capabilities in the Network Operations Center.

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**David dela Cruz;Commercial Account Manager**

Awesome. And obviously, there's a lot of important services running in the NOC. What are some of the key workloads running and how much data is actually passing through? Because I'm sure the numbers are staggering.

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**Arvind Ramakrishnan;NetApp;Solutions Architect**

Oh, yes. So in terms of key workloads, we host all the critical services like the active directory, DNS, most of the monitoring tools that are required to monitor all the networks that we build here for the show. And we also record all the breakout sessions that are being held over here at the -- at Cisco Live. And in terms of how much data pass through the NOC, I'm going to pass it over to Joe, who can take a stab on it and give us more insights into that.

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**Joe Clarke;Cisco Systems;Distinguished Services Engineer**

Oh, yes. We have about 50 terabytes of active storage. And in terms of the overall data load that we push through, we are doing terabytes. We've already done 35 to the Internet, and we've done probably 10x that into our NetApp storage. So we -- it's something we don't even have to think about. The reliability is there and we count on it, and we push a lot of data. We record all of our net flow data, all of the traffic going through, so we can do security analysis, so we can protect our attendees, and we need that reliable storage to make that happen.

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**David dela Cruz;Commercial Account Manager**

Absolutely. And I understand the data center, the NOC data center has been deployed as a FlexPod, which is a converged infrastructure architecture. What benefits does that bring to you guys as operators of the NOC?

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**Arvind Ramakrishnan;NetApp;Solutions Architect**

So the primary benefit of FlexPod is we publish several enterprise workloads. So we get them all pre-validated and pretested on a FlexPod. And the solution that we deploy here in the NOC is a MetroCluster, and we have a pre-validated solution for how a MetroCluster needs to be deployed when it is being deployed as part of a FlexPod. So we know what the best practices are, so we have a reassurance, and we have the guarantee that if you just follow the best practices and the guidelines that are described in the CBDs that are being published for a FlexPod MetroCluster, we know we have a solution that's going to work for us, and we just stick with what the best practices are that have been described over there. So that's one key value-add that we get with following the guidelines that are being described for a FlexPod.

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**David dela Cruz;Commercial Account Manager**

Absolutely. One maybe one -- just final quick question, a bit more of a fun one for you there, Joe. Have you got any interesting stories from behind the scenes of the NOC?

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**Joe Clarke;Cisco Systems;Distinguished Services Engineer**

We always do. Fortunately, reliability has been great. But when we got on site, one of the things that we tend to run into in all the venues, power and cooling.

So a few years ago, we got on-site just after another show had finished, and they decided that they were going to turn the power off for that show, which is a good thing to do, and they took our power out, too. Took out 1/2 of our MetroCluster at the time, didn't even miss a beat.

This year, we were leaking a little bit of current to ground. We lost a few circuits. Again, no problem. They forgot to bring in the air conditioning right away when we got in site. So we had to keep things a little bit cooler. So we always play the environmental dance a lot when we get to a venue.

But in terms of getting the network up, in terms of getting the data center and the storage up, it was a breeze. It's great because NetApp brings Arvind, Scott on site. We get great support in making this whole thing happen.

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**David dela Cruz;Commercial Account Manager**

Absolutely. Well, it sounds like the resiliency of the architecture really helps you guys out in that case.

Thanks so much for being on the show, guys. I think we're heading back to Steve in the studio to continue the conversation on NetApp.



**Steve Multer;Chief Storytelling Officer**

Thank you so much, David. I appreciate it. And thank you to Joe and Arvind as well for the great work they're doing over there at the NOC.

What's so great about it is, if you've ever dreamed of building and tearing down the entire network in one week, the guys over at the NOC, they're showing exactly how it's done. So it's a great thing to check out while people are here at the show. Remember to keep reaching out to us using #CLEUR. We are in our sponsorship segment here at the show. We are back with NetApp and one of my very favorite people to speak with, not only at NetApp, but also here at these shows. So glad to have Lee Howard here with us, Chief Technology Officer for FlexPod. Welcome back my friend.

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**Lee Howard;NetApp;CTO**

Steve, I've got to say, you look very dapper for the birthday celebration that we're here. It's 10 years of UCS. We've got a decade of FlexPod going forward. That's a wonderful birthday suit, we'll call it.

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**Steve Multer;Chief Storytelling Officer**

A birthday suit. I think you and I are both in our birthday suits.

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**Lee Howard;NetApp;CTO**

Absolutely.

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**Steve Multer;Chief Storytelling Officer**

And looking snazzy as well. This show just took an entirely strange turn. All right. So I want to congratulate you first for everything that you've been doing here at the show. Whenever you and I get the opportunity to get together and talk, we always start out by marveling at the life span of FlexPod. I was mentioning it a moment ago here with Adam as well. It's really quite remarkable. And I asked him why it has lasted as long as it has, so much long-term success. And I want to ask you that same question.

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**Lee Howard;NetApp;CTO**

Well, I think it's largely because this is a, I would say, the industry premier platform of innovation. We couldn't have been here had it not been for our partnership with Cisco. We couldn't have been here had it not been for our partners. Being able to go out and take this platform, wrap their business around this so that they're able to develop proficiency differentiate their own offerings. And I think at the end of the day, the person that really benefits is the end-user customer out there.

We've got over 6,000 petabytes that have been sold of capacity. It's a \$13.8 billion business that we've done and continuing to grow. I wish my kids at 10 will have a lifetime earnings of \$13.8 billion, but it may not be in the cards yet.

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**Steve Multer;Chief Storytelling Officer**

May not yet.

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**Lee Howard;NetApp;CTO**

A little bit of a slow start.

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**Steve Multer;Chief Storytelling Officer**

Now I already get the sense. Your son is 18 months, I think he's going to be brilliant. I think he's going to make it.

Digital transformation is really at the heart of all of this. As we continue to transform not only the industry, but organizations start to transform the way they do business, everything from their data center all the way on down through the stack. How is FlexPod approaching that and helping them to get where they need to go?

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**Lee Howard;NetApp;CTO**

Well, I mean, you look at the 170-plus CBDs that we have on record. I mean it's the most that you have out of any combined technology within Cisco. And that 250-plus person years of engineering that has gone into that has really allowed us to differentiate where you're diversifying out the business risk of choosing FlexPod. All the remediation testing that we do, all the interline, there's a new firmware for one of the components comes out, say a Nexus Switch, we're going to be able to tell you, here's what your upgrade path is going to be. So you're not as a customer having to do that. It's peace of mind for the partner, it's peace of mind for the customer. And I think where we differentiate ourselves, we're not really focused here on doing a tech refresh. That doesn't help anybody.

We're out of the business of workloads. We're focusing on workflows, and that's adding in the human element. And I think the way that people interface with their data, they -- as you can see, they've trusted the data with us. We're setting our cadence of innovation on quality of life improvements. I mean look at what we're doing with Intersight innovation, being able to have visualization into the environments, pulling in app dynamics, pulling in C1. What we're doing with our OCI platform, it's a collaborative environment where everybody is bringing their best-of-breed innovation to bear, and the customers and the partners are the beneficiaries of that.

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**Steve Multer;Chief Storytelling Officer**

So beautifully put. That's a lot of what Liz and Danny were talking about up in the keynote yesterday, into the first innovation talk as well when it all connects together. What's next? You and I are going to talk to each other again in June when we're together in Las Vegas. What is next for FlexPod? Where are we headed from here?

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**Lee Howard;NetApp;CTO**

I think you're looking at -- we've got performed taken care of. I think Cisco really does a good way of rationalizing the environment. Your databases, we're going to have a huge industry disruption of those in the next 18 months. 47% of SQL installs, 40% of Oracle installs. So that core bread-and-butter workload that FlexPod's always been a part of, we're going to have a huge disruptive refresh.

But instead of just going in and looking at that specific database, how can we expand beyond that? Genomic workloads, where we're doing life-changing elements, not just on allowing children to be able to come in and have cancer treatments where they couldn't come in because the dye contrast was too radioactive. We're increasing the clarity on lenses within hospitals to do this. And then taking those same genomic lessons, we're applying it to agriculture, drought-resistant wheat, so that we can feed the world. I mean that's what gets me up in the morning, is designing, architecting is fun. But whenever you see that ripple effect, that the labor that we're putting in, those engineers that are coming in and building this technology for us, that ripple effect is really what keeps me thriving and keeps me excited. So a lot of AIML work you're going to see coming forward.

And again, bringing in IoT to the forefront. I think Liz in her new position, where she's covering both UCS, IoT and the cloud business, this is how you deliver real-time innovation to your customers. This is how you put that data to work for you, the lifeblood of your business, that's how you bring it to bear. So it's an innovation center, not a cost center within IT.

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**Steve Multer;Chief Storytelling Officer**

I just decided while you were talking right there that I need to keep you with me right here on set the entire rest of the day. You gave me about 30 different things that I want to dive deeper into, and I wish we had the time to do it. Maybe you and I will have to do it offline, and then we'll share it with other people at a different time.

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**Lee Howard;NetApp;CTO**

Absolutely. That sounds great, Steve.

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**Steve Multer;Chief Storytelling Officer**

Lee, thank you so much. I always love the opportunity to talk with you. I look forward to doing more of it, and congratulations again to NetApp, and thank you again for that platinum sponsorship.

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**Lee Howard;NetApp;CTO**

Okay. We're here for you, Steve. Really do appreciate it.

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**Steve Multer;Chief Storytelling Officer**

You are indeed in so many different ways.

That is going to wrap up our segment here on our sponsors. And again, we're so grateful for them. Right now, we're going to roll into a video that highlights one of my favorite pieces of the beautiful Cisco puzzle, and that was Networking Academy. They've already touched the lives of almost 10.9 million people across 180 different countries. Who knows, maybe you will be next. But enjoy that VT. We'll be back here live in the studio with our own Nish Parkar. Thank you so much for joining us on broadcast. Away we go.

(presentation)

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

Thank you all so much for joining us, and I'm so excited because we get to spend the next few minutes talking about one of my very favorite things that we do here at Cisco and that is the Cisco Networking Academy. NetAcad is a global education program. It is empowering students with great career possibilities in IT, in cybersecurity and in networking and so much more.

If we look back over the career of Cisco Networking Academy. Since 1997, we have brought more than 10.8 million students through this program across 180 countries, different ages, different backgrounds, different career goals. And I got the very best possible people with me here in the studio to talk with us about it.



Armand Leblois is our Corporate Social Responsibility Manager with Cisco Corporate Affairs, Armand I'm so glad to have you with us today.

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**Armand Gilles Leblois;Corporate Social Responsibility Manager**

I'm glad to be here.

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**Steve Multer;Chief Storytelling Officer**

Excellent. And then standing next to Arman, one of our Networking Academy students from the Dream Team. We're so excited to have you with us. [Abba Namtonobregad].

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**Unidentified Participant**

Yes, like this.

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**Steve Multer;Chief Storytelling Officer**

There we go. I got it perfectly this time. So glad to have you guys with us. Thank you.

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## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

So Arman, let's go ahead and start this out with you. Tell us about your role with Cisco Networking Academy, what excites you about the program?

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**Armand Gilles Leblois;Corporate Social Responsibility Manager**

So I'm the Regional Manager for Europe North, South and UKI, which covers basically from Ireland, all the way across to Israel and a couple of the Nordics and Baltic countries, as well as Benelux. And what excites me about the program is the fact that it is so relevant right now in Europe in this moment in time. I mean, the literature is abundant about the digital skills gap. And NetAcad is bringing a concrete solution to that issue by not only providing some of the most cutting -- cutting-edge and most relevant programming to its students, but also connecting them directly to some of our channel partners, which we'll go into maybe in a little bit. But so what I'm really excited about is that we are really at the heart of kind of the reconversion, the transformation into the digital economy and making it make sense for the average citizen.

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**Steve Multer;Chief Storytelling Officer**

Absolutely. And [Alba], before we go into the details on exactly what happens, tell us about your experience. First of all, how you found Cisco Networking Academy. And then what it's brought you to have us here today talking with one another?

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**Armand Gilles Leblois;Corporate Social Responsibility Manager**

Okay. So I'm studying a degree, a telematics degree. And in my university, they told us about Cisco. And I'm complementing the degree with one of the courses of NetAcad, that's called DevNet, Developing Networks. And well, I'm here because of Cisco said that she -- he needs people to help for the infrastructure. So I'm with the dream team. And well I'm helping here to deploy the infrastructure.

**Steve Multer;Chief Storytelling Officer**

Absolutely. We're going to talk a lot more about what it takes to actually deploy an infrastructure for an event of this size.

Arman, what do you think it is that sets the Cisco Networking Academy apart from other IT education programs that are available out there in the sphere?

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**Armand Gilles Leblais;Corporate Social Responsibility Manager**

That's a great question. I would say there's a couple of elements. The first element that makes us completely different from anybody else is that we're agnostic. So we're not training anybody on a specific type of technology. We are just giving the skills which is, I think, very unique even in the digital educative market. There are very few people who are doing that.

I think that what sets us apart also is the fact that we've been doing this for quite a long time. And the fact that we're still relevant means that time after time when the industry has asked its students and its programming to pivot, we have pivoted successfully. I think CCNA7 is a great example of that. Our budding partnership with DevNet is a great example of that. You have right here, the case in point that it's a popular program already.

And then finally, I would say that the fact that we try to involve our channel partners as much as we can in the process by the Talent Bridge, which is a new tool that we've had for about 2 years now, which is very incredibly successful in linking students with employers but also making sure that they're part and parcel of the construction. So we have regular events where we mix them up with our academies, with our instructors to get that kind of dual exposure because without the leadership of the industry, it's going to be very difficult to continue having the right set of skills and the right set of competencies that we're teaching within the program.

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**Steve Multer;Chief Storytelling Officer**

It really brings us to a good point and something that I wanted to ask you Alba about is as you chose this particular program to be a part of, again, with all of the other programs that are out there, why specifically do you feel like you will gain benefit from being on the dream team here and through Cisco Network Academy. What do you expect and hope to get out of it?

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**Unidentified Participant**

Well, I'm used to work in a laboratory, so it's environment controlled. So when I thought that I can be here working with the Cisco engineers and working in the real life, I can found the real problems and the -- and work with real engineers. So it's a dream. Dream team. It's a dream.

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**Steve Multer;Chief Storytelling Officer**

And people can go to visit the dream team or we can ask these questions directly to you as well to find out about it.

I want to ask you one more very key question. You mentioned the integration a little bit earlier with the different capabilities and all that. How do we keep pace with the changes in our industry? How do we stay up to speed and address those current business challenges, specifically within those integrations?

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**Armand Gilles Leblais;Corporate Social Responsibility Manager**

So what's really interesting about the way NetAcad has designed its programming is that we've specifically built our entire course offering, particularly in the career courses, on a continual dialogue with the industry. So for example, in CCNA7, you have now a stronger part of cybersecurity, a stronger

part of AI that's now present within the course offering. Why? Because we know that this is where the industry is going. We're going gradually into a bridge where the networking professional and the programmer are going to have to meet halfway and both know each other's ambitions so that they can actually collaborate successfully. And I think that, that's what's been the success of Networking Academy. I think that's what's we're -- it's going to continue to be our success in the Networking Academy.

And I would add one last thing, just to bounce off of the -- your last exchange here. What's extraordinary is that when we have events like this Dream Team, where we can take them out of this kind of laboratory atmosphere and say, "Listen, you've got 4 days, you got to put it together." This is the hands-on experience that makes the difference and says, listen, you know what, I learned it, but I can actually do this. So I am 100% employable in any challenge necessary.

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**Steve Multer;Chief Storytelling Officer**

Practical in the field.

Thank you for everything you do within Cisco Networking Academy. Congratulations for being a part of it and on the dream team. And thanks to all of you for watching with Arman and Alba. Appreciate it.

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**PRESENTATION**

**Nish Parkar;Cybersecurity Communications Manager**

We're here at Cisco Live Barcelona 2020, and we're going to be shifting our focus a little bit moving into software. And to help me do that, I've got Vinay Nichani. So welcome, Vinay, firstly. How are you?

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Thank you, Nish. I'm great. How are you?

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**Nish Parkar;Cybersecurity Communications Manager**

Yes, I'm great. Thank you. Day 2 of the show. Tomorrow's the last day. So I'm already starting to feel a bit down because it's my favorite event of the year?

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Well, it's so much fun. I agree.

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**Nish Parkar;Cybersecurity Communications Manager**

Yes, it is.

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## QUESTIONS AND ANSWERS

**Nish Parkar;Cybersecurity Communications Manager**

So you're our VP of Worldwide Software sales here at Cisco. So tell us a bit more about your role and what you do day-to-day here at Cisco?

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Yes. So it's a fascinating role, right? Because software is really at the center of the transformation we're trying to make as a company, as well as our customers are trying to make as they try to be more flexible and agile to deal with digital transformation and all the hosts of things going on. And so in my role, what we aim to do is simplify how we go to market with software across all of our architectures across services to all segments of the market and deliver unparalleled value and simplicity to our customers as they consume more and more Cisco software.

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**Nish Parkar;Cybersecurity Communications Manager**

So I'm hearing simplicity as a really key theme, but making things really easy to access, easy to use for our customers. Is that big theme?

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Yes, that's been the focus, right? Because if you look at it from a customer perspective, what they increasingly care about is they care about their digital transformation. And I think you've seen others say this, but at its core, what that's about is their application, right? We're in a world today where 46% of our customers' customers are more loyal to an application than to a brand. And 66% will avoid doing business with a brand if it's known for delivering poor digital services.

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**Nish Parkar;Cybersecurity Communications Manager**

I know, I'm definitely going to be one of those people. Because when something doesn't work through, I don't get a good experience, I completely shut off and then it's difficult to get me as a consumer back on board, right?

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Totally. When you think about it, like something simple like coffee, right? So we all know Starbucks, I know and love my Starbucks app. It turns out that Starbucks now does over 50% of their revenue via the mobile app, which is mind-boggling when you think about the size and the scale of Starbucks.

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**Nish Parkar;Cybersecurity Communications Manager**

Absolutely.

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**Vinay Nichani;Cisco;VP, WW Software Sales**

And you can talk about that example in a number of different industries. But what that means to our customers is the more time they can focus on delivering that digital experience and that outcome for their customer and the less time they have to worry about integrating piece parts technology, putting the Legos together, as we say, the more successful they're going to be, and that's why it's so critical that we got to simplify how we enable them to unlock that value via our software.

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**Nish Parkar;Cybersecurity Communications Manager**

And so how is Cisco simplifying and making things easier for our customers?

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Yes, that's a huge focus of what we've been doing around software buying programs, right?

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**Nish Parkar;Cybersecurity Communications Manager**

Okay.

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**Vinay Nichani;Cisco;VP, WW Software Sales**

So the core one that most people recognize within that portfolio is the enterprise agreement, which is what it's fundamentally about is, if a customer is willing to fully commit to our software within certain franchises, we will offer unparalleled value to them to enable them on that journey. And so from an EA perspective, as we've tweaked and modified and adjusted that over time, we've seen tremendous success and winning in the market, reflective of the value of bringing customers. We've gone from 600 EAs to 3,000 EAs globally in just a couple of years. And the plan going forward is even more as we unlock that value across every one of our core technology architectures.

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**Nish Parkar;Cybersecurity Communications Manager**

So do you have an example of that?. So if I was a customer that was looking maybe at specific Cisco technology, what benefit as a customer, would I get of buying into that EA?

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Yes, I can give you a couple of examples, right? So one is, let's talk about collaboration as you look to unlock the value to your users of calling meetings, video, et cetera.

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**Nish Parkar;Cybersecurity Communications Manager**

And some really exciting stuff in the keynote, right? Coming up new launches, collaboration as well.

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Fantastic. No, there's a lot of exciting things happening there, right? And so if you think about a customer buying our collaboration, they could choose to go down an à la carte path, buying it for groups of users at a time. And [over] time, all of those subscription licenses are going to have different renewal dates, different co-term dates, they're going to have to go through a transaction every time they hire new users. What we do in the EA is we take all that complexity out.

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**Nish Parkar;Cybersecurity Communications Manager**

Okay.

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**Vinay Nichani;Cisco;VP, WW Software Sales**

So they cover their whole enterprise, everybody has feature parity, they don't have to worry about renewing different things at different times and we give them 20% growth built in. So if they hire 10 new users, they're not having to go through a transactional process. They just download licenses and go and again, focus on the outcome, focus on enabling the work space.

The other example that's really good is what we're doing on infrastructure, so very different market. You'd have a collaboration or security for users, you can talk about infrastructure and things like DNA for switching, routing and wireless.

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**Nish Parkar;Cybersecurity Communications Manager**

Yes.

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Same concept of everything on one contract, everything co-term, but now because we're not talking about users, the concept of built-in growth is less relevant. And what our customers have told us they really care about is partnering them on their deployment journey, which typically takes time. So we're doing that as we're building a ramp to make their deployment easier, and they love that. We've seen a lot of success with that offer as well.

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**Nish Parkar;Cybersecurity Communications Manager**

Amazing. And I keep hearing about these 3 magic numbers, right? So I'm trying to guess what they are.

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Yes.

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**Nish Parkar;Cybersecurity Communications Manager**

So tell me a bit more about what that means.

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**Vinay Nichani;Cisco;VP, WW Software Sales**

So the 3 magic numbers are: Number of contracts, number of renewal dates, number of partners.

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**Nish Parkar;Cybersecurity Communications Manager**

Okay.

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**Vinay Nichani;Cisco;VP, WW Software Sales**

And so we typically see with our customers, and it varies based on size, but our largest customers, as we've gone to subscription, typically have hundreds of contracts with us and hundreds of renewal dates across dozen part -- dozens of partners, smaller customers have an order of magnitude less, but still more complex than they can manage at their size. It's very painful. One of our customers has estimated that every contract they have

cost them \$3,000 in OpEx to manage. And so the focus of the 3 numbers is helping our customers understand that landscape and ultimately, taking those 3 numbers from dozens and hundreds down to one, one and one, which is a tremendous operational and financial benefit to them.

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**Nish Parkar;Cybersecurity Communications Manager**

Absolutely. You mentioned partners there. So how -- what's the benefit for customers of having fewer partners as well? Because I know some like to diversify and have different skill sets. What's the benefit of customers having fewer partners when it comes to software?

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Yes, it's a great question, right? I think what we've seen from many of our customers is they want to do business with Cisco more strategically, and they also want to do business with partners more strategically. And the ones that really build the value can drive life cycle value towards getting to their outcome, they are more than happy to form a more strategic partnership with versus transactionally buying and bidding every deal, right? So there's a decision that has to be made there. What most customers are telling us is that if the partner can deliver that value and help them on that journey, they're more than willing to form a more strategic relationship to drive that versus doing business across a lot of partners that they can't keep track of themselves.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. That makes a lot of sense. So we've got just a couple of minutes left and we just need to wrap up. But I want to know if people are watching online, they're here at the show...

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Yes.

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**Nish Parkar;Cybersecurity Communications Manager**

How do they learn more about Cisco software and enterprise agreements?

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Yes. So there's a couple of places you can go, right? One, there's a lot of resources online.

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**Nish Parkar;Cybersecurity Communications Manager**

Okay.

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**Vinay Nichani;Cisco;VP, WW Software Sales**

So you can go to [cisco.com/go/software](https://cisco.com/go/software), and there's a lot of information there on enterprise agreements and other such things. But where I would encourage people to is start with your Cisco account team, right? Cisco account team or your partner account team, our partners are also increasingly enabled to lead this conversation because really where the value is and where the rubber hits the road, it's all specific to our customer-specific environment, and by working with your account team, understanding your 3 numbers, understanding the outcome and the transform objectives you're trying to reach, we can really partner to form the right agreement, the right relationship and the right structure to drive that value together.

**Nish Parkar;Cybersecurity Communications Manager**

That's great. Well, thank you so much joining me in the studio, sharing some top tips around software and point people to where they can learn more.

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**Vinay Nichani;Cisco;VP, WW Software Sales**

Great. Thank you, Nish. I really appreciate it.

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**Nish Parkar;Cybersecurity Communications Manager**

Thank you, Vinay.

So we're now going to go ahead and just watch this really short video to learn a little bit more about software. Join us and don't go away.

(presentation)

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## PRESENTATION

**Zane Powell;Associate Sales Representative**

Welcome back, everybody, and we're here in the compass section of the show. Now you probably notice something different. And yes, it's this beautiful, Cisco jacket. I was given this by the Cisco store. Now if you're here in Barcelona, and you want a jacket, and I don't see why you wouldn't because it looks fantastic, head along to the store. If you're not here, you can grab one online because the online store opens on Monday.

But anyway, we're talking all things software. And I'm here with Bryan Benke. Bryan, can you introduce yourself?

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**Bryan Benke;Cisco;Senior Engineering Director**

Yes, Bryan Benke from the Smart Licensing team. I've been at Cisco about 20 years. So love working for Cisco.

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**Zane Powell;Associate Sales Representative**

You're a veteran, you've been here a lot longer than me. I've only been here 7 months.

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## QUESTIONS AND ANSWERS

**Zane Powell;Associate Sales Representative**

So Bryan, look, we're living in the age of software, whether it's Netflix, whether it's music streaming. What are the influences behind Smart Licensing here at Cisco? And how does that really tie in with our own software transformation as a company?

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**Bryan Benke;Cisco;Senior Engineering Director**

Yes. Well, thanks. Yes, it's been a great thing for Cisco because we have so many customers with so many different products. And so they began to lose track of all their licenses. Some of our customer service have over 10,000 devices. So we created a digital wallet for them, we called it a Smart Account, and it's kind of like your banking account. You put all your licenses into a certain account, and you can track and monitor your licenses. You know how many you bought and the like. And so it's been -- that's one of the major things we've been doing.

And the other is that we used to give customers a license for a device, and we have the devices behind us here. And they would just -- they would lose the licenses for the boxes. So someone would leave the company, they would no longer know what the license was for a particular device. So we created a pooling concept. The pools are in their Smart Account. They can see all their licenses. And then they just come get one out of the pool, use it. And if they want to return it to the pool, they can return it to the pool of licenses.

And so as you look at Cisco, and you think of how we're moving to software subscriptions and enterprise agreements and the like, it's really one fundamental to our strategy that we can get -- customers can see their license, their subscriptions and all that.

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**Zane Powell;Associate Sales Representative**

So simplicity. It seems like you're making things simple for customers.

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**Bryan Benke;Cisco;Senior Engineering Director**

Yes. And what we tried to do is we have a lot of different groups at Cisco. We have behind us, the routing and switching. We also have collaboration. We have security. And so we have one common license model for all of Cisco to help people navigate through Cisco and the license structure.

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**Zane Powell;Associate Sales Representative**

So when you look at some of these larger customers, customers that maybe have like hundreds, thousands of licenses, how are you making things flexible for them? How are you making it easier for them to start consuming these licenses?

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**Bryan Benke;Cisco;Senior Engineering Director**

Well, in that Smart Account, kind of like you have like a checking or savings in maybe your daughter Sally's college account, you can set up your account to be that way. So if you're a company and you have different divisions of the company, you can make a virtual account for each of the different divisions. And then you can -- they can manage their own licenses and customers really love that flexibility.

And again, with subscriptions, it's so difficult to know when it's expiring in 3 years, what's expiring in 5 years. And so this is a one-stop shop where they can see everything about their licenses. We not only we include their licenses in there, but we also include their contracts, they can see their tax support cases. And we have a new product called My Cisco Entitlements, and that product gives them access to all the information in a one-stop shop.

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**Zane Powell;Associate Sales Representative**

Brilliant. So you've really given the customer a single pane of glass over it, as to what they have from Cisco. So when we're looking at Cisco Live, it's all about new innovations. It's all about what's happening in the world of Cisco. What's new when it comes to smart licenses?

**Bryan Benke;Cisco;Senior Engineering Director**

Well, one is that when you look at like a lot of countries, India, in particular, a lot of the African companies -- countries, they don't have like real big company structures behind them. And so we have a new thing that's for small, medium businesses that they can get -- quickly get their licenses without going through as much of the paperwork and the like. And so we've really rapidly involving the small, medium businesses.

We've also are creating a hierarchy of licenses. So if a company has a division in Germany, they can also have, beneath that, they can have all the different states or the locations where they want to have their licenses stored. So a lot of people like that.

And the last thing we say in licensing is, we call it, the rise of the controllers, it's kind of a like terminator.

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**Zane Powell;Associate Sales Representative**

The rise of the machines.

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**Bryan Benke;Cisco;Senior Engineering Director**

Rise of the machines, but it's the rise of controllers. And so there's DNAC, there's vManage, there's [FDM] and security. And what we're trying to do is that we'll have these network controllers manage just the licenses versus an individual device having a license on it. And so it's going to be much simpler for customers. They just manage the controllers and not the individual devices.

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**Zane Powell;Associate Sales Representative**

Brilliant. Well, look, it sounds really exciting. I mean, in the world of licenses.

Final thing just to close off, Cisco Live in one word?

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**Bryan Benke;Cisco;Senior Engineering Director**

It's exciting, and we just love meeting the customers. It's all about the customer here at Cisco Live.

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**Zane Powell;Associate Sales Representative**

That wasn't one word but I'll let you off because it's so exciting. So thanks very much for you time.

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**Bryan Benke;Cisco;Senior Engineering Director**

Thank you, sir. All right. Thank you.

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**Zane Powell;Associate Sales Representative**

So we're going to throw it over to the VT. See you later, guys.

(presentation)



## PRESENTATION

### **Nish Parkar;Cybersecurity Communications Manager**

Were here at the Cisco TV studio here at Cisco Live Barcelona 2020, and we're going to continue talking about Cisco and software and that video was setting us up really great for this next guest that I've got here in the studio. So I'm here with Bobby [Casavon]. Hey Bobby how are you?

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### **Unidentified Participant**

Hi. Nice meeting you. Thanks for having me here.

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### **Nish Parkar;Cybersecurity Communications Manager**

Yes. Good to meet you, too. Thank you for coming into the studio and spending time with us.

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### **Unidentified Participant**

Absolutely. Absolutely exactly.

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## QUESTIONS AND ANSWERS

### **Nish Parkar;Cybersecurity Communications Manager**

So you're the Senior Director of CPS Transformation here at Cisco. Tell us a bit more about your role and what you do day-to-day here with Cisco?

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### **Unidentified Participant**

Absolutely. So you heard from Vinay and you heard from Bryan, about how they are trying to simplify the way they offer the software so that it's easy access for our customers, how we manage licenses. What I do is -- our team is made basically focusing on the fact that how do we simplify the overall access to what the customer's purchased. And it is not just the software. It's software, subscriptions, hardware as well.

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### **Nish Parkar;Cybersecurity Communications Manager**

So everything. All in one place.

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### **Unidentified Participant**

Everything in one place. And we have heard from customers that with the introduction of smart licenses, we introduced a Smart Account.

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### **Nish Parkar;Cybersecurity Communications Manager**

Yes.

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**Unidentified Participant**

And our customers are constantly asked us for, "I can only see my smart licenses. Can I see my subscriptions? Can I see my contract? Can I see my devices? " So what we have done is we have brought all of that data together so that our customers can confidently have access to manage and secure and give access to their -- the providers and consume it.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. So this single place of access, I understand it's called My Cisco Entitlements, right?

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**Unidentified Participant**

That's correct.

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**Nish Parkar;Cybersecurity Communications Manager**

So tell us a bit more about MCE and how it fits into Cisco's why the software transformation. As you said, we have been Vinay in the studio just a few minutes ago. How does that fit into the bigger picture of Cisco strategy?

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**Unidentified Participant**

So with MCE, what we have done is we have brought together, irrespective of what buying programs you buy or software entitlement, we are having a single place for you to come and access. It is the first time we have invested in providing a 0 cost platform to our customers to be able to simplify and have a single place to go to for accessing all their assets and entitlements. What this really translates to is ease of doing business with Cisco, right? And there is -- we talk about efforts when it comes to customer experience, and this is a key part about -- I need to be able to see what I have, what I own, what's my risk, and am I using it, what I bought, am I at risk of exposure and compliance. So it's basically a platform designed to by a click, give that insight to our customers and transact on what they really want to transact on.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. And here at the show here at Cisco Live, we've got -- I think it's 17,000 attendees here.

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**Unidentified Participant**

That's right.

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**Nish Parkar;Cybersecurity Communications Manager**

And a large portion of it are actually partners of Cisco as well, right?

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**Unidentified Participant**

That's right.

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**Nish Parkar;Cybersecurity Communications Manager**

So how do your partners play a role when it comes on MCE?

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**Unidentified Participant**

Absolutely. So what we have done is, end of the day, Cisco, our partner, are delivering [assets] and entitlements through the various offer motion to our end customers. So we started focusing on delivering this basic foundational capabilities for our customers, and then what we have done in the last 3 quarters is to do a full co-design with our partners to understand how they can shape and enable our clients. So we've got some powerful set of capabilities, which we have co-designed with our partners, which we are currently releasing it, and they'll be able to -- they are essentially looking for how can I serve my clients better, how can I reduce my OpEx, and how can I be able to easily gain access to my customers just so that I can deliver the outcomes what I need to deliver for them, right?

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**Nish Parkar;Cybersecurity Communications Manager**

Yes.

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**Unidentified Participant**

So that's what we're focusing on for our partners as well.

And then the last mile license delivery is a key critical capability, which they are looking forward to making sure that the timely delivery of licenses is a critical component to how customers would have access to their licenses, right?

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. And so obviously, it sounds like your team is very popular with customers. You're making things easier for them, simpler for them, putting everything all into one place for them.

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**Unidentified Participant**

That's right.

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**Nish Parkar;Cybersecurity Communications Manager**

So what's the feedback that you're hearing from existing users of MCE?

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**Unidentified Participant**

Absolutely. So number one, the customers are loving it, right?

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**Nish Parkar;Cybersecurity Communications Manager**

I'm not surprised.

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**Unidentified Participant**

It's pretty simple. And what they're actually doing is that they are able to get in, get access to all what they have never seen. The entire book of business, for the first time, they are seeing it because our customers buy products and services from multiple partners and we are bringing all of them together and enabling our partners also to be able to serve our customers. So it's becoming a much easier way to transact. And our customers are really excited to get access to everything what they need. And they're also -- we are also standardizing the whole user life cycle management across our digital interactions they have at Cisco for all assets and entitlement. That's another big value for our customers, and they really are liking it, and they're transitioning it into the MCE platform. Today, we have around 2,500-plus customers already on the platform, using it.

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**Nish Parkar;Cybersecurity Communications Manager**

Okay.

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**Unidentified Participant**

And the partners will be onboarded pretty soon with their value, what they want, they focus on monetizing it.

Simple example, what Vinay was highlighting about flex plan and EAs, right?

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**Nish Parkar;Cybersecurity Communications Manager**

Yes.

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**Unidentified Participant**

Even in MCE, customers can come in, partners, when they do a partner-led EA or a partner-led flex plan, partner can see what they need to see and serve the clients from an EA standpoint. Customers can gain access to their enterprise agreements and see what their consumption levels are and where they're using, where they're not using it so they can drive the value and realization.

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**Nish Parkar;Cybersecurity Communications Manager**

So it's the power of using the customers' own data to actually drive more and more of the outcome?

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**Unidentified Participant**

Absolutely. Absolutely.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. And I know you won't not be able to tell me too much about this, but I'm going to try and get some information for our viewers. What are some of the upcoming features in MCE? What can you share?

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**Unidentified Participant**

Absolutely. Absolutely. For our customers, what we have delivered to date is to have that comprehensive access.

**Nish Parkar;Cybersecurity Communications Manager**

Okay.

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**Unidentified Participant**

And manage it and secure them, right? And they can create cases. But that is not it. It's a highly transactable platform. By the way, they can also do product upgrades today, which are transactions which are flowing through the platform. We'll be delivering in the second half, a fully functional transactability on the platform, meaning I can right click, deliver token, generate licenses.

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**Nish Parkar;Cybersecurity Communications Manager**

The second half of 2020?

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**Unidentified Participant**

Exactly.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. Okay.

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**Unidentified Participant**

And they can do all the actions, what they need to do, including self-service asset management, right?

From a partner standpoint, what we are doing is we are enabling them with the capability focused on making sure that the last mile license delivery experience is simplified because that is a big pain point for our partners to be able to easily deliver digital assets. And we are also enabling them capabilities to monetize on Smart Account management, asset management and the whole EA flex plan consumption visibility and transactability is also something we are working on for enabling for our partners.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. So enablement for both customers in terms of their outcomes, but just as much for partners to be able to bring more value as well in partnership with Cisco.

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**Unidentified Participant**

Absolutely.

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**Nish Parkar;Cybersecurity Communications Manager**

I love that. So if people want to be learning more about MCE, where can they go to learn more?

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**Unidentified Participant**

It's pretty simple. If you go to [cisco.com/go/mce](https://cisco.com/go/mce), you can have access to all of that insights. And there is a sign-me-up button there. If you click and sign me up, we have teams waiting to onboard you as a customer, you as a partner. If you forget that part, even if you Google for My Cisco Entitlement, it shows up on the top, you just click and do exactly what you need to do.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. Amazing. Well, thank you for joining me.

I actually want to bring David into the conversation now. So David, you just joined me here in the studio. How are you?

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**Unidentified Participant**

Hi, Nish. Great to be here.

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**Nish Parkar;Cybersecurity Communications Manager**

Good.

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**Unidentified Participant**

Thanks for having me on.

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**Nish Parkar;Cybersecurity Communications Manager**

You're very welcome. I feel like we're having a great time. And most (inaudible) have been on the studio yet.

So obviously, you're out with customers all the time. Cisco, we've talked about here in the studio today. It's obviously, moving more and more towards software. So what are you hearing? Obviously, you're based in Germany, but I'm sure you have global customers as well. So what are you hearing from customers when it comes to software. Is it a reality in terms of that transition?

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**Unidentified Participant**

Absolutely. I mean, not only are we and all other vendors, bringing out a lot more software products that have licenses that need to be managed, but also just the complexity of those licensing schemes in many cases is going up, up and up. So the -- and My Cisco Entitlement, I think is a perfect answer to these questions because, and I'll give you an example. I've got a customer in Germany, they're not big. They don't have like a dedicated team that looks after licensing, but they have bought their subscriptions from -- the subscriptions for one product from 3 different partners, they've got 3 different expiration dates and they're really just losing track of where all those licenses are going and coming, you know?

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**Nish Parkar;Cybersecurity Communications Manager**

Yes. So obviously, Bobby...

**Unidentified Participant**

That is exactly the point. So what we have done is, while we shift and we start to enhance and enrich our portfolio with software, we realize that our customers will buy through multiple channels, and they need to have a single place for asset software asset management. So we have built in software asset management, software life cycle management as part of the platform to deliver that value for our customers.

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**Nish Parkar;Cybersecurity Communications Manager**

That's amazing. And obviously, we've got about a minute left. So I just kind of want to wrap up on what's going on around us because obviously, Day 2 here at Cisco Live. So Bobby, is this your first Cisco Live or have you been here before?

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**Unidentified Participant**

I've been here for a few times. Few years.

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**Nish Parkar;Cybersecurity Communications Manager**

You've been -- so obviously, a Cisco Live veteran. And what would you say is that the highlight of the show this year? Obviously, software, I think now more than ever, is really relevant to our customers. There's lots of conversations. But what has been your personal highlight of the show so far?

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**Unidentified Participant**

Yes. I think the, this year, this Cisco Live session, I see a lot more focus on DNA and other software focus, which is great. And I can see a lot of participants focused on those areas as well and partners participating, and partners also focusing on this transition and the software.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. And how about you, David. Obviously, we've got one day left. It's your first time hosting. What's been your highlight so far? I know we're going to do this again tomorrow, so choose wisely.

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**Unidentified Participant**

Yes, it's a tricky one. I mean, there's been so much content that we've been able to see, even though we've been running around kind of a little bit mad wishing just to catch some of the really cool sessions. But I've got to say, I mean, that opening keynote yesterday was just fantastic. Really exciting to hear, especially what's happening in the compute space. I think what Liz and Tony said about all the different domains and the transition to cloud and how we're enabling those is very much -- a very exciting time to be a part of Cisco. And also to be a customer or a partner working with Cisco.

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**Nish Parkar;Cybersecurity Communications Manager**

I completely agree with you there. Well, thank you so much, Bobby, for joining me and helping us understand more about software.

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**Unidentified Participant**

Thank you for having me here.





**Nish Parkar;Cybersecurity Communications Manager**

David for showing your highlights and bringing it all to life.

So we're going to clear us out the software segment now. Don't go anywhere. Stay Tuned.

(presentation)

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**PRESENTATION**

**David dela Cruz;Commercial Account Manager**

Hi, guys, and welcome back to the Cisco Live studio here in Barcelona. I'm really glad that we are shifting our focus now to SD-WAN. I think it's one of the most exciting topics that Cisco can talk about because it's such a hot topic, I think, for so many customers that I personally talk to all the time. Our customers moving a lot of their services into the cloud, and they had bandwidths and security requirements are increasing through that and they're looking to simplify their SD-WAN, simplify -- sorry, their WAN operations, simplify how it all works and also reduce the costs, obviously, that are associated with it. At the end of the day, those costs keep increasing and unfortunately, the budgets aren't keeping pace. But also still need to remain secure regardless of if their applications are hosted in their local data center or if they're going out more into the cloud, which is definitely the case for a lot of customers.

I think Cisco is in a great position to talk about this topic. We invented the router, so 35 years ago, and we are at the forefront also of SD-WAN development. So we want to go into a little bit more detail on SD-WAN, and Steve is on the show floor. So Steve, what have you got for us?

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**Steve Multer;Chief Storytelling Officer**

Thank you so much, David. I do appreciate it. You just nailed a lot of the great capabilities of what's going on with SD-WAN. So we're in the middle of the Cisco showcase. We're out in the World of Solutions.

As you just said, SD-WAN, software-defined approach to managing your wide area network. So this is what allows you, as you said, to reduce your cost, transport your independents across your NPLs and your 4G, 5G, LTE, so many connections. Plus, you also got to improve your application performance, and you get better agility out of your system. But even if we go beyond that, it's the better user experience, is what it comes down to more efficiency for your SaaS, your public cloud, you simplify your operations, you get more automation, so many great benefits and the security that David, you mentioned, a moment ago, and we're going to talk about that, too.

I'm going to bring Ben Brophy in here with us, systems engineer, how are you Ben?

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**Ben Brophy;Cisco;Systems Engineer**

Hello. I'm doing well. Thank you. And yourself?

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**Steve Multer;Chief Storytelling Officer**

I'm so glad we get a chance to talk. Thank you for your time today.

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**Ben Brophy;Cisco;Systems Engineer**

Yes, likewise.

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## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

All right. Let's talk about our Cisco SD-WAN story that's unique for Cisco Live this week. What are we wanting to make sure people know and understand when they stop buying

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## PRESENTATION

**Unidentified Company Representative**

Hello, everyone, and welcome to the Innovation Talks theater. My name is Toby, and I have the pleasure of being your host today. Now we're all so glad that you've made it to Cisco Live 2020 here in Barcelona, and there's a lot of us here. And together, we're going to build the bridge to get you where you want to go, so you can make anything possible.

Here at Cisco Live, you'll learn new things, be inspired and create a path to endless opportunities. This week, we're hosting 14 Innovation Talks here in this theater, where we'll share with you our latest solutions, innovations and, of course, best practices.

Today, I'd like to welcome Sachin Gupta, Senior Vice President of Product and the Intent-Based Networking Group, to the stage. A Cisco veteran of 23 years, he leads the enterprise networking portfolio that includes the infrastructure and software from users and devices all the way to applications and data. This includes the campus, branch WAN and now cloud networking organizations.

It's a pleasure to welcome to stage, Sachin.

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**Sachin Gupta - Cisco Systems, Inc. - SVP of Product of Intent-Based Networking Group**

Thanks, Toby. All right. Good morning, everyone. Good morning. It's a pleasure to be here back in Barcelona to talk to you about the latest and greatest of what's happening in enterprise networking.

So first of all, let me explain the topic, why is it cloud and the modern workspace? As Toby mentioned, I'm responsible for networking from users and devices to applications and data. More and more of the applications you're consuming, we're consuming are in the cloud. And more and more, we don't actually go to a physical place to do work. We work in any space that we occupy. And so for me, these are 2 extremely important trends that are impacting how you think about networking. It's almost turning networking upside down.

So now let's get into cloud and the modern workspace and what are the innovations that Cisco is bringing and what are the partnerships we're bringing to help you leverage and maximize the opportunity with these trends. So first and foremost, cloud is absolutely here, undeniably here. I think everybody understands and everybody gets it. We wanted to understand the scale of this in a better way. So we ran some customer surveys. And what we found is more than 80% of our customers are using at least 2 public cloud providers.

So nobody is using just one, more than 80% are using at least 2. And the majority have a hybrid environment. They still have applications in on-prem data centers, but they're also using a combination of maybe AWS, Azure, Google Cloud or IBM Cloud. At the same time, we find that these customers are consuming 100 or more SaaS applications. They're paying for at least 30 but are actually using inside their environment somewhere more than



30 SaaS applications. And the connectivity fabric that allows you to deliver the security and the experience you need end-to-end is the SD-WAN fabric. And we're going to talk more about that.

Now let's talk about these verticals and why cloud is so important. In retail, how do I engage with my customers through every single channel and manage my data? In education, how do I deliver massive open courses, like through Coursera? In health care, how do I take my patient data to provide better patient care, to provide better cures? In finance, how do I scale up and down during the busy season and how do I use data analytics again to enrich my product? And in manufacturing, how do I track things through the supply chain very accurately and have a digitized supply chain?

And when you look at the statistics from many, many analysts in all of these verticals, 1/3 of retail workloads, 1/2 of all the manufacturing software and the CAGR, the growth rates expected for cloud are tremendous. So why are all these applications and why are all these use cases moving to the cloud? Well, quite simply, cloud provides significant benefits.

You're all very familiar with this. It is an automated environment. Scaling up and down, adding workloads, getting storage capacity is extremely simple, very agile. You can move very, very quickly. Application developers don't need to wait. You can move and create an application environment very, very quickly. And it provides tremendous flexibility on where you want to run your applications, how you want to develop and how quickly you want to move.

Now what happens is you've got cloud happening on one side and you've got the desire to adopt cloud. And you need to leverage the technologies available to address that trend. And at the same time, your users are predominantly mobile and are expecting to be able to work from anywhere, right? So this is -- comes back to my topic, which is how do we help you address the trends of the cloud and the modern workspace.

Let's zoom in to the cloud network a little bit more. All right, many of you may be familiar with this, some of you may not be. When you think about what's happening inside AWS, inside Azure, inside Google Cloud platform, you find networking constructs, you find transit gateways. Think of that as an edge router from AWS. You find VNet, you find peering requirements, you find shared services, identity providers that you need to connect into, remote users that you need to bring in, connectivity that you need to extend into an on-prem data center. There's a whole new set of orchestration tools, monitoring and visibility tools that each cloud provider provides. And there's other new vendors that are coming in, providing tools to manage this environment.

So when you look at all of this, yes, there's a lot of networking going on. But it's not about physical routers that are going between your sites and physical data centers. This is now a virtual network, security and application services that may be natively provided by your cloud providers or that you need to instantiate and manage in a simple way, right? So this can get very complicated very quickly and the world is moving very rapidly. So we're providing an architectural approach to help you navigate this world of cloud.

First thing I want to talk about is our SD-WAN strategy. The Cisco secure cloud scale SD-WAN strategy says, it doesn't matter where your users and devices are. They can be remote, they can be in the branch, they can be in a campus. They can be connecting from any method, 4G, 5G, MPLS, Internet, satellite, it doesn't matter. And your applications or your services can be sitting anywhere. It could be in a carrier-neutral facility, a colocation, it can be a public cloud service, it can be a private data center, it can be a SaaS application.

And what we are providing with our SD-WAN architecture is an ability to automate this entire environment, an ability to make sure you have visibility in analytics. You can deliver security at exactly the right place, whether it's in your branch site, inside the colocation in -- as a service using our secure Internet gateway or in the cloud itself, in the public cloud itself as a virtual security service. And then last but not least, how can we help you optimize the application experience in this environment? But SD-WAN isn't the only solution you need from Cisco or the only solution you need to address the cloud needs.

When you think about application deployment on-prem, there's 3 key technology elements that become important here. First, how do you provide that WAN connectivity for your users and select the best path? And that's SD-WAN. I just talked about the SD-WAN architecture. Then you think about how do I provide policy-based segmentation for my data center resources, my compute resources, for my network resources based on the application need? And that's where ACI, our Application Centric Infrastructure, comes into play. And then you think about where do I put my

firewall? Where do I put my IPS service? How do I implement security in this environment? And that's where our security portfolio with something like Cisco Defense Orchestrator to manage that comes into play.

So those are the Cisco solutions that you will use for an on-prem deployment. And what we're doing is we're taking all of those solutions and making them available for the cloud. SD-WAN fabric extending into the cloud, ACI anywhere, cloud ACI enabling you to have the same policy control in the cloud. And then finally, Cisco Defense Orchestrator or tools like Stealthwatch also working for your workloads in the cloud. So what we're after is how do we provide that consistent experience for you as IT for all your application environments, whether it's on-prem or in the cloud.

But we cannot do this alone. We need to make sure that we're having the best industry-leading partnerships in order to deliver the solutions you're looking for. So I'm going to walk through some of the recent partnerships that we've announced.

First one is with AWS. So if you're familiar with the AWS environment, they recently introduced this notion of a transit gateway. In the transit gateway, you need to be able to host in a transit VPC your SD-WAN virtual router to extend the SD-WAN fabric into AWS. So first and foremost, how do I move securely the traffic and pick the best path from my sites into AWS. And for that, we can extend the SD-WAN fabric. That's number one.

Number two, we announced the capability of ACI to be able to not only manage policy for workloads and VPCs inside AWS, but AWS also provides an extension of their cloud on-prem using AWS Outposts. And you can use ACI, Cisco ACI, to manage policy inside AWS as well as in AWS Outposts by bringing their cloud on-prem.

And then last but not least, AWS announced a new capability called ingress routing. And we're able to use the ingress routing feature to stitch and service chain security services, other services inside the cloud. And so you could have a virtual firewall instance, for example, and we can stitch the right traffic through that firewall and automate that experience. And then you can manage that firewall using Cisco Defense Orchestrator. And you can use Stealthwatch Cloud to detect threats inside that cloud environment. So once again, taking SD-WAN, ACI and Security and taking that portfolio and extending it through our partnership with AWS in all of those areas.

Now similarly, Microsoft has different constructs. So they have VNets. They have Virtual WAN. They have the Virtual WAN hub. We also announced a partnership with Microsoft where you can extend the SD-WAN fabric, similar to AWS, on-prem into Azure and leverage their Virtual WAN phone and make sure that all your security policies, your encryption, your traffic steering, app optimization can go from your site all the way into Azure as well.

Next up, with Microsoft again, we're enhancing our partnership on Office 365. We actually -- this is not the only SaaS service we work with, but this is the most recent announcement from us. And what we do here is we exchange telemetry data with Office 365 to ensure that you get the best experience. And our testing has shown that you can get 40% or better performance, better experience with Office 365 with the Cisco SD-WAN solution. The reason this is important is Microsoft says, "Connect into Office 365 as directly as you can and leverage the Internet if you need to, but connect to my backbone as quickly as you can."

But over time, the Internet path may not be the best. You may need to use your MPLS service. You may actually need to go to another regional hub or to your headquarters to get the best O365 experience. And with our SD-WAN solution, working with Microsoft, we're continuously monitoring every connection, every option that you have in order to route that traffic using the best path possible to deliver the best experience, SD-WAN architecture, ACI, Cisco Security, all providing a consistent approach on-prem or in the cloud and doing it with the industry-leading partners in this space so that you have an end-to-end solution.

You can imagine as we go forward. So if you look forward, a lot of the talk has been, "How do you bring sites, branches and connect them into the cloud?" And as you can see, cloud-to-cloud connectivity, peering connections, leveraging direct connect, express routes, all of the new capabilities and requirements from cloud is what our SD-WAN architecture and solution will continue to deliver upon. So a lot of exciting things happening here. There's a lot of sessions at Cisco Live, where you can get a lot more details on what's happening from a cloud point of view.

I now want to switch gears and talk about the mobile workspace -- or the modern workspace. In this modern workspace, it is absolutely mobile-first. And mobile-first could be Wi-Fi, it could be cellular, 4G, 5G. For the things that are connecting, it could be Zigbee, Thread, it could be any IoT protocol, but it is absolutely a mobile-first world. At the same time, it needs to be fully integrated. As you roam from one environment to the other, your experiences need to be seamless. And this modern workspace has to adapt. If a different type of client comes in or if there's a lot more users in a particular space, we need to be able to provide the performance, the capacity needed to ensure the best experience for everyone at all times.

In a modern workspace, things cannot go down. In a mobile-first world, it cannot be that your wireless service is out because you're doing an upgrade or because more users are connected to the network. So how do we leverage the power of data, the power of the infrastructure and the architecture to address these needs? So if you just take a look at just a random sort of sample of a workspace, you can see that you have all kinds of clients connecting. You might have clients that do need to be wired in. They just require 10-gigabit performance, very, very high performance and it's better to just wire them in. You're going to find probably that the majority of clients can be wireless. But they can be running all kinds of wireless stacks. And so how do you ensure that you can provide the best experience based on the capability of every client using the wireless technology?

You're also going to find all kinds of things that are connecting. And they may not be Wi-Fi at all. They may be Bluetooth, BLE, they might be Zigbee, Thread. How do you manage those? And then you have shared spaces, you have conference rooms, you have collaboration. There's a lot of different things that are happening in this workspace that you need to manage. How do you provide the best high-speed connectivity? How do we provide mobile collaboration, so you have voice and video on your mobile device and any kind of mobile device?

How do we make sure that IoT devices can connect in, you can securely classify them, but your users and your devices don't end up infecting each other? So that connected coffee machine, if somebody compromises that coffee machine, that threat should not be allowed to proliferate throughout the infrastructure, throughout the environment. And how do we make sure you get the -- saw the WebEx announcements. How do you get the best experience for WebEx in this environment all the time?

Now how do you also in this space leverage the power of location data? So how do you know, for example, that a conference room is reserved, but nobody is in it. One is occupied, maybe it's not reserved and another one is open? How can we integrate your collaboration world with location analytics and your mobile experience to help you find that free and open conference room very quickly? So that's just one example of location data. But you can imagine in retail or guest experience or in health care, for patient care asset tracking, location analytics becomes very, very important.

So let's talk about the stack, the intent-based networking stack that we deliver to help you address all of these needs. Let me start from the bottom. It all starts with infrastructure that is highly programmable, that is highly reliable. You can use NETCONF YANG APIs, OpenConfig APIs to provision it. You can do in-service software upgrades. You can do rolling access point upgrades, which means that on a floor, you don't lose 100% of the connectivity because we can upgrade sets of access points at a time. And then we can upgrade the controller without bringing the wireless controller down at all. We can also provide patching, where instead of upgrading the entire software, you can just apply that one change that you need to the software.

And finally, that modern operating system needs to provide streaming telemetry. How can I understand what's going on in the infrastructure to optimize it as well as to understand what security threats might be there? On the access point side, it's also really important that they only -- that they are not only Wi-Fi 6 access points, they actually can speak BLE, Zigbee, Thread. They can support app hosting, where if I need to make a local decision for those devices that are coming in, I can do that in the infrastructure.

So that's what the Cat 9K provides. The Catalyst 9000 is switching and wireless access points and wireless controllers all in one family, all running the IOS XE operating system, consistent end-to-end. It's been the most successful product in company history, fastest-ramping product in Cisco history, continues to be extremely powerful. But it all starts with infrastructure that is ready for intent-based networking with the Cat 9K.

Next up, we have some security products. So Stealthwatch, and as I talked about Stealthwatch Cloud, you also have Stealthwatch for your on-prem traffic. How do we help you detect threats? And not only threats in open traffic, but given that perhaps 60%, 70% of the traffic, even your LAN is encrypted, how do you detect threats that may be trying to proliferate inside encrypted flows? And that's a capability that with the Cat 9K and

Stealthwatch you can get. Then you move into ISE, where Cisco Identity Service Engine helps you identify everything that's connecting, place them into groups, make sure that they are compliant with your business policy and give them the right access rights into the infrastructure.

And on top of that, you have Cisco DNA Center. This is the controller for this environment. Cisco DNA Center is about providing the automation for all of that underlying infrastructure. Number one, you plug a switch in, you plug an access point in, it automatically [comes] up with the right software image, right configuration. And as you want to change software, you can automate the software management in its entire life cycle, number one. Number two, we take all of that streaming telemetry. We apply artificial intelligence, machine learning to it. And we help you identify what are the most important issues, why are clients having low throughput on these access points on this floor and what you need to do to resolve that issue. So network assurance with AI/ML becomes very critical.

And DNA Center also helps you create a fabric. Just like you have a fabric in the data center or a fabric in the WAN with SD-WAN, it helps you create a fabric in your campus environment or your branch environment to keep all your users segmented with software-defined access. So how do you take, for example, doctors and give them access to medical records and give patients access to the patient app and the Internet but nothing else? And how do we make sure the heart rate monitors are securely segmented from the rest of the infrastructure? Network segmentation fully automated is what DNA Center does with software-defined access with again the underlying Cat 9K infrastructure.

And then I talked a little bit about location analytics. And this is something we provide with Cisco DNA Spaces. Cisco DNA Spaces is a cloud-based solution. So you take your wireless controller, point it to DNA Spaces and it starts making sense of all your X/Y location data. It makes it digitally available for you, makes it relevant, where you now know that this is actually in my retail store, this is my pharmacy area, this is my electronics area. So where are you and what are you consuming? Where are you physically present? And what are you trying to do? And it then integrates with ecosystem partners to provide complete solutions.

So that's the entire stack. And we've been building out this stack for many, many years. One question you might have is, "Well, what about 5G? Like, can I just use 5G? Or do I need Wi-Fi 6? What do I need to do?" And the way we look at it is there's a continuum here. We're going to see Wi-Fi 6 and 5G coexist. If you have a very high-density outdoor-type environment in particular, 5G is absolutely the best solution. If you need a cost-effective indoor solution, Wi-Fi 6 is the best answer. Wi-Fi 6 has brought in many of the advantages. It is more deterministic. You can get much higher throughput, much higher performance with the new standard. You can get better latency. You can also get much better battery life on your end devices. So there's tremendous benefits to Wi-Fi 6. It's here and now. We have access points with the Catalyst 9100 already shipping, so doing great. And we believe it's going to be a world that coexists.

Now we do think that from branch locations, a lot of the uplinks, the backhaul is going to become 5G-based. And so we think that's going to be a tremendous application for 5G. And we think that as part of our OpenRoaming work and our partnerships with service providers, we need to help provide better roaming between Wi-Fi environments and 5G environments. So that was the kind of things that you need to -- you can look forward to. But it is going to be a world where it's 5G and Wi-Fi 6.

Once again, in that modern workspace, the partnerships are really important. We've been partnering with Apple for many years. With Apple, it started out with you can prioritize different applications and different traffic coming from your Apple end device, okay? Fastlane capability is what we called it. We then moved into capabilities such as getting analytics from an iOS device inside Cisco DNA Center. So not only can I tell you what the AP is seeing, I can also tell you what your iPad or your iPhone is saying. Tremendous.

Now at the same time, every time there's a new standard that comes out or a new device that comes out, we spend a lot of time doing interoperability testing to make sure Apple devices with a Cisco wireless, Cisco Wi-Fi 6 infrastructure gives you the best throughput, best experience, best roaming capabilities, like everything works in the best way possible. And we're now doing some similar things with Samsung. But the Apple partnership has been going on for multiple years and looking forward to continuing to drive that.

We recently started partnering with STANLEY Healthcare. And this is a great example where we take the location analytics and we plug in with STANLEY to do a baby monitoring solution inside a hospital. It used to take STANLEY a long time to make sure that the underlying infrastructure could support their application needs. But by partnering with Cisco with Cisco's wireless infrastructure and Cisco DNA Spaces, STANLEY can start offering that solution very quickly and the customer can manage their infrastructure but have peace of mind that, that baby monitoring solution





works all the time. And similarly, we've had a partnership with Local Measure for several years now, where engaging customers in a venue is very high quality, very rich experience. And they can do it very easily now on top of our access stack with DNA Spaces. So partnerships in this space are also extremely important for us.

So I'm going to summarize cloud and the modern workspace this way. This is the Cisco strategy. We are really focused on IT consistency. One set of tools for connectivity, for security, for application experience, for policy, whether you have workloads on-prem or whether you are using multiple cloud providers, number one. Number two, innovating, using an architectural approach using intent-based networking, both for SD-WAN as well as for your access environment. And then making sure we are partnering with the industry leaders that you're also working with to provide you solutions that cut across the entire network and your entire solution.

As I said, there's a lot of sessions where you can get more information. There's a lot of demos in the world of solutions and in other places at this venue, so continue your learning. I'll be here for questions for a few minutes as well. And thank you very much for attending Cisco Live, and enjoy the rest of the show.

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#### Unidentified Company Representative

Continuing the conversation now on Wi-Fi 6, because once you've got that all deployed, all that shiny new Wi-Fi 6 networking, you're going to need to manage it somehow. So I want to shift our focus a little bit onto DNA assurance, and I want to start this segment off with a little customer story from my home country of Germany actually. The supermarket chain, Rewe, which is a large supermarket group in Germany. They have about EUR 50 billion in revenue, 10,000 stores and like 300,000 employees. It's also where I do my weekly grocery shop. And they're a Cisco customer who took the journey towards DNA assurance, and they wanted to share a little bit about what their experience is like and what they've got with from it. So let's have a look at that video now, and I'll be right back to talk about it later.

(presentation)

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#### Unidentified Company Representative

What an interesting story there from the great customer of ours in Germany, Rewe. DNA Assurance is definitely the future. I see it out time and time again in my customers. And you can see how Rewe is using wireless sensors and AI to -- I think he said there's 2 people in the wireless team covering 10,000 stores. I think that's a pretty impressive feat, to be honest. And they're using those technologies to resolve issues faster and instead focus on delivering new capabilities to their customers and to the group as a whole.

If you're interested in speaking to one of Cisco's sales representatives about any of the new and exciting technologies that you're seeing here today, we've talked about a whole range of different technologies over the last couple of hours, please go to [cisco.com/go/sales](https://cisco.com/go/sales) to be connected to a relevant expert for you in your region, and you can have one-to-one conversations with them, someone like me or Zane or some of the other guys that work in the account management team to find out more about the technologies that we have in store for you.

That brings us to the end of our enterprise networking segment for today. We're going to be shifting focus to cloud. And after a couple of short messages, we'll be right back to look into that.

(Break)

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#### Unidentified Company Representative

Welcome back to Cisco Live. And as I said before, we're now shifting our focus into cloud. I think there isn't a single customer in the world in 2020, who doesn't have cloud on their mind at least a little, little bit. So we're going to dig deeper into that topic. And I think there's also lots of customers looking at multiple cloud providers, whether they are SaaS, IS, PaaS, whatever kind of flavors of cloud you're using, there's lots of things floating around there.





So we're going to go out into the show floor, Zane is out there, he's going to be in the multi-cloud booth of World of Solutions. Zane, what have you got for us up there, man?

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**Zane Powell;Associate Sales Representative**

Hi, David. And yes, the stack of cloud is all about cloud. I'm in the multicloud area in the world of solutions. And I've met Andre, and Andre is going to give us a demo on the power of the cloud. Andre, can you tell us a little bit about the demo?

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**Unidentified Participant**

Hey, how's it going? Yes, we're here today in the -- hey, yes, we're here today in the multi-cloud booth, and we're talking about the multi-cloud demo that we're here on display. And it includes all the products that you see on display here.

And we're going to kind of walk you through that so you can see what's being showcased here, all right?

So we're here today to talk about applications. The most important thing that you can do for your business is be able to deliver those in a timely manner. The most important thing you can do for your customers is being able to deliver those applications. So today, on display, we have the multi-cloud portfolio. What I'm going to do is I'm going to walk you through some of those products and explain to you how they all interact together and work as one to provide you with those solutions.

So we have a car company, it's a fictitious car company. They are coming out with a new product line. And as part of that launch, they're going to have an application on the web that lets them demo -- lets users demo their cars and maybe do a virtual test drive or customize interior and exterior of the car.

So [Aurora] is a car company, and they're a huge Cisco shop, which means that they're using a whole wide range of Cisco products. So in this case, we're talking about CloudCenter, AppDynamics, Intersight and Tetratation. And all these products are going to work together to deliver that sort of application experience that you want.

Just to kind of go over their environment a little bit, we're talking about applications that spread across both the on-prem and their public cloud. So they're truly a hybrid enterprise -- or hybrid multi-cloud environment. And because of that, they're using our full stack of products.

So at the bottom there, you're going to see 3 different buckets. We've got the yellow section, which is our apps and workload management. We've got security and we've got networking. And inside of each of those buckets, we've got a series of products that again, they're going to work as one to provide a sort of solution for you to deliver your applications. So we've got AppDynamics, Intersight, CloudCenter Suite, Tetratation, and then ACI Anywhere and SD-WAN are really doing that network and that policy for you.

So moving ahead, what we're going to see here first on the demo screen is CloudCenter Suite. So in CloudCenter Suite, we're actually modeling the application, and we're designing it in such a way that it can be used anywhere in your environment. In this case, what we're going to do is deploy a 3-tiered application onto our infrastructure.

This 3-tiered application, like many people know or as a database, a web server and a low bouncer, and it's going to be spread across both of the environments. So on-prem, we're using a HyperFlex and UCS and Nexus, which everyone knows is our bread and butter here at Cisco. But then we've got a couple of new announcements this week, where we're talking about HyperFlex application platform, which is new to Intersight. So what we're actually going to do is -- and then lastly, before we actually deploy the application, we're using SD-WAN as the overlay to network the on-prem traffic with the cloud traffic.

So moving forward here, we've got Intersight. Intersight is actually now the home to container deployments. So we're going to use the new functionality to call Cisco container platform to deploy clusters on-prem for our application to consume. That's where we're going to be able to

use CloudCenter to deploy the application. And then finally, like we mentioned before, we're using ACI and its policy engine to ensure that we have consistent policy across both environments.

Once the application is deployed, it shows up in AppDynamics. In AppDynamics, we can actually get real telemetry data of how the application is performing. And really, the end goal is to have a working application.

But this is where a lot of people stop, right? This is where they stop thinking about their application. And really, what we should be considering is how do you iterate upon that? How do you improve the application performance? So some of the use cases that we're talking about here, really focus around AppDynamics being that central nervous system to report and to orchestrate and work with the other products in our suite.

So I'm going to go over a few examples there, just so you guys get an idea of how AppDynamics is working with the rest of the product suite. So in AppDynamics, we've got an executive dashboard. And on this dashboard, we're going to start seeing some errors appear. And really, what it's noticing is 2 different things going on. We've got a web server that's potentially seeing too much traffic because we've launched a new web app and we might need to scale up here. And then we've got a database down below on-prem that maybe isn't large enough to handle that read and write data. So what's happening in AppDynamics is it's reporting those errors. And the reason that we want to see those errors is because this is the application experience. We've got users who are trying to use our application on the web and they can't, because it's loading. So what we're going to do is we're going to remediate those with AppDynamics and some of the other products in the suite.

So the first thing we're going to do is we're going to scale out the web tier. CloudCenter and AppDynamics have a really powerful integration, and as a result of that integration, they can automatically scale out the web tier to ensure that there's enough web servers out there to handle the additional load.

The other recommendation it's going to get is from Cisco Workload Optimization Manager, which is now a part of Intersight as well. And it's going to recommend that it scales up the vCPU because that database isn't large enough to handle the reads and the writes. So those are 2 actionable things that AppDynamics caught, and it gave recommendations to those tools to go ahead and implement some remediation steps.

And the reason we're doing this is because now this application's returned to normal, and that's probably the most important thing is making sure that, that experience is consistent for your users.

The next thing we want to talk about is security, right? So what happens when one of your nodes, for instance, might be out of compliance? Well, Tetration and AppDynamics have an integration where AppDynamics is going to start reporting a node of compliance. And it's going to be -- you're going to be able to drill down and specifically see which node it is that needs to be remediated. And with that information, you can go into Tetration and you can start looking at the flow metrics on the network, you can start looking at the OS packages, you can start looking at maybe some of the updates have been applied to the system. And with that information, we're going to be able to go into cloud center and do a YUM update to ensure that the packages are in compliance. That's a really important step to go through and that's what Tetration is serving for you. It's giving you a nice policy engine to ensure that you're up on your security policy.

The last thing we want to talk about, and it's a common theme here at Cisco Live, is cost optimization. So being able to look at your cloud spend and to be able to remediate what's going on in your cloud area. In this case, we have a budget that we've set. And over the course of the demo, we've actually done a couple of things that have affected that budget. Most importantly, we scale up this web tier. So what CloudCenter's going to do is it's going to make a recommendation maybe that we tear down those web servers because maybe we don't need them anymore. Traffic has died down. The product isn't as popular. We're hitting the maintenance space. Let's go ahead and scale back our web tier.

In addition, maybe we need to make the web -- the low bouncer smaller. So these are recommendations that CloudCenter Suite and Cost Optimizer are going to make in real time about your cloud spend. We're also going to give you recommendations on where you should deploy the cloud, the application into which cloud in real time.

And then the last thing -- I promise, that I want to cover is the executive dashboard for AppDynamics. So the reason we're doing this thing is because here, on the left-hand side of the screen, you're going to see version 1 of the app. And then this instance, we've got 800 people who used it upon

launch, but 224 of them abandoned the application. That's not something you want to see. And that was a result of everything that went wrong in a demo. Well, in version 2, we've actually fixed that. And although only 205 people are using it, we've only got 66 people abandon the application. So what this executive dashboard is showing you is it's giving you real technical insights and it's giving you business information as well as technical insights into what's going on. So that's what we're showing here at the demo here. I hope you guys enjoyed that.

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## QUESTIONS AND ANSWERS

### **Zane Powell;Associate Sales Representative**

Fantastic. Now, I think you all agree that was a fantastic demo, Andrew.

I think when you see it all come together like that, and you really see the whole of Cisco's portfolio work together ...

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### **Unidentified Participant**

Absolutely.

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### **Zane Powell;Associate Sales Representative**

It just shows how powerful Cisco really is in this space. So last thing, Andrew, if I were a customer, I'm here at Cisco Live and I want to find out more about this, where do I go?

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### **Unidentified Participant**

Obviously, right here, right? So we've got all the products on display. Everything you just saw here is real. And each of the product booths will be able to show you exactly what's going on and how they're working together to solve your application delivery needs.

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### **Zane Powell;Associate Sales Representative**

Fantastic. Last thing, just before we throw it back, what are you looking for with the most at this Cisco Live?

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### **Unidentified Participant**

Some more sangria that we can put it on this.

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### **Zane Powell;Associate Sales Representative**

Me too.

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### **Unidentified Participant**

When this is all said and done.

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**Zane Powell; Associate Sales Representative**

Fantastic. So I'm going to throw it back to the studio where we have David waiting on us.

**David dela Cruz; Commercial Account Manager**

Yes. Thanks, Zane, and great to hear about the multicloud because we're going to be continuing that topic for the next little while here on our live stream.

So we're going to head into the innovation theater shortly, where Liz and Tony is going to be giving a talk with Danny Winokur around multicloud, get more info around this very interesting topic.

Before we do that though, we're going to have a short video, because we've got -- it's not a far-off future for many of our customers, it's happening right here, right now. So we've got a customer story from an organization called BBVA, for a large bank from right here in Spain, and they're going to be talking about their experience with multi-cloud.

(presentation)

Great to hear about those real-life customer perspectives from BBVA. I found it fascinating to understand how they were using Cisco products to manage across multiple different types of clouds, and that's really the topic of the day.

So to continue our discussion on multicloud, we're going to be heading over to the innovation showcase where Liz and Tony and Danny Winokur are going to be managing it. Heading over there now.

## PRESENTATION

**Unidentified Company Representative**

Hello, everyone, and welcome to the Innovation Talks theater. My name is Toby, and I have the pleasure of being your host today. It's very good to see everybody here at Cisco Live 2020, there's quite a few of us. But together, we're going to build the bridge to get you where you want to be so that you can have all the possibilities.

Now Cisco Live, you'll learn new things, be inspired and create the path to endless opportunities. Now this week, we're hosting 14 sessions here at the Innovation Talks theater, where we'll share with you our latest solutions, innovations and of course, best practices.

The application revolution can be a double-edged sword. New apps mean innovative user experiences and business opportunities but also challenges from growing architecture interdependencies, increased security risks and operational silos. What's an organization to do?

Today, we are joined by Liz Centoni, SVP and GM for Cloud, Compute & IoT; plus special guests, Danny Winokur, VP and GM of AppDynamics; and Sachin Gupta, SVP, Networking Product Management, as they share how organizations are turning this complexity into opportunity.

First up, please give a warm welcome to Liz Centoni

**Elizabeth Centoni - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT**

Thanks, Toby. Afternoon, everyone. Hope you're enjoying Cisco Live so far.

So what we're going to cover in this session today is we're going to start a little bit about what we are seeing in hybrid and multicloud, what that means for your application and workload management. And so Danny Winokur and I are going to cover that together. And then what are the expectations of your network as a result of that. And we have our celebrity guest, Sachin Gupta here, he's the SVP, Product Management for Intent-based Networking Group. He asked me not to embarrass him and I said, "Sure, I won't." But welcome.

So let me start with kind of what the landscape looks like, and I picked about 5 areas or 5 key data points that I thought were absolutely relevant for us.

So the first one, as we think about this is, it says, in 2 years, there's going to be about 50% in terms of application growth. Now when you think about this, a typical enterprise has about 5,000 to 7,000 applications. So that means there's another 2,500 applications that will be added in the next 2 years.

The second thing, one talks about the fact that 50% of your current applications are going to change. They're either going to be migrated, refactored, retired. So if I go back to what a typical enterprise looks like, that's another 2,500 applications.

When you come to the third one, we all know applications are modular, they're distributed. Last year, they had about 8 dependencies. This year, that's 20 dependencies. We can all have a pool going in terms of next year when we're here. How many more dependencies that would be?

And then when you look at what developers are favoring, they strongly favor developing the applications in a container environment, leveraging more of a hybrid environment in terms of getting the ability to be able to develop your apps anywhere and deploy them anywhere.

And the last step talks about the fact that close to 60% of compute and storage will be at the edge and the provider data centers. Being in IoT as well, I look at the edge as the IoT edge because as we're connecting far-flung enterprises, think about your refineries, your ports, your roadways, your mines, a lot of data that's being generated there has to be computed there if you want near-time business insights. You're not going to take them back to the cloud. So I'm not surprised that in the next 2 years, this is what we'll see.

Now we can debate and discuss whether this will be 2 years or 3 or even happen next year, but the reality is, that's where our lives are kind of moving to.

So let me net it out in terms of what does this mean for us? Clearly, the application dependency map is getting a lot more complex, and we'll talk about that in terms of -- a little bit later and how we're handling that.

Your world is also getting a little bit complex because you look at it and go, "Geez, my security policies have to follow my application, how do I ensure that I do that?"

So you look at this multi-cloud world and this hybrid world, it's increasingly more powerful because all the capabilities that you can leverage, but the complexity also comes along with that. And what does hybrid and multi-cloud mean, because in many ways when I talk to all of you, it kind of means different things to different people, right? When you think about what is multicloud, I'll explain as to how we think about it. Multicloud is a business imperative. Because your applications, your lines of business want to be able to leverage innovations in multiple clouds. It could be a private cloud, it could be a public cloud. So I want Office 365. I want Amazon's Alexa. I want Google's TensorFlow. That's a business decision.

Then when you get to hybrid cloud, hybrid cloud is more of a technology imperative that's in service of this business imperative. So how do I now have to manage and make sure that my apps are delivering the best user performance across this distributed hybrid world? And the reality is that hybrid apps are here to stay. I mean, when you think about it, you could have your front end, which is a catalog that's sitting in the cloud; you have your back-end sitting on-premises because your data, sometimes your credit card information, is actually sitting on premises. Data locality and data gravity is real. It's not a one-off thing. And it's not just for GDPR compliance, not just for security and -- or privacy for that matter, those things are absolutely important. But from a business imperative standpoint or a business decision in terms of what you do, in terms of what you want to maintain control over your environments as well, data gravity is absolutely real.

So how do you deliver that consistent user experience? And if you heard David Goeckeler talk about yesterday is your network has to evolve because your existing infrastructure is not going to just completely go away tomorrow. So how do you actually deliver the same user experience anywhere, anytime across any cloud? Those are some of the challenges that we're going to talk about in terms of saying, you need to have a common, consistent, secure network across all of these environments. So how do you extend what you have on-prem to the cloud? You need to be able to look at the tools that you have and say, "How do you extend that into the public cloud?" So when you look at this slide, it's like, in many ways, you're saying, "Hey, on the left, you have your on-premises environment, right?" You have complete control over that today. You can -- there's a lot of applications you deploy on that today.

On the right is the public clouds and vast amount of innovations and new stuff that your developers absolutely need, and that keeps adding on, it's not a static world, there's a very dynamic world. So how do I leverage what's in that environment as well? But I think you're thinking about is, "I want to be able to extend into this environment to be able to still have the same consistent networking and security policies on-prem. I want to be able to extend that into the cloud." And Sachin's going to come up a little bit later and talk about that.

I have a set of tools that I use today in terms of app and workload management. Is it possible to extend those into the cloud as well, because at the end of the day, I am still responsible for delivering that near-perfect or perfect end-user experience, and Danny's talked about before in terms of the implications to your business, both top line and bottom line when your applications don't deliver kind of the experience that users are expecting, which, by the way, is dynamic as well. And how do you do this in a consistent way, centralized, where you have central management and you provide production-grade experience?

So we're going to start with Danny Winokur to start talking about how do we do this from an app and a workload management. I'm going to come up back a little bit later. And then we're going to hear from Sachin. So let me invite up Danny Winokur.

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**Daniel Winokur** - AppDynamics LLC - SVP of Customer and Strategic Operations

Thanks, Liz. All right. So as Liz said, things start with the application, right? That's the part of the stack that is actually closest to delivering business results in the digital world in which we're now living. And the application, therefore, has to deliver the seamless, flawless experience that is going to be fantastic for users. And the reason it has to do that is that the bar has been set incredibly high in all of our individual expectations, right? It's been now a number of years that each of us as individuals, whether we're working as an employee in that context, our role as an employee within a business, or whether we're representing ourselves as a consumer and buying products and services.

In both cases, we've become accustomed to the experiences that have been pioneered by what I would describe as digital native design-led organization, the Googles, the Facebooks, the Ubers of the world, that have set these expectations that we just have to have apps that are beautiful. They're simple, they're extremely responsive, they're fast. And the companies that have figured out how to master the art of creating those applications are the ones that are the winners competitively in this economy, whether those applications are being delivered internally to run their business or whether they are being delivered externally to their own consumers.

And so we see that represented in data from the App Attention Index that we conducted a few months ago. You can see that the data comes back and says, "Hey, 49% of survey respondents switch suppliers due to a poor digital experience." 63% are actively discouraging other friends and colleagues from using a service or a brand if they don't deliver a great digital experience. And 48% of all downtime incidents, each cost over \$100,000. And we go into many organizations that are trying to make this kind of a digital transformation. And they're having outages as they go through the transformation that occur multiple times every week. Sometimes, multiple times every single day.

And those dollar numbers don't account for the dramatic costs that are harder to account for. Things like reputational damage, being in the newspapers, customers getting angry and saying bad things about you, as suggested by the other statistics, right? So this experience is how you compete and win and when it goes wrong, it's going to be incredibly expensive, and this is driving pressure onto IT teams, and in particular onto both application and infrastructure teams because they are having to adapt the way they work and the technologies that they use in order to keep pace with the speed of digital business.



Because in a world of experience, where that's your competitive currency, 2 things are true, right? One is the business is now encoded inside the application, and the application has to be able to get updated at the speed of business initiatives, which is very different than the past. And number two is we know that executives sitting in conference rooms do not succeed in coming up with the winning experiences. Winning experiences are achieved by doing user research, forming hypotheses, implementing in code, putting in production and getting real-time telemetry and feedback that allows you to learn how your users are experiencing your application so that you can reform your hypothesis, recode and get back into production. And the faster you iterate through that cycle, the more shots on goal you get and the more quickly you arrive at the winning experience, right?

Both of those things put pressure on velocity. And one of the things you need in IT to have velocity is to decompose monolithic applications and monolithic infrastructure into cloud and micro services technologies, that allow smaller teams to move with autonomy and velocity in moving forward your application initiatives, right?

And so we see the adoption of cloud and micro services on top of the 3 prior generations of technology that have made up IT: mainframe, client server and the web. And the result is that we end up in very complex hybrid environments. They look something like this. Because the reality in any mature organization is we can't throw away the 3 prior generations of technology. So most IT estates have all 4 generations represented, and there are strategic decisions that need to be made about which areas do you prioritize for cloud and micro services.

That's going to often be the front-end components of the application where you need that highest velocity of iteration. And you're going to accept the fact that you're still going to have web, client server and mainframe technologies in some organizations that are providing middleware and data access on the back-end, oftentimes running in an on-premises environments, traditional data center environments, alongside more recent cloud innovations that could be running on-premise in the private cloud or as instances or workloads in the public cloud, giving you the breadth of the multi-cloud estate.

So what AppDynamics does in this environment is we monitor business transactions, right? You heard me talk about this at the keynote, if you were there. It's basically a lens through this complex multi-cloud application environment that focuses on a key outcome for the user through that application estate. And what that does is allows you to simplify monitoring, instead of having all of these alerts for all the technical components that make up this complex estate, you actually abstract it up to an outcome for the user inside the application that puts it in context.

And what that does is allows us to figure out when something goes wrong, where it's going wrong, what does it impact, how does it matter and therefore, how can we prioritize it and fix it.

Now so there it goes. Okay. So in this example, it shows a network policy change that is root cause into the data center. And then you can say, okay, I understand it's affecting this particular business transaction for this application, and I can now go ahead and fix it.

One of the things that's powerful about what AppDynamics does is that we also correlate the business transaction and what is going on in the application to the business impact that it's having, as measured by business metrics, right? And so you now have the ability to not only look at your key performance indicators for the technology performance, but also for business performance, so that you can understand who is affected, how many dollars are invested, what are the common SKUs that are being put in the cart? What are the checkout abandonment rates? These are the things that business cares about. And so you can use that to prioritize your work.

At the same time, we've announced a new feature that we announced on stage yesterday, which is the experienced journey map. And this is the third lens that AppDynamics gives, which allows you to now place into context of the actual front-end screens, that the user is going through, the full application experience. So you can now say, okay, I have my back-end components, I have my business results, but I want to look at it through the screen-by-screen journey that is being mapped with AI and ML to show me those top journeys. And then in that journey map, I can see abandonment rate that connects me to my business data, and I can actually [say] technology performance and key performance indicators that point me down to further troubleshooting in the application.

Together, these capabilities help organizations move from traditional operating models like this, where you have separate siloed business teams, development teams and operations teams into a model that looks more like this, where you have BizDevOps, right? This is the notion that your



separate teams need to work together with a new level of intimacy and collaboration that is going to allow them to accelerate the velocity of iteration that I talked about earlier, which is necessary to work up and down the stack to win in a world of digital experiences, right?

So that's fundamentally what AppDynamics does at the application layer. But the application layer is, of course, not where it ends. And as Liz pointed out, we're going to now begin to dive deeper into the infrastructure so you can see how we're connecting the full stack all the way down.

And so if you now look at that stack and you say, "Okay, there's business, there's application, infrastructure, network and security." You have legacy systems that the different operating teams at those different layers of the infrastructure have invested in. Those legacy tools tend to keep them siloed because they represent different data sets and different sources of truth that results in finger pointing when problems occur as they try to move in lockstep together to iterate in creating experiences, right?

So what we're working on at Cisco, and you're going to hear more from Sachin in a moment about some of this as well, is we are upgrading those legacy systems to create modern domain controllers that are software-defined, open interfaces for data exchange and then beginning to connect the data sets between the tools so that each persona in the organization that is focused at a layer of the stack has the opportunity to work within their tool of choice where they're comfortable, but they're using connected, correlated data sets that represent a single source of truth and aid them in their collaboration.

And so with that, I'm going to hand back to Liz, and then she's going to go to Sachin, and you'll sort of see how we dive into the infrastructure and connect these data sets from the application on down.

So back to you, Liz. Yes.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

So I think if you watched the keynote yesterday, you saw how we talked about how we're taking data sets from the infrastructure, the virtualization layer and from AppD, correlating that to be able to create this view of a dependency graph. So you know all the dependencies the application has in your -- across all those resources, whether that's on-premises or in the cloud as well.

Interestingly enough, when I finished the keynote, some of the feedback that came back saying, "Hey, that's a good on-premises tool. What do you guys do for the cloud?" And I thought it would be good to emphasize that again, in terms of what we're talking about is not just an on-premises tool, but it's a hybrid and it's a multi-cloud tool as well.

So if you look at Intersight Workload Optimizer, which is what we announced yesterday, as we did the keynote on main stage, I know there was a lot of stuff to consume in terms of what we talked about on main stage. But Intersight Workload Optimizer, actually it makes API calls to pretty much every entity, which is what you can see in the circles on this dependency graph, and that's where it pulls all of this information, in terms of the immediate dependency of each one of those entities, and then it correlates that and connects it and builds out that dependency graph. And so what you see out here is a dependency graph that's built for an application that doesn't -- that leverages resources that sits both on-premises as well as in the cloud. It makes the same API calls to the multiple different cloud providers as well.

And while one of the top use cases is usually about how do I predictively or proactively troubleshoot my application issues before it even impacts end users? The other application or use case example is also very much about, how do I optimize my resources? Because most often than not, when I actually get my bill, it's sometimes a shock. And given that there's multiple -- if I take an example of an instance type, these keep expanding or evolving every day, every week, every month, and you get a lot of choices out there.

So how do I make the most optimal kind of calls for my application? This is where things like the Workload Optimizer, if you look at it, if I drill down on what's happening with the VMs, it will actually show me that I can actually use different instance types. So if I click on one of those, it gives me very specific data in terms of going to another instance type and saving money. So I want to make sure that we re- -- kind of introduce this today, because we're talking about an app and workload management tools between the 2 capabilities that you have here, that's not just for on-premises, but also works in a hybrid multicloud environment, right?





So as Danny talked about, between what we're doing with AppD and workload optimizer, we're helping break down the silos between the infrastructure operator and the app operator, so that both teams have a common view of a shared data sets and are able to both proactively address performance troubleshooting issues as well as optimize resources.

Now the other thing that I talked about earlier in terms of, hey, most developers prefer developing in a container environment but mostly leveraging Kubernetes. So the ask from very -- of our customers is, "How do we provide an enterprise-grade container platform?" And these are not easy to do, and this is what we released the HyperFlex application platform for. Because when you're talking about an enterprise-grade container platform leveraging Kubernetes, I think many of you know, Kubernetes is not just one thing.

You can take your upstream Kubernetes, you still have to bring that together with a number of components, sometimes 20 or more, in terms of you have your logging, your monitoring, your registry, you have your container networking plug-ins, you have a container storage plug-ins, and you've got to pull all these open-source components together, test it and make sure that you actually keep up with all the releases, which, by the way, for open source, that comes in every day, every week, every month. And that's exactly what we're doing with the HX-AP platform.

What it does is it helps bridge 2 worlds. IT and DevOps, where IT can now be offering this as a Container as a Service. And for the developers, it provides a world in terms of where you can, as I talked about, 70% of them actually prefer to use containers in a hybrid environment. You're now providing the ability to actually develop anywhere and deploy anywhere as well.

So I wanted to make sure that we actually comprehensively talked a little bit more about this, and you can go see this in the World of Solutions and our launch zone as well.

All right. So let me now segue to the networking part of it. And actually, before Sachin comes up, I wanted to mention quickly a conversation I had with a customer of mine, if you don't mind. We were talking about how IT needs to evolve or is evolving to a cloud world. And my customer was saying, "Look, I have applications today in VMs and in containers as well. In fact, I use my resources across different regions. And I have multiple accounts for the same cloud provider, right? So I need a common secure network to be able to manage all this communication back and forth, so I don't have to think about, Hey, I have my application in this VM or this container, and how do I thread all of that together?" So secure networking is what powers a hybrid cloud, that's totally in Cisco's wheelhouse. And I want to invite Sachin to come up here and talk some more about it.

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**Sachin Gupta** - Cisco Systems, Inc. - SVP of Product of Intent-Based Networking Group

All right. Thank you, Liz.

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**Elizabeth Centoni** - Cisco Systems, Inc. - Senior VP and GM of Cloud, Compute & IoT

Thanks, Sachin.

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**Sachin Gupta** - Cisco Systems, Inc. - SVP of Product of Intent-Based Networking Group

All right, good afternoon. I'm going to try and bring this home in the next 5 or 6 minutes and talk about, just like Danny addressed, the complexity in the application environment and how all the products that Liz and Danny are bringing to help solve that, I'm going to talk about the complexity from a networking and security point of view and how Cisco's architectural approach helps solve that.

So quickly moving right into it. The world previously was very simple. I was using my WAN to connect my sites into my data centers and Internet was the best effort kind of use case. It was very, very easy to manage. And now you have this world that Liz talked about with multiple cloud providers. More than 80% of our customers tell us that you're using at least 2 Infrastructure as a Service providers and paying for more than 30 SaaS applications, but maybe using more than 100 each, right?

So this is the new world that we're having to deal with, where your applications, your services need to be in many, many different places, and you need to figure out how you use a co-location or a carrier-neutral facility as part of your design.

If I zoom in, and I show you this environment from a networking point of view, some things will look familiar, like you're going to say, "Yes, I have subnets, I have peering points. I have this notion of transit gateway, I have this notion of VNets, Virtual WAN hub." In every single cloud provider, you're going to find different capabilities, different terminology, multicast routing, ingress routing, direct connect, express route, lots and lots of differences that you need to now go in and manage.

So this is not even bringing your sites into the cloud but just connecting clouds to each other because -- or connecting different regions within the same cloud provider. This is the new network complexity that you need to go manage.

And so I really like this quote from a CCIE. I'm a [CCI] myself, I've been doing networking for 23 years, and this is a quote from Ivan, who says that, "When you look at traditional network engineers who look at AWS, for example, it's a little bit like Alice in Wonderland." Everything seems similar, but it doesn't feel quite the same, all right? And how can we, as Cisco, help you navigate this new world?

What we do is, first of all, we follow an architectural approach. With Cisco secure cloud scale SD-WAN, we want to make sure that regardless of where your users are connecting from, what kind of transport is being used, NPLS, 5G, 4G, it doesn't matter. And it doesn't matter where your application environment or your services reside. We can deliver automation, analytics, security and application optimization in a consistent way. And we can't do this alone. We have this architectural approach, but the partnerships are extremely critical to make sure that the solutions work end-to-end.

I'm going to talk a little bit more about the Amazon and Microsoft partnerships. Well, on this slide, let me mention our partnership with Equinix. If you need to bring up a rack of services in a colocation facility at Equinix, we can fully automate how you get traffic in and out, extend the SD-WAN fabric, as well as do service chaining in that environment, and that's the partnership with Equinix.

And looking a little bit more at what we're doing with Amazon and with Microsoft. First off, with AWS. You can now take the benefit of their transit gateway and transit VPC and extend the Cisco SD-WAN fabric into AWS. So secure connectivity and a path preference that you can drive all the way into AWS cloud. At the same time, you can use Cisco ACI for application policy to provision in the cloud, or if you're bringing an instance of AWS on-prem with outposts, the same ACI Anywhere solution can manage application policy on-prem.

And then last but not least, from a security point of view, you are able to go ahead and use Cisco Defense Orchestrator to manage your firewall instances that could be virtually in the cloud, and you can use Stealthwatch Cloud to detect threats in your cloud environment.

So let me just step back. Your SD-WAN solution, which was previously -- can disconnect sites to your data centers, can now extend into the cloud environment. Your ACI solution, which was on-prem data center now can manage cloud the same way. And your security offers can now be in the cloud the same way. So all of the products and tools that you're familiar with, you can now consistently apply them in a cloud environment.

If I move to the Azure relationship, very, very similar to what we're doing with Amazon. The ability to take the SD-WAN fabric and extend it so that you can use virtual WAN, you can use a virtual WAN backbone and implement consistent set of services with Azure.

And then very interestingly, we're also partnering with the Office 365 of the house with Microsoft. With Office 365, if you read their documentation, they talk about, don't use anything else, come directly to my backbone for Office 365. Well, maybe you're using an Internet connection from your branch to connect to O365, but that may not be the best-performing all the time. At sometimes, you may need to use your MPLS circuit or you may need to go over your backbone to your headquarters or through a co-location facility in order to get the best experience for O365 while maintaining security. And we give you automatic path selection by sharing data with Office 365 in the background.

So if I bring it all together, we're helping you address those complexities on the application side or on the network and security side through consistent IT operations, IT consistency, same set of tools, innovation through an architectural approach and through industry-leading partnerships.

And finally, those partnerships are not just at the network level. Liz talked about bare metal VM container environments and partnering with the major cloud providers at that level. I've talked about networking and security. And Danny talked about what we're doing from an app management and workload management. Liz talked about some capabilities there as well.

So the partnerships are for the entire stack that you need to manage. You can expect that we will continue to partner with the industry-leading providers that you're working with, in order to ensure that you can get the full benefit of the cloud and not have to deal with all the complexities. Thank you.

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**Zane Powell;Associate Sales Representative**

And welcome back to the studio, everyone. And that was a fantastic innovation talk from Liz, Danny and Sachin. And it's absolutely clear that applications are right at the center of everything we do, whether it's working, whether it's an abnormal day-to-day life. And at Cisco, it is our job to empower our customers to really empower their customers. And I think it's clear from that talk, it's all about customer experience. It's also fantastic to see the deep integrations that we have with the public cloud providers like Amazon, Google and Microsoft.

Now we're going to throw it out to Steve, who I hear is at the Innovation Stage.

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**Steve Multer;Chief Storytelling Officer**

I am. I'm in a hotspot right now. Good to hear from you, my friend. I miss you, you and I haven't had a chance to play together all day long. (inaudible).

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**Zane Powell;Associate Sales Representative**

I miss you, too, Steve.

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**Steve Multer;Chief Storytelling Officer**

Well, that's all right. We saw each other in a place that we're not going to talk about right now. But we'll be back together shortly back into studio.

All right. So let's talk about what's going on behind us. As Zane just said, and as you just saw, we wrapped up the 12:00 Innovation Talk with the hardest working dream team here at the show, Liz Centoni, our Senior VP, GM of Cloud; Danny Winokur, VP, GM of AppDynamics, so much about AppD; Sachin Gupta, we always love hearing from Sachin, our Senior VP, Product and Intent-based Networking Group lead. And they were talking about how do we build that bridge to the multi cloud, how do we power this new application revolution that we are all finding ourselves in today. Really inspiring talk.

During yesterday's keynote, Liz delivered what I think may be my very favorite line of the conference so far. Liz started out, she opened up by saying that what we do here at Cisco is not just about delivering technology, it is about trust. It's about integrity. It's about honesty in our partnerships and our service delivery so that we can offer that really positive customer experience at all times for economic value, societal value. I think trust has become the word of this show.

Also yesterday, for those of you who are watching, I had an opportunity to talk with our own Ben Munroe. It's always great, but also with [Michael Jenkins]. He was the -- he's the CSO at [Purnell] University. He said something that tied directly back to what Liz said. He said, "I was looking for a critical friend that I could trust to help me develop what it is that I had in mind." And he felt that, that critical friend is Cisco. Again, it comes down to trust. And I absolutely love that.

Let's kind of walk this way. We are deeply proud of that trust piece. So here in the innovation talk, Liz made a really good distinction between multicloud and hybrid. There's a lot that's thrown around with regards to those words. We hear frequently about what's going on in the multi-cloud world, what's going on in the hybrid world. They are distinct.

She talked about consistency. Consistency is so important to all of our customers. Consistent positive customer experiences, consistent outreach to all of our partners. It's a story that carries across all of these different onboarding applications that we've been discussing here at the event all day yesterday and today, all the new launches happening out there.

Now I want to tell you about some of the other great innovation talks that are coming up over the course of the day. We're going to put them up in a sidebar here on the screen, we want to make sure you don't miss out on any of what's taking place.

At 2:00 here this afternoon, Spain time, we're going to have Michael Beesley. He is our VP, CTO of Service Provider Network. And Michael is going to talk about how we transform your IP infrastructure and how you can lead market disruption. We're going to spend a lot of time on service provider this afternoon.

At 2:45 today, we've got our very own Todd Nightingale, straight out of Meraki. He's our Senior VP and GM of Meraki. Todd will be here in the Innovation Theater to talk about how we keep things simple. How do we create smarter, simpler solutions for the digital workspace? You're not going to want to miss it.

At 3:45 this afternoon, local time, Barcelona, we'll talk about digital transformation with Thomas Scheibe. He's our VP here at Cisco. Specifically, we'll talk about application deployment and infrastructure automation and assurance. You will not want to miss it. It's a big theme of this year's show.

We're going to wrap it up today with Alistair Wildman, 4:30 this afternoon. Alistair is our Head of Customer Experience, here at EMEAR. And you heard him yesterday morning during the keynote. Today though, he's going to be here in the Innovation Talk Theater, and he's going to talk about how we improve that customer experience using innovative technology. CX has got such a great booth. It's directly across, I'm looking right at it. Maybe one of the most crowded areas here at the show.

But earlier today, back in the studio, I had the chance to interview Phil Wolfenden, VP of Customer Experience Centers, right here in EMEAR. He is a 20-year veteran with customer service and customer experience. And he agreed, CX has so come into its own. It's in a great new era. It's right out front now as part of our Cisco platform. That's very exciting. So again, Alistair, right here today at 4:30.

So we're going to wrap it up back here in the Innovation Talks for now. We'll see you back here at 2:00. And right now, Zane, I'm going to go back to you in the studio. I'm going to come and track you down.

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**Zane Powell;Associate Sales Representative**

All right, Steve, I'm looking forward to. Like you said, I've not seen you all day. Get yourself back here.

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**Steve Multer;Chief Storytelling Officer**

I'm sorry. I'm going now. I'm going now.

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**Zane Powell;Associate Sales Representative**

See you soon, Steve. So guys, we're back here in the studio and I have 2 very, very special guests. I have Todd Brannon and Fabio Gori. Gentlemen, can you introduce yourselves?



**Todd Brannon;Sr. Director, Data Center Marketing**

Great to be with you. Go ahead.

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**Fabio Gori;Senior Director;Cloud Solution Marketing**

Oh, thank you. Fabio Gori. I'm a Senior Director of Cloud Marketing at Cisco.

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**Todd Brannon;Sr. Director, Data Center Marketing**

And Todd Brannon, Senior Director of Computing Marketing here at Cisco.

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## QUESTIONS AND ANSWERS

**Zane Powell;Associate Sales Representative**

Fantastic, guys. It's great to have you here. So thanks very much for your time. So Todd, my first question goes out to you. We had some big announcements here from Cisco. Can you give us a quick recap about what's been announced and with the unique experiences that this will bring to our customers.

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**Todd Brannon;Sr. Director, Data Center Marketing**

So I think what we're talking about here is bridging things, right? That's what Cisco is good at. And it's really in 3 key domains where we're going to build some bridges.

The first is, the teams that are concerned with applications and the teams that are concerned with infrastructure. How do we bridge those worlds, give them common tooling, common vocabulary to do their job better, all in the interest of these application experiences.

Second area is really the domain that presents when you start talking about hybrid applications. And these are ones where you have a component out in the public cloud. A lot of that innovation going on there. But data gravity, you heard Liz talked about it, it's real. You're going to have all these components on-prem, and they have to talk to each other, so how do we bridge those domains?

And then finally, as Fabio well knows, right? Containers. They're becoming the platform for innovation, on-prem and in the cloud. So how do we bridge that container environment and close that gap? So it's all about building bridges, those 3 key domains right there.

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**Zane Powell;Associate Sales Representative**

Yes. And I think that is a key theme here. It's all about building bridges. Fabio, do you have anything to add to that?

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**Fabio Gori;Senior Director;Cloud Solution Marketing**

Now I would say, Todd is far on. I would like to mark the importance of the business transaction that we're seeing, right? I mean, we've been talking about digital transformation forever. The fact of the matter is, this means building new apps as fast as you possibly can. How fast? Faster than your competitor. Because if you're not faster than your competitor, you're going to get beat up in the marketplace.

I know, by the way, you need to deliver amazing experiences. So as Todd said, I think the biggest new that we're seeing in the last 2 or 3 years is this collapsing of the application domain and the infrastructure domain. Why? Because you cannot live in a world where to give a development environment to a developer, you need to open 5 trouble tickets, and that's guy with provisional server. Another guy that gives you an IP address. Another guy that gives you an ECL entry into the firewall. That world has to go. The infrastructure needs to behave as a service. And to this extent, it's the cloud that set the bar extremely high. And so what we're doing is investing, of course, to bring all this innovation into the on-prem environment and make the on-prem environment looking like cloud, hence the private cloud terminology. That's critical. So it's about speed and innovation. Otherwise, it's not just your IT department doesn't perform, it's the company that doesn't perform.

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**Zane Powell;Associate Sales Representative**

Yes. And I totally agree. And I think just to touch on that, you spoke about experiences. And I think that's a common theme here, experience is really as the #1 thing. So why is that important then to link what the customers are experiencing and through the application to the underlying infrastructure?

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**Fabio Gori;Senior Director;Cloud Solution Marketing**

Well, I would say, this is where really the cloud component comes into play. And I think we heard Sachin talking about the networking domain. The other key domain is security. So when you think about it, to glue up these 2 environment, you really need to have this consistent set of capabilities. He mentioned not having those, it means that you have to import like a networking model and a security model, which are different across the various providers. That creates madness on prem because it goes over and above an already established set of capability and silo that exists on prem. So normally, what we're hearing from our customers is, "Hey, Cisco, can you help me expand in what I have actually to the public cloud, so then I have a consistent experience?" Because otherwise, your OpEx will explode, your complexity, the ability to troubleshoot will explode. And so we're seeing these 3 big components: networking, security, application, workload management really in high demand right now across this big hybrid domain.

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**Zane Powell;Associate Sales Representative**

Yes. Totally. Now we spoke about complexity. We spoke about data center infrastructure. We also mentioned containers. So Todd, when it comes to containers, what are the biggest challenges you're seeing our customers facing and how could HyperFlex really help them overcome these challenges?

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**Todd Brannon;Sr. Director, Data Center Marketing**

Well, what we're seeing is, containers have been and have emerged from the developer community over time. But we're seeing the trend now where as workloads are being either refactored or we're seeing all this innovation going on, it's becoming a mainstream platform. And that means it's coming in and becoming the responsibility of the mainstream core IT teams as part of their day job now. And how do we help them bring up these new container stacks in a way that doesn't add new silos of complexity, new silos of infrastructure, new silos of operational technology? How can we deliver that?

So with HyperFlex, what we're doing, we already support your applications that are virtualized, now we can do bare metal Kubernetes right on top of it. And more than that, we're going to kind of demystify the stack. I'm going to throw a marketing term out here, we're going to democratize Kubernetes, right? So it's all about -- when you think about, Liz touched on it a little bit, there's a lot of components that have to come together, right, all the operating systems, libraries, packages, all the patches, all that has to come together. We're going to curate that for customers. And then we're going to blast that down from the cloud with Intersight onto those hyperconverged clusters. So making it, to your point, Fabio, much more of a cloud-like experience, but on-prem. And then the connection to that, creating a consistent environment out to the public cloud, which is everything that you've been (inaudible) .

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**Fabio Gori;Senior Director;Cloud Solution Marketing**

Yes. You know why I like your word democratize, because ultimately, when we speak to customers, we're hearing that they want freedom. Freedom of what? Freedom of developing and deploying whatever they want. And that's actually the biggest benefit of containerization alongside scalability and portability is the fact that you can develop, say, in the public cloud and all these costly dev tests and environment that can actually be just spun up and spun down at will. What you have is that you can use all your favorite tools and then once you containerize this up, you can deploy it in the data center, you can deploy it at the edge, based on what? Based on your specific business KPIs, your performance targets, your cost targets, your compliance targets. That kind of freedom is the ultimate nirvana for IT teams.

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**Zane Powell;Associate Sales Representative**

Fantastic. Well, listen, I'm really excited about what the future holds for Cisco and multicloud. I'd just like to thank you guys for your time. It's been an absolute pleasure.

Now if you are staying at home and you're excited about that, as excited as what I am, and I'm sure you are, and you want to find out more, you can go and find out more from our sales representatives, and all you have to do is go to [cisco.com/go/sales](https://cisco.com/go/sales).

Now we're going to switch over to the Cisco small business and see what was going on earlier in the week.

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**PRESENTATION**

**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Hello, everyone. Welcome to Cisco Live. Thank you. I need the phone. So as Toby said, I'm the CTO for commercial and small business, and that's a funny term because many small businesses may not think that Cisco has a portfolio for them. They may think, and I would understand it that Cisco being the large technology vendor that we are, make technology that is too complex, too expensive or too difficult to buy and too difficult to install for them. But actually, that's not true. Sure, some of our products are exactly those things. They are too big, and they are too expensive and too complex. But some are not.

And I'm here today to talk about the subset of our portfolio that we have built and curated specifically for small businesses, which we have called Cisco Designed. It's the right price, the right features at the right size. It's easy to buy. It's easy to install. It's easy to manage and support, and it's, thus, perfect for small businesses. I'm going to explain all of the technologies that exist in that portfolio that enable them to connect to networks, secure those networks, collaborate with their customers and with each other and to using and compute their applications.

So let's get started. First of all, let's start with this little person. This is our small business user, and they want to get onto the network or their employees want to get onto the network. But before we let them get onto the network, we need to make sure that they are who they say they are. One of the easiest ways to hack into any network is with a weak password. 81% of data breaches happen for a weak password, but more than half of small businesses say that actually they don't have any password control policy in place. So what we need to do is authenticate the user and authenticating using only one password, one method of authentication is clearly not enough. We need 2 or more, and that's called multifactor authentication. So it's authenticating user with a password and a pin and another product and in some other password sort of way. So you have more than one method of authentication. And the way we do that at Cisco and the Cisco Designed portfolio is with a product called Duo.

We bought it for over \$2 billion a couple of years ago, and we authenticate users for our small businesses before they even get onto that small business network. Then we need to let them on the network. And the first thing you're going to hit when you get to a network is the wireless network, the Wi-Fi. And we have a number of choices because it's our resource here at Cisco that no matter what size of customer you are, whether you have a preference to cloud or a preference for on-premise, we have a product for you. So if you're a small business customer, we have the following: if you have a preference for on-prem, we have on-prem access points called the Cisco Business range. Fun fact, the Cisco Business range





actually has 30,000 Instagram followers of its own already. But what's really great about it is that they are new access points that were launched just a couple of months ago. They're this smallest form factor Wi-Fi access points in their range, very simple to install, very small, very easy to install and easy to manage. There at a price point of around \$120. They have mesh extenders, a full feature set and a really good range of access points in that \$120 and above range for the small businesses.

And at the next Cisco live, being held in Melbourne in 2 months, we'll be launching a mobile app to manage those access points also, making it very easy for customers. Now if a customer prefers cloud and many small businesses do, then we have the Meraki portfolio. The very ethos of Meraki is simplicity. It has to be simply -- or simple to install, simple to manage, simple to monitor. And the way they do that is with a Meraki dashboard in the cloud. And when you buy access points or switches or routers, as you'll see, they connect to that dashboard, and you can manage and monitor them, requiring very little IT expertise, which is often a feature of small businesses. So you can see there are a couple of the smaller MR Meraki access points that will connect to that dashboard. But if you are an even smaller business, and you have, say, 50 employees or less, you probably want something even easier and even simpler to install than that Meraki.

And that is where we come in to Meraki Go, the true low end small business portfolio for the customer that has 50 employees or less and prefers cloud. Now rather than me just tell you about Meraki Go and tell you how easy it is and how fast it is to install, I'm going to invite someone up on stage to show you. So please welcome on stage the product manager from Meraki Go, Lee Peterson. Hi.

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

Hello.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Hello. So Lee, we would really like to show how fast and simple it is to install a Meraki Go wireless access point. So the challenge is, I'm going to give you a completely brand-new, unboxed Meraki access point, that arrives in the post for a small business user. And I'm going to ask you to set that up as quickly as you can, and I'm going to time you to do so using my stop watch. Because we want to see how fast you can go from a box arriving in the post to a working Wi-Fi network. Can you do that for us?

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

I think so. I think I can do that.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Okay. Go for it.

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

Okay. Hi, Barcelona. How are you doing, everybody? I'm here today to talk to you about Meraki Go, which is our newest small business offering. We took, like Sarah mentioned, a lot of the simplicity that Meraki is known for and that we stand for and had to reevaluate some of the assumptions we make as part of that. What is simple to an IT professional is not necessarily simple to a small business owner, who has no idea what an SSID is or what DHCP stands for or even what an Ethernet cable is. And so really, this is the essence of that everything the customer needs in this box to be able to get up online and running. Can you change the screen over?



**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Can we change the screen over please to take a look?

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

So the way we do that is by using the Meraki Go app.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

And just to say that what we're doing right now is showing you on screen, the screenshot of Lee's mobile phone with the mobile app, correct?

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

This is -- yes, the actual mobile app being used, which we're going to use to install this access point right here, which we've just taken out of the box.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

I've started the timer. No pressure.

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

So the first thing that customer will do is download the Meraki Go app. We have some instructions here to guide them on where to get that available for iOS and Android, obviously. And we even tell the customer how to plug this thing in. They've never done anything like this before, to take the intimidation factor out of setting up the sort of technology, we give them very guided step-by-step instructions to do so. So take the device out of the box. Remove the mounting plate. So they have the option to wall-mount this. We have the power supply. We have everything they need right here in this box to get connected. The next thing we do is we want them to add this device to the network, right? So something traditionally that would rely on order kit numbers or serial numbers having to be manually answered. With Meraki Go, what we actually do is we take the QR code on the bottom of the device, just to show you, this is live that this is not -- I'm not cheating, we can just look at the device here, scan the QR code, and that will add that device to the customer's network. Within this process, we want them to name the devices. They may be adding multiple devices, not just a single device. So we're going to give this one the name, Cisco Live. With that access point, now we're going to look at the step of plugging this device in. And so again, like I mentioned, the customer has not done this sort of thing before. We need to give them a very simple set of instructions to follow. And we also explain to them the difference between mesh and hardwired access points and where they might want to use each of those and point out, of course, that at least one of these has to be hardwired. So I'm going to take this access point now and connect it here. We have an ethernet cable that's providing PoE. So these can be either powered over the included DC power adapter or we can use PoE to power them.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

So just to be clear, if a customer has Meraki Go or Meraki, they get PoE, and that PoE will power this access point as well as connect that to the Internet.

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

Now because the last thing...

**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Two minutes.

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

Anyone -- we're hitting the 2-minute mark. The last thing anyone wants to do is sit here and watch this thing to turn on. Why don't we let them get on and do some more setup. So within here, we can actually connect, and the customer can choose to watch this if they want to wait and see this device connect, it's connecting to the Meraki cloud. And as part of that, we upgrade the firmware. We push the correct configuration down to this device. So customers never have to think about, am I running at all the version of firmware? Is my security compromised because I've not flashed it to the latest unit? We take care of all that for them. But what we're actually going to do here is skip through that, we'll let this happen in the background, have the push notification to tell us when the device is ready, and then let them get on with setting up their first Wi-Fi network. So quite often with these sorts of devices you take them out of the box, you plug them in, and they advertise an open SSID that anyone could connect to, and they'll get on your network and be able to compromise your devices. So we actually want to guide the customer and make them set up a secure network. So in this case, I'm going to set up a SSID for Sarah to connect to. I'm going to give it a very simple password.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

I always wanted my own network at Cisco Live, how you know you've made it.

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

Making your dreams come true.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Thank you.

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

We're going to create the actual network there. And so not only we set up that Wi-Fi network, we've also given the customer the ability to share that with other people that may need access to it right here throughout the app. So this is connecting to a network that already has some devices on there. So as Sarah mentioned, some other parts of the portfolio, we're looking at the wireless access point, here, but we also do have switching and a security appliance as part of -- or security gateway, as part of this portfolio. And as you can see here that access point I just set up is already connected. I've got a greenlight here on the device, and I can see in the application that it's connected, up and running with that SSID we just set up. You can look on your device see that I got you set up.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Okay. Can I stop? Should I check? So we're at 3 minutes and 46 seconds. Can you just show that? And if anyone wants to just check this, you can go to the network, and you can see that the network Sarah is available. Yes, 4 minutes. Four minutes and 1 second. So if we stop there. So in 4 minutes and 1 second, if only you had just done it 1 second quicker, we went from a box coming through the door in the post to having a Wi-Fi network set up with so little IT knowledge, literally, my mother could have done it. Is there anything else we need to know about Meraki Go?

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

So some other things the customer might want to set up. Typically, you want to set up multiple different networks for your employees to connect to, for guests of your business to connect to. And one of the ways we make that easier is by making a set of assumptions about how the customer wants to actually set these up. So within this network we just set up for Sarah, if we decide that wants to be a guest network rather than have the customer have to know or how should I set a guest network up. It's as simple as hitting the slider, and we do some smart things you would expect the guest network to do. For instance, devices on a guest network can't talk to other devices on my network. They can't talk to each other. So it's simple things like making the set of templates of how we set that up, that the customer can be able to get online and be able to run that device like that.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

And thank you, Lee. The most important thing is what's the price? Is it in the small business customer price range?

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

So the starting price for the access point is USD 149. I won't translate into euro or pounds please, but it's in the ballpark of being something that represents good value to these small business customers.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

So it's \$149. It's a one-off price, no license, no subscription, you can keep it forever, and it will be supported forever, all for that first purchase of \$149. Yes?

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

Correct.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Fantastic. Thank you very much, Lee.

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**Lee Peterson;Senior Manager, Product Management;Cisco Meraki**

Thank you, everybody.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Thank you. So you can see how easy it is to set up that Wi-Fi network. And now at the back end of that Wi-Fi network, we've got to talk to the LAN. We've got to have a switch, and we have the same stack for the cloud preference customer, we have the Meraki stack. It connects to the same Meraki dashboard. You see here some of the low end Meraki switches. If they want the on-prem, we have our small business portfolio, like the SG350. Over 100 million ports of small business switching from Cisco has been sold in the last 5 years. Fantastic switching portfolio. And for customers who are small businesses, but maybe slightly bigger small businesses or no matter how small a business they are, they still want the Cisco Catalyst brand. And I can understand that. We do have 64% market share with the Cisco Catalyst, and some customers want that. We have the Catalyst 1000, which is the lowest enterprise switch for them.



And as Lee said, if they're a Meraki Go customer for Wi-Fi, if everything you just saw is exactly the same for switching, and you can set up a switch just as quickly using the same mobile app on the same device. We still haven't got you on the router onto the network yet though, so we need a router, same stack, Meraki Go, Meraki MX and the on-prem routers. The MX is actually a security UTM, which has routing functionality in it, ideal for the small cloud customer. Meraki Go is the router that connects to the same app. And then the RV345 is one example of an RV router I have put there. The RV router -- and please bear in mind, routing is what Cisco has always done. The RV routing is our Cisco business, small business portfolio router.

But it's the best-in-class by a really long way. As an example, 3x the speed of IPsec throughput of any other router in its class at the same price, 650 megs throughput. The RV router also has a 16-port integrated switch on it. So for a truly small customer, they don't need a switch and a router. The RV345 will do both. And some of the other security features that I've shown you, have also been integrated onto it. So our small business routing portfolio, like the RV, really is leading industry class.

So we want to get you onto the Internet, and we've got the network to do it now, and we've authenticated you are who you say you are. But before we let you on the Internet, we need to make sure that where you're going is safe and not malware. So what we do is we're going to do that by using a product called Umbrella. An Umbrella is a DNS lookup that checks that when you type [www.something.com](http://www.something.com), we will go and check that it's a safe place to go. It's not going to return with malware. It's one of the best-selling security products in the small business space at Cisco, and we do it, we go off and check that, that address is safe for you and route your traffic there, but without any delay. Quicker, in fact, than Google, we'll route you there. We then need to put you through a firewall and for that, we have 2 firewalls. We have the ASA, which has been our firewall for a really long time.

But in the last 12 months, we launched the next-gen firewall, which basically means it's a firewall that's coded to secure applications because, of course, that's what the world is about. And for that, in the small business space, small business size and price is the Firepower 1010, and that's the router. We will then take it even further because if despite doing that, we do let any malware through because perhaps it's a new virus that hasn't yet been found. We will remember we let that firewall through. And that -- so we will remember we let that malware through and a couple of hours later, if we see that it is indeed a virus, we'll come back and tell that small business customer, we let a virus through earlier, here's how to remediate. That's called advanced malware protection, and it's also in the small business portfolio.

Of course, not all small business customers sit in the office all day. They're out and about. They're traveling the world. They're working from home, if they're really good, they're working from their yacht. And so we need to enable them to connect to their network in the same secure way from wherever they are. And the way we do that is by establishing a VPN tunnel that connects them into the security network from wherever they are. That's AnyConnect. And it ties in to the Firepower 1010. It is also integrated into the RV router that I mentioned earlier.

Okay. I need to just take us off on a tangent for a moment to talk about security because the point is, okay, small businesses can buy from Cisco, but why buy from Cisco? Why buy from a large vendor? And the answer is precisely because we are a large vendor. As we will increasingly use AI and machine learning in IT networking, bigger is better because the more intelligence we get because we've got more boxes out there, and we've got more customers and more market share, the more intelligence that comes back into those AI engines. And the more intelligence we can, therefore, deliver to a customer even if they're a small business customer and therefore, deliver intelligence and AI that a small business customer couldn't actually afford any other way.

That's precisely why to buy from Cisco. And a great example of that is security. Because watching all of us right now, overlooking the Internet right now is this analytics engine called Talos. It's a security intelligence engine, massive analytics algorithm and about 550 people. And it's watching. And what it does is every single security product out there and not just the Cisco Designed small business products you see now, but literally every security product that Cisco makes and all of them that are out there for all customers, we are the largest security vendor in the world. Every time they see a breach or a piece of malware, a virus, ransomware, spyware. Any kind of malware, it tells Talos out there in the cloud. And Talos in return, then uses an intelligence, computes that intelligence and tells every other security box out there in the world.

So if you're a small business customer, and all you bought was one Firepower 1010, then you will get that same intelligence that the Bank of America would get for having an entire security network with Cisco because you're talking to the same Talos, and it's getting all that intelligence from everywhere else. So however, small a business you are, and however, few products from the security portfolio, you're buying from Cisco, you get



that intelligence of the largest intelligence security engine in the world, precisely because we're a large, big vendor. It's the power of Talos, which is why, because we're so large and we have such a market share. We actually block 20 billion malware threats every day. And our nearest 5 competitors, which you can see there on the chart, put together, block less than 10% of that. That's the value of a large vendor such as Cisco.

Okay. So we've now got this wonderfully secure network. We've connected, and we've done it securely. But before I move on to compute and collaborate, there is one other product I'd really like to show you because if that customer was a cloud preference customer, and they have that preference from Meraki, that same Meraki dashboard that manages the network will manage something else. Something else, called Meraki Vision. And you may think of Meraki Vision as a CCTV camera, but there's so much more than that. And to show you how much more of and how clever it is. And again, how much it benefits from the AI of this enormous dashboard in the cloud with a large vendor like Cisco, please welcome on stage the product manager for Meraki Vision, George Bentinck. Hello.

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**George Bentinck;Director of Product Management, Camera Systems;Cisco Meraki**

Hi, Sarah.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Hi. So what we'd like to do, and we're here for a small business focus. So we'd really like to show the audience today, a small business type CCTV camera.

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**George Bentinck;Director of Product Management, Camera Systems;Cisco Meraki**

Okay.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

I know it's more than just a camera. It's a sensor with the camera in it, and you're going to tell us about that. So what can you tell us about it. And first of all, how small exactly is this camera?

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**George Bentinck;Director of Product Management, Camera Systems;Cisco Meraki**

It is really small. So there you go.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

So it's pocket sized. So if I can just show that. So this is the small business camera that we're going to demonstrate to you today and again, demonstrate how easy it is. It's a fisheye lens, right?

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**George Bentinck;Director of Product Management, Camera Systems;Cisco Meraki**

Yes.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

One camera in any premise is all that a small business will need. Let me hand over to George, and he'll show you what's great about it.

**George Bentinck; Director of Product Management, Camera Systems; Cisco Meraki**

So if you're not familiar with the Meraki camera, essentially, we've tried to get rid of everything else that you needed to have a camera system that works. And that's because we've put everything you need in the camera. So you don't need a server, you don't need anywhere to store your video, and we don't use your WAN to upload the video either. And that's because everything, all the smarts and all the storage is in the camera. We've been able to do it because it's basically built off the advances of the mobile phone industry. So this camera has 256 gig of storage in. It has an octa-core Snapdragon processor. And all of those sound like incredibly great specifications, but what does that mean? It means you get a really simple, easy to use security camera, where you can just have one for your small business, and it will secure it while also giving you some really cool analytics. So we can go look at that demo now. So can we go to the demo, please.

So I'm logged into the Meraki dashboard. So if you have some of those other Meraki products, you will see them in the same in space. You don't need to go and do anything else to start working with your camera. And we're going to go to a small retail store in San Jose. And I'm going to go back to, let's say, Thursday, I want to go look at noon. So one of the things that is really useful about cameras is, you can see what's going on, when you're not there or somewhere that's really far away. So this camera's in San Jose, and I have connected, and I'm looking back in time and I haven't needed to do anything to make it work. I don't need a VPN. I don't need a special type of connection, we create an HTTPS connection to the camera for you, so you can watch video from anywhere. And so we have a small restaurant chain, for example, where the proprietor wants to make sure that his employees are making the food correctly.

So they just put one camera in each kitchen, and then he watches the chef, making sure they cook the food according to the standard he has set. So not a security use case, but just that very simple visibility allows them to know what's going on. So we're watching this. But I want to get into more detail. I just saw that lady walk through that door. So I want to find out who else has walked through that door. So I am going to be able to search this area, and if I scroll down, I get these incredible composite images. So these take all periods of time, cut them into pieces and assemble them as one frame. So you're looking here at 30.1 seconds displayed as one image. And all of this was done in the camera because the camera is so powerful. And so then we're like, okay. Well, I want to see this. I want to see what happens. So I'm going to hit play, and it's now going to play that video for me, and we can still see these guys walking around. It's much slower watching it in real time. But maybe we want to sort of go in and track them. So we can start watching these suspicious people here. But now they're splitting up. But with this one camera, we can see to the very back of the store. And if we come around here, we can see at the very front of the store.

And because everything is in the camera, if you just want one, that's fine. But if you want more, you want 5, 10, that's also fine. You never throw anything away as you grow or if you scale down. So the last piece I want to go through because it touched on certain things Sarah was talking about, which is the power of the big company, this idea of bringing analytics, especially machine learning for artificial intelligence to play is that we also do machine learning for computer vision in the camera, again with no servers and without sending your video to the cloud. So I want to go in here, and I'm going to go back and I'm going to go look at one of these days here. And the graph you're seeing here is the camera's detection of people using its object detection algorithm. So what's useful about this? Well, you may not care, but it allows you to do much more advanced alerts for a security use case or it allows you as a retail customer to have some understanding of when you should open or when you should close.

And I want to sort of finish with probably my favorite story because it's on a topic that I'm quite keen on, which is this idea of democratizing AI. AI is in the hands of these really, really big companies. And it's quite hard to get that incredible technology, providing advantage to the smaller customer. And so we have a customer that has a library, and they bought some Meraki cameras for safety. But because this technology comes in the camera at no extra cost with no extra servers, they were able to use it to understand how busy the libraries were. And that was important to them because, typically, they got their funding by looking at how many books they had loaned? How many CDs they had loaned? How many DVDs they had loaned? But people don't take those things out of the library anymore, but they still go there for the Wi-Fi, they still go there to use the computers and other things. So you don't think of the library as this cutting-edge area of technology, yet by embedding this artificial intelligence in the camera, it means even the smallest or low-tech of customers can get advantage from it.



**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Thank you, George. Thank you. And I want to pick up on this low-tech customer because it is a feature of some small businesses that they don't have a lot of in-house IT experience. So the camera has no -- needs no IT knowledge.

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**George Bentinck;Director of Product Management, Camera Systems;Cisco Meraki**

Needs no IT knowledge.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

It has no back-end systems, nowhere that it gets stored. It all gets stored on the camera, no back-end infrastructure, no cabling, nothing more than that camera that you got out of your pocket today.

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**George Bentinck;Director of Product Management, Camera Systems;Cisco Meraki**

That is a good point. I forgot to say that they're all Wi-Fis. So we are not magic. You do still need electricity. But if you want to connect them to Wi-Fi, all of them are Wi-Fi and sort of going back to that point about how easy they can be, my 75-year old dad has a few of these at home. And when a van drove into his fence, he was able to find out what happened without my help.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

So the innovation was worth it. George, thank you very much, indeed.

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**George Bentinck;Director of Product Management, Camera Systems;Cisco Meraki**

Thanks, Sarah.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Thank you. Okay. So we've connected, we've done it securely, and we've added this nice, great little feature of a sensor in a camera with Meraki Vision. Now we need to use applications. Every business of any size uses applications to run its business. But it's unlikely that most small businesses would go out and build their own data center. They'd probably use a public data center and probably, also have some private, and that they probably run some applications in the branch called hybrid data center, bit of public and a bit of private. So let's have a look at that private data center, they're not going to build a data center, but how do they run those apps in the branch? Well, at Cisco, we've had for a long time, the UCS portfolio, over 55,000 customers already have UCS compute servers computing and running these apps out there in small businesses already today.

But the industry moved to hyperconverged where we converge, put together the compute and the storage into one box. And the Cisco solution for that is called HyperFlex, and it was way too big for small business customers. So we brought out HyperFlex Edge, a smaller 2-node version, perfect for small business customers, who with just one box, want to run any applications in their branch and store the data that goes with it. And you've got to manage that. And again, it's about doing it simply because you have low IT resources, and you want to do it as cheaply as you can, but you also want that clever intelligence of AI that comes from a large vendor. And so that's what Intersight does. Intersight sits in the cloud. And because we have such enormous market share, it's collating all the data of all of the HX Edge and all of the HX and all of the UCS servers that are out there, and it's taking them up into that Intersight cloud.

And what it's doing is it's very simply giving back commands and direction on how to best manage your network. So if you have no IT skills, you get that AI, which keeps getting bigger and better all the time as more and more devices are connected to it. To go back to a small business user



to say, here's what to do with your network, here's how to make your compute efficient, a little bit more efficient. It's even being integrated with Alexa so that you can say something as simple to as Alexa as, "Tell me how my network is running." And Alexa will tell that small business user, how well and how efficient their compute network is running. That's Intersight. Again, this is why to buy from a large vendor like Cisco because we have 450,000 devices out there being managed by Intersight right now collecting intelligence and becoming more and more intelligent about how to run networks as I'm standing here. From an app dynamics perspective, if you're a small business user, let's say, you're a pizza delivery company, and your business is an application where you will order -- order a pizza using an app on that phone.

You want to know how well the app is running because that app is your business. And to do that, is AppDynamics, and you can buy as few licenses as you like for that. So it is as relevant for small business customers to understand how well that app, i.e., their business is running, when their business is an app, which is [often]. So that's how it compute, that enables them to compute their applications and run their applications. But we also promised we would enable them to collaborate with each other and with their customers. And we have a wide portfolio of products in our collaboration space that enables them to do callings, meetings, messaging, have video endpoints, have phones, have headsets, have dongles, all these kinds of things. And any small business user could go out and buy all of those things from lots of different vendors today. But to show you the benefit of why to buy them all from Cisco, please welcome on stage, Mark Needham. Come on up, Mark.

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**Mark Needham;Business Development Manager, Worldwide Collaboration Sales GTM and Strategy**

Thank you.

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## QUESTIONS AND ANSWERS

**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Thank you. So Mark talk us through. What is the value of buying all of those things from Cisco in one -- from one vendor?

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**Mark Needham;Business Development Manager, Worldwide Collaboration Sales GTM and Strategy**

Well, one of the big changes we've made of late if we're moving the entire collaboration platform onto a single platform. So what do we mean by that is there's 5 critical collaboration workloads. You've got your meetings, you messaging, your calling, your devices and your contact center. And by bringing them all on to the single platform, there are a number of huge benefits. For the users, it's a common UI, a common experience across the entire portfolio. From an IT perspective, you'll have a single point at which you'll apply your integrations via the cloud APIs. You'll have a single point where you'll apply your security and compliance. A single point where you'll have your -- all your management and analytics with the entire experience. And finally, you have a single point where you have the application of AI and machine learning what we call cognitive collaboration.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Okay. And so you talk about cognitive collaboration, which is our term for AI and machine learning. Clever collaboration, if I can call it that. Now I've talked about the benefit of having a large vendor like Cisco that provides more and more AI because of our dominant market share and because we're such a large vendor. What does that offer customers in the collaboration space?

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**Mark Needham;Business Development Manager, Worldwide Collaboration Sales GTM and Strategy**

So it's a massive topic for us. So last few years, we've been building more and more AI and machine learning into our collaboration experience. And some of the most recent acquisitions we made included Voicea and Accompany. And what we've done with those acquisitions is really built AI natively into the single Webex platform. So I'm just going to give you a taste of a couple of those highlights very briefly. So what Voicea brings to the experience is intelligent translation and transcription. At the end of a meeting, it will package up and summarize what has just happened





in that meeting, what the transcript was, the recording, what the actions were, when they're due by, who said what. So all that is going to be in a single platform.

Additionally, that acquisition allows us to enhance our voice assistance. So okay WebEx to control your meeting experience. And with the Accompany acquisition, this is about how you build greater affinity and greater rapport with the people who are meeting. So it will go out onto the Internet and pull business relevant insights about the person you're meeting. What they said in an annual report, when they spoke at an event. It will also pull through information from your active directory, so you haven't got to go onto your Internet to find out what your phone number is Sarah, when we're in the office. And -- but the really important thing is you own that information. So Sarah can unsubscribe. You can edit, you can enable which elements of that experience you want, so it meets all requirements for GDPR and the same applies to companies as well.

It's not just about individuals. It's about the companies you'll be working with additionally. Now the final element here is some of the ways we've used AI for quite some time now is within facial recognition within the meeting experience. So you know everybody that's in the room. Equally, it does people counting. So you look at your optimization of your spaces, you've got no meeting rooms, but you've got 5 people in a room for 10, what you need to do, build some walls. So that rich insights that allow you to drive the organization forward and be more successful holistically with collaboration.

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**Sarah Eccleston; Managing Director and Global CTO, Commercial and Small Business**

Okay. Sounds fantastic, but a key requirement for the small business portfolio is that it is in the right price range. Some people will be sitting there thinking, this sounds very expensive. Is it?

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**Mark Needham; Business Development Manager, Worldwide Collaboration Sales GTM and Strategy**

Not at all. And we hear that sentiment quite a lot. There was a time where to get started with collaboration at Cisco, you'd be spending hundreds of thousands of euros. You'd need a massive on-premise infrastructure, but now with all the workload moving to cloud, you can start for 0. So you could go to webex.com now, and by the time this session's finished, download the fully featured enterprise-grade Webex Meetings experience via webex.com. And as you wish to have greater abilities, you can add that into the experience online direct. So that's what you need for the software experience. But then you're also going to have your meeting rooms, you're meeting spaces in your offices, and we've got a whole suite of products, which have been designed to take into account the needs of small business.

We do have at the high end video endpoints that cost hundreds and hundreds of thousands, but when we look at smaller businesses, there are a couple of key products, which are really, really popular. The first one of those, and we've recently launched is our 700 series headsets. This is that luxury blend between what you use on a plane, so when you're in the café, working from home, and when you're at your desk paired with your phone or with your laptop. Equally, this pairs with our video endpoints. So this is the best [pro] which has been -- that's been launched with [them] on our stands. So again, all these are designed for small organizations in mind. What you also have for any space with a screen, we have the Webex Share where you can wirelessly share in -- of a same system Webex experience in each and every room.

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**Sarah Eccleston; Managing Director and Global CTO, Commercial and Small Business**

So you can just plug that dongle into the back of any screen in the office and start sharing?

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**Mark Needham; Business Development Manager, Worldwide Collaboration Sales GTM and Strategy**

Exactly. Straight into the HDMI, and you're good to go. And also then, when you look at a more video conferencing experience, this is the Room Kit Mini. Our entry-level video product that has the same full experience as what we put into executive level boardrooms, and it's very achievable for smaller organizations. And in fact, this week, there have been announcements, which will make this even better for small organizations. And

finally, when it comes to the hardware, we have the Webex Board. This is a single experience. It has a whiteboard in, co-creation, iteration, full video and everything you need to drive entire projects forwards.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Okay. So it's in the right price range. Is it also easy to buy? If everybody wanted to go out and buy one right now, how do they do it?

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**Mark Needham;Business Development Manager, Worldwide Collaboration Sales GTM and Strategy**

So as you've already said, you can go straight to webex.com for your software. Yes, you got that there. What you can also do very soon, you'll be able to go to Amazon for business and buy your video endpoints from Cisco via Amazon. And there will be some times where you're looking for more of an integrated solution, maybe [saying] it's a bit more complex. And that's when we direct you to our partner network. So in Europe alone, there are 30,000 collaboration certified partners. Within walking distance of where we are here, there are 5 certified for collaboration and work with smaller businesses.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Brilliant. Mark, thank you very much, indeed.

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**Mark Needham;Business Development Manager, Worldwide Collaboration Sales GTM and Strategy**

Thank you very much.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Thanks, Mark. Okay. So I'm going to finish with 2 final points. And let's make 2 points. The first one is, as you look there at that full Cisco Designed portfolio, we're not just a networking company. We've enabled customers to authenticate users connect to a network, wirelessly or with switching and routing, no matter what their preference, cloud or on-prem. We've made sure that where they're going on the Internet is safe. We've run them through a firewall. We've remembered if we've let some viruses through earlier, and we've gone back and told them, and we've allowed them to do all of that from anywhere in the world. And then just to make it even a little bit more clever, we've added a camera with a sensor and AI in it that suits the small business portfolio. We've enabled them to compute their applications in the branch.

And again, manage that from anywhere that they wish in the world using Intersight in the cloud to manage their compute and how they're running their applications. And we've given them AppDynamics, which tells them how well their app, their business is running. And then we have the full collaboration suite that Mark just talked about. And the point -- the first of my points is this: at no point of doing all of that, did we have to go off to another vendor. We stayed with Cisco, the whole time. Every product that we just went through is the Cisco Designed small business portfolio. They don't have to go off and review 20 different vendors. It's entirely within the Cisco Designed portfolio that is right for them. It is the right level of simplicity, the right price, the right products, the right feature set, the right level of complexity. And as you can see, can be done by your mother or your grandmother in many instances. But it was all in the Cisco Designed portfolio, one vendor, and that's the power of Cisco. Here's the other power of Cisco.

The other thing that we talked about as we went through that is, we showed you that small, it needs to be simple, simple to install, simple to manage, simple to operate, but it isn't stupid and with a vendor and the power of a vendor the size of Cisco is how you get access to that intelligence that a small business otherwise couldn't get, through Talos, through the Meraki dashboard, through the AI in the Meraki Vision cameras, through the intelligence that Intersight is collating. And it's all happening while we're sitting here. And it's precisely because we are a large vendor. With the market share we have, that our intelligent engines get to be so intelligent so that our machine learning is so effective and that our small

businesses can have access to that in all of these ways through the Cisco Designed portfolio. And that is what Cisco has designed, and what we have made possible for small businesses. Thank you very much for listening.

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**Nish Parkar;Cybersecurity Communications Manager**

So we're here at Cisco Live Barcelona 2020, and we're going to continue talking small business. So to help us see that. I'm thrilled to be joined here by Sarah Eccleston. Sarah, you're the Managing Director and Global CTO for our Commercial and Small Business segment, and Marc Monday, so you are the Global Head of Small Business for Cisco. So welcome both. How are you doing?

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Thank you, we're good.

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**Marc Monday;GM/VP Global Small Business Customer Sales**

Yes, great to be here.

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**Nish Parkar;Cybersecurity Communications Manager**

Is this your first Cisco Live?

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

No, no. I've been at Cisco for quite a while. So no, this isn't my first one.

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**Nish Parkar;Cybersecurity Communications Manager**

And you?

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**Marc Monday;GM/VP Global Small Business Customer Sales**

Yes, I am a newbie. For me, it's my first one.

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**Nish Parkar;Cybersecurity Communications Manager**

Oh cool. Well, welcome.

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**Marc Monday;GM/VP Global Small Business Customer Sales**

And excited to be here.

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**Nish Parkar;Cybersecurity Communications Manager**

Very exciting. And I've had a lot of buzz going on already about small business, right? So Marc, we keep hearing that small business is very big business for Cisco. And actually, it takes up half of the world's global GDP, right? So how are we showing Cisco's commitment to the small business market?

**Marc Monday;GM/VP Global Small Business Customer Sales**

Yes. I mean, so beyond half of the global GDP, it employs about 2/3 of all the employees in the world. So what we're doing today is we're really focused on loads of small business sessions. We have an amazing booth in the world's showcase. It's an escape room. It gives you an opportunity to experience our technology in a bunch of different ways. It's incredibly interactive and exciting. I highly encourage people to come and visit.

**Nish Parkar;Cybersecurity Communications Manager**

And I actually had a go at that small business escape room just now, won myself so Meraki Go points. If you haven't been already...

**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Did you get through?

**Nish Parkar;Cybersecurity Communications Manager**

We did.

**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Well done.

**Nish Parkar;Cybersecurity Communications Manager**

We did as a team. Okay. So small business tends to be concerned a lot about complexity, about implementation and sometimes definitely, it can be seen quite big to actually work with some of these companies. So how is Cisco responding to this?

**Marc Monday;GM/VP Global Small Business Customer Sales**

Well, there's virtue in big. I mean, the reality is we are a big company, but we've delivered excellent support. We deliver excellent support. We deliver excellent warranty. And we have technology that could fit any need. And the mission for us is to meet the customer where they are with the technology that they need for that day. And yes, we can be complex, and that's great for big companies, but we can also be small for small companies.

**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

And I think from a technical perspective, we do quite a lot in this area. So for a portfolio -- a product to make it into the Cisco Designed small business portfolio, it has to be simple. And kind of almost simple enough, sometimes that even my mother can do it. And you saw that in the presentation, right? Even my mother could have installed that wireless access point. So we do things in order to make it simple to buy, simple to manage, simple



to install. So that gives you the Meraki dashboard. The whole ethos of Meraki is simplicity. Meraki Go even easier, we're launching a mobile app at Cisco Live in Melbourne, which I talked about, which is to manage the Cisco wireless access points of Cisco Business.

The Intersight GUI is really simple and really lovely GUI to manage your compute and your HyperFlex [assays]. So we try and really enable anyone, no matter how much or how little IT expertise they have to deploy our systems in a really simple way as well as buy them simply. We're increasing our e-commerce, so that people can buy them really easily. The support gives 24/7 support. We have various local languages. So we really try and make it as easy as possible for people to buy, to support, to use and to install and configure themselves, even if they're not an IT guru.

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**Nish Parkar;Cybersecurity Communications Manager**

Well you have sold already. So I've heard a lot of our Cisco Designed for business. I see that internal and external events really exciting. So what does it take to make the [cart] into this portfolio. What is it that special about it? How do you get there?

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

So of course, Cisco has got an enormous portfolio. And it's a fantastic portfolio. But we curate that to Cisco Designed. So what do you have to do to be in Cisco Designed? Well, you've got to be, again, easy to buy. So we look at e-commerce platforms and simple ways of buying and also, simple to buy through our partner landscape. So easy to buy, again, easy to install, easy to manage. It has to have the right feature set, not too complex. I think just said, we have products that are fantastic for larger customers or products that are fantastic if you happen to have a Chief Security Officer. So look at your security network as a holistic view. But if you're a smaller business, you don't need that level of feature set. And that feature set comes at a price.

So it's about giving it the right feature set and only the feature set that's needed at the right price and then making it real easy to buy, easy to manage, easy to support. And if it's all of those things, then it can go into the Cisco Designed portfolio as well as it is something that a small business needs. Does a small business need Tetration from Cisco? Probably not. Does it need CloudCenter? Probably not. Do they have the IT skill set to deploy DNA center? Probably not. But if it's something that they need, and it's at the right price and the right level of simplicity, then into Cisco Designed it goes.

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**Nish Parkar;Cybersecurity Communications Manager**

That sounds great. And Sarah, your innovation talk earlier was about how Cisco is -- Designed for business is about connecting, computing, collaborating securely, as well as the security is big part of that.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Absolutely. Security is massive.

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**Nish Parkar;Cybersecurity Communications Manager**

Exactly. So what are some of the highlights and key takeaways from the keynote that you did? What do you want to take away from that?

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

So I think take away 2 big things from that keynote. The first one is, as I said in the keynote, at no point when articulating that portfolio of all the things. We know all small businesses want to connect and secure and compute and collaborate. And at no point when I articulated that portfolio, did I have to leave Cisco and go to another vendor. It was all Cisco. And that's the first key takeaway because there is no other vendor on the planet



that can say that or even do half of that or even a quarter of it, frankly. So the power of Cisco is the fact that we can do all of it. And then the second key takeaway is that because we are a large technology vendor, and we do have high market share, that's the value to the small business. It shouldn't be off putting. I can understand why it might be off putting to a small business. But actually, it's the value because all of these systems, the Meraki dashboard, the Meraki Vision cameras, the Intersight, the Talos that I talked about.

These are all huge analytics engines and dashboards sitting in the cloud, collating all that intelligence that goes into AI and machine learning. And the more that goes into it, the better it is. So because we have that massive market share that we do because so many of our wonderful customers are so loyal to us, and we have such great market share with them. Because of that, our AI just keeps getting bigger and better, and our machine learning just keeps getting better. And so the small business customer who buys just one product from us can benefit from that intelligence. And they couldn't get that any other way. They couldn't buy it. They couldn't get it from a point vendor. They couldn't get it from a smaller vendor. So the key takeaway is always buy from Cisco because we are big, even though you're small.

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**Marc Monday;GM/VP Global Small Business Customer Sales**

Yes. I might interject, small companies get big. And again, we're calling them small, but it's really someone's vision, someone's passion. They're taking risks. They want to build a company. And so they don't think of themselves as small. They think of themselves as incredibly important, and we do, too. We want to make sure that we can help them achieve their vision. And so if it's starting small and working your way up to levels of complexity with our dashboard, with our analytics, with our instrumentation, that's perfect for a business that's growing. And so we really want to make sure that we embrace them as a business where they've taken a risk and help them grow to wherever they want to be.

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**Nish Parkar;Cybersecurity Communications Manager**

And I find it really fascinating being here at Cisco Live Barcelona 2020 and seeing some case studies maybe around some of the bigger enterprise customers that we have. But it's amazing and fascinating to know that just even if you are an entrepreneur roaming around, you're a one person business, there's something here for you that can actually help and make a big impact.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

It really is. And I talked about AppDynamics in the presentation. And just to drill a little more on that because many small business -- we talk about digitization, which is the concept of doing something you used to do with people but doing it now on the web or doing it. You used to bank in person in a branch. Now you bank on an app or online. That's digitized banking. And some of our small businesses are the leaders in that. They're the first to do that. Many small businesses, their business is an app. I used the example of a pizza delivery company, but there are many, many retailers, many different small businesses. And so you want to know how your business is running. You need to know how your app is running. You need to know in the pizza delivery example, which area of the city are people ordering the most pizzas from?

Which flavors are most common in these areas? What's your delivery time like in different areas? And AppDynamics can give you all that insight precisely because you're on the Internet. And so as you're walking around here as a smaller business, you may look at AppDynamics and think too complex for me, but actually, some of this stuff is perfect for you and just because someone is a smaller business, as I said in the presentation, small means we need to be simple, but it isn't stupid and just because you're a smaller business, it doesn't mean that you don't want that level of intelligence or clever products to help you run your business well.

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**Marc Monday;GM/VP Global Small Business Customer Sales**

Yes. I mean, the fastest-growing segment for cloud adoption is small business. They're the first to adopt. And so the reality is that Wi-Fi is their lifeline. The connectivity is everything for their business. If they're running instances of cloud services, they have to be connected. And there's sort of this new Maslow's hierarchy of needs air, food, water, shelter, connectivity -- secure connectivity and collaboration. And I think that's what we bring to a small business.



**Nish Parkar;Cybersecurity Communications Manager**

Yes. And just to kind of wrap up on that, because you mentioned, obviously, some of the technologies. So we're adding some the latest additions to the portfolio, the business wireless access points, new Meraki Go. The new Catalyst 1000 switch. Tell us a bit more about their technology. Is there anything else that's really worth the mention?

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

So the new Meraki Go. So Meraki Go has been extended, so we have had Meraki Go wireless, which you configure on the app on your device. For a while, it's been extended to include switching and routing. The new access points are part of the on-prem Cisco portfolio, great development, new hardware, smallest form factor, as I said, just in the right price range for that small business customer. So new access points launched there and what's coming is that mobile app to manage them as well. So that's going to get better. And we will see more developments in that small business on-prem range throughout the course of the year as well. So look out for that we're switching later in the year. The Catalyst 1000 is an interesting one because many customers want that small business switch, right feature set, right price.

Other customers still want that feature set that they want the Catalyst brand. And so previously, they were buying a switch called the 2960-L, the Catalyst 2960-L or the Catalyst 2960-P. And that was due a hardware refresh. It needed a refresh. So we've upgraded that now. We've refreshed that to the Catalyst 1000. So the on-prem switching portfolio is Catalyst 9000 for our top end range of switches, the Catalyst 1000, which is that lowest catalyst enterprise level switch for the smaller customer or mid-size customer. And then as we go down (inaudible), the small business premise switches or if you want cloud, it's Meraki Switching and Meraki Go. And so in that way, we've got a really nice, easy, simple chain, 9000, 1000 small business, Meraki and Meraki Go.

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**Nish Parkar;Cybersecurity Communications Manager**

And it sounds like small businesses for choice and everything else about Cisco...

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

That's right.

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**Nish Parkar;Cybersecurity Communications Manager**

And lots of exciting developments as well. So if people want to learn more, and they're watching the broadcast at home, where should they go?

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

So you can obviously always Google, and it will bring you that way. But if you go to [cisco.com/smallbusiness](https://cisco.com/smallbusiness), you'll get much more details on all the things I've talked about.

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**Nish Parkar;Cybersecurity Communications Manager**

Great. Well, thank you both for joining me.

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**Marc Monday;GM/VP Global Small Business Customer Sales**

Thank you.

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**Sarah Eccleston;Managing Director and Global CTO, Commercial and Small Business**

Thank you for the time.

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**Nish Parkar;Cybersecurity Communications Manager**

And if you're here at the show, make sure you check out the small business escape room. Watch this space. We'll be right back.

(presentation)

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

I really do love that cognitive collaboration video. Every time I'm standing up here, and I hear it playing, I just -- I have to dance, and I have to sing along. That's the way it goes. Welcome back to the broadcast. Thank you so much to all of you for being here with us. Remember to keep reaching out using #CLEUR. We want to hear from all of you on all forms of social media, but we're just glad to have you with us here on the screen. My name is Steve Multer. So we just played the innovations for small businesses talk that happened on Monday afternoon. Sarah Eccleston, our Managing Director and Global CTO for Commercial and Small Business, we are going to talk about small business here for the next few minutes as we head toward the 2 o'clock inhibition talk with Michael Beesly about transforming your IP infrastructure and leading market disruption.

But now first, SP, service providers, who really represent some of the largest enterprises in today's changing world. They are the ones right out there on the forefront, on the precipice of network transformation, which is what's driving the Internet of the future. It's new silicon, it's new optics, it's new software systems, 5G. And here at Cisco, we are addressing all of it, and we're going to talk about that for the next few minutes with one of our great customers Turkcell. I have got Batur Genç with me. How are you Batur?

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**Batur Genç;Turkcell;IP Network Manager**

Good. Thank you.

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## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

Thanks so much for taking the time to join us in the studio. We appreciate it. You are an IP Network Manager for Turkcell, which is based in Istanbul, and you are the largest mobile phone operator in Turkey today. Let's start by talking about some of the goals and the vision of Turkcell.

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**Batur Genç;Turkcell;IP Network Manager**

Sure. Turkcell is a commerce telecommunication and technology service provider. It is headquartered in Turkey, Istanbul, operating in 5 countries with more than 48 million customers.





**Steve Multer;Chief Storytelling Officer**

Wow. Excellent. All right. Let's begin with the SPNA. So last year, you signed the very first SPNA with Cisco in EMEAR, which is amazing. And thank you. We're glad that you're leading the way on that. What were the key drivers that attracted you, that attracted Turkcell to the SPNA program? And why, why us?

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**Batur Genç;Turkcell;IP Network Manager**

Actually, the common servings of all service provider companies on the industry is that traffic is growing so rapid. But revenue is not that much rapid -- grow revenue better. And this affects some critical financial KPIs, such as CapEx over revenue or EBITDA and SPNA helps us in this way. SPNA helps us to keep CapEx investments more flattish. Also helps us to simplify our investment planning strategy. So even with significant traffic growth, we can keep our CapEx more flattish. That allows us to keep investing on more capacity, more new technologies. We don't sacrifice from quality. So we can keep our high-quality services with enough capacity without make budgets explode.

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**Steve Multer;Chief Storytelling Officer**

Absolutely. So which easily translates out to what's happening within the customer experience, what does the customer benefit from the SPNA capability?

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**Batur Genç;Turkcell;IP Network Manager**

Actually we -- we're serving our customers voice, data, TV and value-added services for both mobile and fixed networks. Also -- we also offer digital OTT services globally, such as instant messaging, music platform, personal cloud, and we have huge service variety. So with -- there's such a huge variety, it brings us to big set of different requirements, different network segments, different network technologies, especially in IP network. SPNA helps us to keep everything simplified, keep planning simplified. So we can keep going on investing on new technologies without concerning about complex software licensing models, no need to spend time for this complex side so we can focus on our technologies.

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**Steve Multer;Chief Storytelling Officer**

And I wanted to ask you, do you believe that complexity is the largest challenge that you face? Or are there other important challenges that SPNA is helping to leap over?

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**Batur Genç;Turkcell;IP Network Manager**

Sure. Actually, we all live in a digitalization era now. And in this era, as a problem of innovator, Turkcell is enabling digital lifestyle for consumers and also, digital transformation for our customers. Our company's vision is superior digital services for a better future. So we have the state-of-the-art 4G network now. And we are ready to launch 5G. Also, we are heavily investing on virtualization and cloud technologies. And as I said, also digital OTT services, we are really focused on. And we have a big variety of -- big portfolio of digital services. For customer experience part of this, we can explain it helps us to keep it simple, more focus on technology instead of investment budgeting or licensing models. We keep -- have time to spend more focus on technology, improve the technology, improve our services with this huge variety. So customers also benefit from our superior quality services.

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**Steve Multer;Chief Storytelling Officer**

So as the 5G rollout continues, let's look at your 12- to 24-month plan, your general scope and your strategy. Right now, we still don't know entirely what 5G is going to look like. We're starting to see aspects and elements of 5G, but we're not 100% sure where it's going. What is the Turkcell plan for the coming 1 to 2 years?

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**Batur Genç;Turkcell;IP Network Manager**

Actually, we are total ready to launch our 5G network. There's all elements and technical points of it, we are ready. We are just waiting for the licensing period. So we are -- in that next 1, 2 years, we are focusing some services of 5G, of course, it's not 100% ready at the first stage of all services. This is -- we think -- we thought that the key points are and the IoT is a key driver for 5G. Also fixed wireless access with 5G is a killer use case of 5G. And beyond that, we are ready to invest on this autonomous cars, low latency applications, a lot of value-added applications and services that makes people's daily life easier.

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**Steve Multer;Chief Storytelling Officer**

Excellent. I want to end by talking about the relationship between Turkcell and Cisco. What is particularly unique? Why you chose Cisco for partnership in this particular arena and the type of support that you feel you're getting at Turkcell?

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**Batur Genç;Turkcell;IP Network Manager**

Actually, we've been working with Cisco for so long time. It is always, we are being a strategic partner with Cisco. It's high-quality products. We want to make high-quality services so as Cisco. With this SPNA model, it also helps us to ease the -- make longer-term plans. It's -- instead of annual basis planning, with Cisco SPNA model, we can see longer term. We can foresee longer term, so we can make midterm planning. So it also gives us an agility and more of that will give space and time to deal with other things.

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**Steve Multer;Chief Storytelling Officer**

Last thing that I want to ask you, your golden piece of advice from your particular perspective. If you're talking to other service provider organizations about their SPNA journey and their experience, what advice can you give them based on your own?

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**Batur Genç;Turkcell;IP Network Manager**

As I said before, the key word is agility for all service provider companies in this era. So with SPNA, it helps you to align your IP network to company's overall technology strategy. So this gives us more agility. It simplifies your planning and operations and it gives -- adds agility to ourself. On the other hand, if you evaluate the expanding model, expanding offer effectively and align it with your investment strategy, you can be -- you should be finding a good breakeven point. And after this breakeven point, it's commercial and technically true minimum model for both Cisco and the service provider.

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**Steve Multer;Chief Storytelling Officer**

Excellent. Batur, it has been such a pleasure to talk to you. Congratulations. Thank you for what you're doing at Turkcell and for the power and the great stories that you're bringing to us here at Cisco. We truly appreciate it. I hope you have an excellent show, and I'm glad that you came in today.

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**Batur Genç;Turkcell;IP Network Manager**

Thank you. It was a pleasure for me.

**Steve Multer;Chief Storytelling Officer**

Thank you so much, Batur. So glad to have you with us here on the screen, we are going to continue talking 5G as the story continues to build and adapt and as we head toward the new mobile standard. And the more stories that we can hear about this 5G innovation and the process, the better. We're going to share one of those stories with you right now, a great company called [Resumeln]. Enjoy the video. We will see you right back here in the studio, 2 minutes from now.

(presentation)

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**PRESENTATION**

**Steve Multer;Chief Storytelling Officer**

And welcome back. Now we get to talk with one of our favorite partners here at Cisco, Vodafone. I've got Daniel Jiménez, CEO of the Vodafone business here in Spain with me. Hello.

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**Daniel Jiménez;Vodafone Business Spain;CEO**

Hello.

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**QUESTIONS AND ANSWERS**

**Steve Multer;Chief Storytelling Officer**

I'm so glad you're here today. All right. So Daniel, let's get right to it. There are so many promises surrounding 5G. Been a long time coming, what will 5G really mean for businesses?

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**Daniel Jiménez;Vodafone Business Spain;CEO**

In my personal point of view, and probably from the Vodafone point of view, 5G represents a new paradigm for how to do business in B2B or in B4B, business for business. In my view, we have the opportunity to change the ecosystem of developers, the ecosystem of platforms and the ecosystem of telcos. So I think that we have the opportunity to do things that probably 4 years ago, 5 years ago, were unimaginable for companies and both for telcos. So it's a huge opportunity.

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**Steve Multer;Chief Storytelling Officer**

Excellent. How are Vodafone and Cisco partnering to create the 5G for the future?

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**Daniel Jiménez;Vodafone Business Spain;CEO**

I think that we are in the right model, we are cocreating new services because it's impossible to launch in the market one services being alone, it's impossible. So we are working with you, with Cisco, doing things like, for instance, collecting WebEx with 5G, trying to do -- how to explore in the case of the -- in the North of the Spain, how to do the crops better. You see in both solutions of [Sourcefire] and our network. And we are combining platforms, that's the idea.



**Steve Multer;Chief Storytelling Officer**

Give us a great use case for Vodafone here at this point in terms of the development opportunities you're creating around 5G.

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**Daniel Jiménez;Vodafone Business Spain;CEO**

For instance, Spain is [actually this] country. More than 80 million of people came to Spain every year to visit us. And we are developing with different measures, with different cities, how to explore augmented reality or virtual reality. To explain better, what Spain has in every city, in every new sense. It's something simple to understand, it's something different from we are doing here. And it's something that every city needs. That's one simple example.

Our experience is, how to improve surgeons? How to improve medicine? Doing things where the latency or the distance, it doesn't matter. Why don't we can use the best surgeon in the world to attend you? Independently, if he's living in Spain or not. So we are working this, the 5G surgeon. It's a project. And many things about this.

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**Steve Multer;Chief Storytelling Officer**

Excellent. People are paying such close attention to what you're doing at Vodafone. We are as well here at Cisco. I wish we had more time to talk to one another. But thank you, again, for the great work that you're doing. Thank you, again, for the great partnership. And we're very excited to see what Vodafone is going to be bringing into the 5G sphere.

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**Daniel Jiménez;Vodafone Business Spain;CEO**

Our pleasure. And we find in Cisco the family we need. Thank you very much.

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**Steve Multer;Chief Storytelling Officer**

Thanks so much, Daniel. We are about 10 seconds out from the next innovation talk. Michael Beesley, our VP and CTO of SP networking. Transforming your IP infrastructure and leading market disruption. Enjoy the innovation talk. We'll see you on the other side.

(Break)

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## PRESENTATION

**Unidentified Company Representative**

Hello, everyone, and welcome to the innovation talk's theater. My name is Toby, and I have the pleasure of being your host today. And it's so good to everyone here at Cisco Live 2020 in Barcelona, and there are so many of us here. Together, we're going to build that bridge to get where you want to go so you can accomplish anything. And here at Cisco Live, you'll learn new things, be inspired, and create a path to endless opportunities. Now we have 14 innovation talks here in this theater this week, where we will share with you our latest solutions, innovations and, of course, best practices.

By 2020, nearly 850 zettabytes of data will be generated by all people, machines and things, up from 220 zettabytes in 2016. This exponential growth is requiring service providers to rethink how they effectively build -- efficiently build, effectively support and cost effectively manage their critical IP networking infrastructure. Cisco is leading disruption in this mass scale networking industry. In today's innovation talk, we will discover how the company is enabling service providers, media and web companies to transform their businesses.

We are fortunate today to hear from Michael Beesley, Cisco's Vice President and CTO of the company's Service Provider business. He leads Technical Direction, Architectural Transition, Solution Architecture and Road Map Planning for Cisco's SP Networking portfolio. Please give me a warm welcome with Michael.

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### **Michael Beesley;CTO, SP Networking**

Good afternoon, and welcome. Thank you for joining me today, as we discuss Cisco's latest innovations in the SP space. By way of introduction, my name is Michael Beesley. I am CTO for the Service Provider business at Cisco. We're the part of the company that are focused on driving the innovations up and down the stack with regard to technologies, solutions and products aimed at service providers, content companies, hyperscalers and others that are building some of the biggest networks in the world in preparation for the Internet of the future.

As we know, the service provider space is an interesting, challenging business with many opportunities in front of it. As far as the Internet's growth is concerned, we're really in the teenage years, if you like, with regard to the Internet. Despite exponential growth over the last 30 years or so, the network and the connectivity continues to grow at record levels. And as we see continued innovation in the access layers, whether that be innovations in DOCSIS for cable, innovations in PON, innovations in Wi-Fi, and of course, innovations in mobility with regard to 5G, we see the ability more and more to bring more bandwidth, more connectivity, more users, more devices onto the network. We -- certainly, over the next few years, we expect the percentage of people actually connected to the Internet to go up to 60%. The average number of devices per user will go up to roughly 3.5 devices per user.

And of course, we will see exponential growth with regard to machine-to-machine connections as the industrial, the fourth industrial revolution continues, and as every device, both in the consumer context as well as the enterprise context becomes smart and connected, driving more connections and driving more bandwidth onto the network, with average broadband speeds getting up to 75 megabits per session by 2022.

As we see this exponential growth in bandwidth and connectivity there remains a set of economic challenges for our service provider partners. They need to deliver this increased bandwidth, this increased connectivity with relatively flat capital budgets. That means that every dollar of CapEx that they invest, that dollar invested in equipment, invested in transport gear, needs to move an order of magnitude more bites across the network than it did just a few years ago.

Today, most service providers have a ratio of 5:1 with regard to operational expense to actual CapEx on kit and transport equipment. This obviously puts a significant burden on the financials of the service provider and on the business model. Driving that number down from 5:1 down to 3:1 or 2:1 is a priority for Cisco as we innovate across the portfolio, and making sure that all aspects of the operational cost come down, both the human operational cost, the automation in the network as well as the actual power budget for the actual -- for the network.

As we look forward, it's imperative that we address both the CapEx and the OpEx challenges, and we create new revenue opportunities and new business opportunities, such that service providers can produce new revenue streams and new profit pools off of the significant investments that they make in their networking infrastructure. Recently, we launched a set of innovations up and down the stack that are really aimed at changing the economics of these networks, of these mass-scale LAN networks that are the foundation of the Internet, and will be the foundation of the Internet of the future. These innovations span the silicon domain, where we have announced a set of silicon technologies that have been many years in the making to really revolutionize the economics and the bandwidth that we can deliver.

A set of routers, a set of infrastructure that uses that silicon to deliver best-of-breed bandwidth and connectivity at industry-leading power consumption levels, along with the next generation of our embedded operating system, XR-7, streamlining and simplifying that OS, making it easier to use, making it smaller, faster to deploy, more reliable. Along with a set of optic modules and new business models around optics to be able to drive connectivity and cost-effective connectivity to the routers at 400 gig and beyond, as well as continued evolution of our subscriber management stack. All wrapped in the industry's most comprehensive automation portfolio to ensure intent-based, seamless, cost-effective and reliable operations of the infrastructure.

With Silicon One, we're very proud of what we've achieved with regard to this silicon. It is industry leading, both in terms of bandwidth, being twice as capable as the next silicon in the industry as well as being able to process packets at an elevated level, 3x faster than the next competitor in the

industry. The silicon is also unique in the ability to be able to operate in different modes, depending on how it is used. It can operate as a standalone network processor in a small pizza box router. It can operate, obviously, in line card mode, where half of the silicon is dedicated to running the front port Ethernet interfaces. And the other half of the chip is running the fabric interface from the line card to the fabric element. And it's also able to run as a standalone fabric element being the fastest fabric element in the industry today with -- used within a modular chassis.

The Silicon One family comes with a unified SDK along with an IP forwarding interface that allows customization and easy programming of the actual device. Along with the innovation in the silicon itself, we also have innovated with regard to our business models. And we're happy to announce that we are now willing and capable of providing the Silicon One family as a merchant chip to partners, to vendors, to large customers that want to build systems themselves around this silicon. Obviously, we use it internally as well for our own products, but we are also announcing the ability to provide it as a merchant chip, along with the software SDK to allow others to build systems and to build solutions around that actual silicon engine.

We also, last month, announced the 8000 series of routers that are built with the Silicon One engine at the heart of these systems. It's a full portfolio of routers, spanning 1-RU integrated systems all the way up to modular chassis that are both 8, 12 and 18 slots. These systems are high-performance, optimized for 400 gigabit and beyond connectivity. With the 1-RU system, being able to deliver 10.8 terabits of bandwidth in a 1-RU system at 500 watts, which is significantly industry-leading.

The system has been designed to be operationally efficient, in particular, very power efficient. It has industry-leading power consumption per gigabit transmitted, allowing for greatly reduced operational costs.

The other aspect that was a priority for us as we were designing and developing the 8000 series was to ensure that it is the most trustworthy and secure family of infrastructure products in the market. All of these products have a hardware root of trust embedded within the actual system design that can be used to verify the authenticity of the hardware, ensure that all modules inside of the system were manufactured by Cisco, were authentic and were correctly supplied by Cisco, as well as being able to use that hardware anchor to do full measurement and full attestation of all software that is loaded onto the system. These measurements and this attestation can be used to send the telemetry northbound to a cloud service that we use to verify and to attest to the integrity of the system and to ensure that all software running on the embedded systems is authentic, is malware free, was properly published, assigned and released by Cisco, making the 8000 series the most trustworthy, the most secure routers in the industry.

Along with the silicon and the 8000 series, we recently released the next version of our embedded OS, XR7. We've worked to make this a simpler, more optimized, more reliable, embedded software. It takes a -- from a memory footprint point of view, it is 50% less than previous versions of the software that results in boot times that are 50% faster. The image sizes themselves have greatly been -- have been reduced greatly with a reduction of 40%. And that results in increased efficiency and faster load times. XR7 is a modern network OS with several layers of APIs, allowing easy configuration, easy management and easy customization of the actual software. It also supports the ability to have -- the customer can customize images, selecting the subsystems and the modules that they need and that they want inside of their routers, depending on the feature set and the services that are being offered off of that network and off of those routers.

As I previously noted, the 8000 series comes with a hardware root of trust, the XR7 software takes advantage of that route of trust to be able to verify the signatures of all of the software being loaded onto the device, ensuring that, that software was correctly published and correctly signed by Cisco. It also offers the option for customers to self-sign in addition to the Cisco signatures to be able to self-sign their images such that we can do a double verification of the signing of the software, verifying the Cisco signature as well as the actual customer's signature.

As XR7 runs, it continues to take measurements, it continues to verify the integrity of the software down at the process level and sends those measurements, sends those attestation records northbound to a cloud service that is used to visualize and to verify those signatures to ensure that the software is as it was intended to be on the actual devices, that it remains malware free and is exactly as the customer configured.

With regard to optics, we continue to make significant investments in optical modules. It's interesting, as each generation of technology has come and as we've stepped up in speed, we've seen a significant shift of total BOM costs with regard to the solution towards the optical modules. In previous generations, the router itself was actually the majority of the cost, with the optical modules maybe contributing 10% or 20% of the cost.



As we look forward to the 400-gig era, that equation has flipped significantly to the point that the actual cost of the router is a minority of the total BOM cost with the optical modules representing a significant portion of the actual total BOM cost. As such, driving innovation, driving cost reduction, driving integration around the optical modules is a significant priority for us.

We continue to make significant organic R&D investments, as well as you can see on the slide, significant inorganic investments with regard to mergers and acquisitions to make sure that we've got the most compelling and the most industry-leading solutions around optical modules. We also are expanding our business model in this regard as well. Obviously, Cisco-sourced optical modules are certified and verified for use on Cisco hosts. We have expanded that to the point that we now are able -- willing and able to certify Cisco optical modules, not only on Cisco hosts, but also on third-party and sometimes competitive equipment such that if a customer so desires, they can use Cisco optical modules on third-party platforms that are not from Cisco. That really helps to drive the reliability, the levels of integration and the total cost effectiveness of the solution for the customer.

As we go forward, we've got a significant focus on being able to provide wafer scale integration of the optical technology and the silicon technology that is used for network processors, as well as driving towards a highly automated manufacturing process to the point that we can take significant cost out of the process of assembling and testing optical modules resulting in a more cost-effective solution for our end customers.

Along with those innovations in silicon, systems, embedded software and optics, we continue to drive the industry's most complete automation portfolio, such that our customers have all the tools they need for day minus 1 operations with regard to architecting, designing and planning the network; day 0 operations with regard to driving intent-based configuration into the network, with regard to the services that the customers are offering off of that network; and then the day 1 tools to facilitate, correct and cost-effective operations of that network, taking the analytics off of the network to allow rapid fault detection, rapid understanding of the underlying root causes and then the rapid remediation of problems in the network.

As part of the XR7 launch, we also are bringing to market 2 new cloud services to augment and to facilitate the operations of these networks. The first is the integration qualification environment, which is a cloud-based SaaS service that allows our customers to upload their network topology, their equipment choices, their services, their features and their configuration into a cloud service along with a set of identified test suites that we will then run on their behalf in the back end of that cloud service either in a fully virtualized manner or using physical testbeds that we have in our test labs that allow our customers to rapidly verify new hardware, new configuration, new embedded software, that they are then going to use in their network. This greatly reduces the time to qualify the time to test both new hardware and new software in the actual network, allowing our customers to deploy more rapidly the new technologies that we are delivering to the market.

The second cloud service that we recently announced is a service called Trust Insights. It is the [fast] service that takes all of the telemetry, all of the attestation measurements off of the XR7 equipment that is using the hardware root of trust, to take all the signatures of all the packages and all the processes and all the software that is running across the full fleet of routers that make up the network such that those attestation records can be visualized. You can run analytics on those records, and you can do alarming and alerting on any software processes or any software packages that are actually inside your infrastructure that have unknown hashes or incorrect hashes, such that they can be verified, they can remediate it -- be remediated, ensuring that the network runs malware free, remains as trusted and as secure as possible.

As we drive all this innovation with regard to the fundamental transport, being able to produce a very high bandwidth, very cost-effective transport fabric, we continue to drive innovations with regard to the subscriber management stacks across cable, wireline and mobility. Our customers have asked for significant simplification and significant unification of, in particular, the control planes for these subscriber services. And we continue to evolve all 3 of our offerings to a consistent design pattern where we offer the control plane as a fully cloud-native, cloud-resident control plane, that is built with containers with a micro services design, allowing ease of deployment and very cost-effective deployment onto commodity x86 hardware.

Along with that, we continue to evolve the user plane functions of all 3 of these stacks, allowing that user plane to be deployed on to remote compute and/or into network elements themselves to actually augment the processing and to be able to facilitate the high bandwidth and low latency requirements of the user plane function, allowing that function to get distributed into the metro and the aggregation parts of the network much, much closer to the consumers, much, much closer to the eyeballs and to the users of the actual network. And this is very significant, given



the trends that we see with regard to traffic patterns. In particular, the continued rise of consumer video being the dominant traffic pattern on these networks with some analysts saying that by 2022, up to 80% of all traffic on the network will actually be consumer video. So being able to do that termination and having that user plane function much, much further out in the network along with CDN services and other caching services allows that traffic to be dealt with in the most cost-effective manner. Also with the highest levels of customer satisfaction and quality of experience for the actual end user.

As we drive towards cloud-native subscriber management on top of a next-generation silicon-driven software-defined transport network, we're also driving the distribution of compute and storage throughout the network. We see several usages for this compute and storage. The first is infrastructural components of the network, whether it be the user plane function, caching and CDN services, subscriber management facts, and so forth. The second usage that we see for the compute and storage is actually the emerging space of third-party applications that can take advantage of this edge cloud as it develops. The applications that facilitate autonomous cars and autonomous transportation, AR, VR, higher levels of quality and fidelity and resolution with regard to the consumer video and so forth.

All of these innovations combine to form a solution that has powerful economic advantages to our service provider customers. We see an up to 39% improvement of OpEx with regard to the full automation and the significant power reductions in the network that technology such as Silicon One and the Cisco 8000 deliver. With the automation portfolio along with our software-defined transport, we see up to a 60% improvement of total cost of ownership with regard to our network and the operational costs that our customers bear with regard to deploying and operating these networks. With regard to be able to pre verify and run automated test suites in a cloud-delivered manner, we see the ability to deliver services much, much faster, with up to an 81% improvement in time to service.

With that, I'd like to run a short video that demonstrates the power of all these innovations, combined with our customer success portfolio that allows us to partner with our customers to drive innovation and technology and to be able to produce next-generation networks that they themselves will become part of the Internet for the future. With that, could we run the video, please?

(presentation)

Indeed, Cisco, and all of you, you make it possible. With that, thank you very much, indeed.

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**Todd Nightingale** - Cisco Systems, Inc. - Senior VP & GM of Cisco Meraki

Thanks, Matt. Thanks so much, and thank you so much for attending Cisco live. I have to tell you, I think this is my seventh Cisco Live Europe and they've been in all sorts of interesting places. But for the last 3 years, we've had Cisco Live Europe here in Barcelona, and I love Barcelona. And I feel like I've gotten to know the city. Last night, I went to a restaurant, I had been to before, it's like I'm a local. And every year, I get to take a little bit of a look at the city and just about every year, I make it to la Sagrada Família, which I think is the most famous landmark in Barcelona, but I don't really know that much about the city. So maybe that's not true, but it's my most famous landmark. And I think anyone who's an engineer, anyone who comes from an engineering background, has to have some reverence for this thing. People have been paying money to come and look at an unfinished church for the better part of 100 years. That is amazing product marketing, like that is phenomenal. And there's something brilliant about the fact that the most famous thing about this church, about the most famous landmark in Barcelona, it's most well-known attribute is that it is yet unfinished.

And that's always been intriguing to me to get a glimpse of what the work is that they're doing now? How it is being improved every day? And to be honest, maybe I'm a little bit disappointed when they told me that they're about to be finished. In 6 years, they plan on finishing this thing. There was something special about it being unfinished. And I think in a lot of ways, it talks to the work that we do. I don't think anyone here, building the technology and the infrastructure for schools and businesses and governments around Europe. I don't think any of you imagine that one day you will be finished, you will have deployed all of the technology and no work will be left to do. And that's exactly how we feel about Meraki at Cisco. Meraki is yet unfinished, and it is not meant to be finished. Gaudi, spent -- worked till the day he died, I guess, he got hit by a bus, which is unfortunate.



He worked till the day he died on a project, he knew he would not see completed in his lifetime. I hope I'm working on that same project. I hope there's no way that the work that we do in all of your organizations, the work we do at Meraki, that will ever reach completion. It's designed to be incomplete. It's why we focus so much on our mission because the Meraki product is not about reaching a destination. It's about staying on track, on ensuring that we are always progressing in the right direction, and we are always making our products more valuable to your teams. And I believe the #1 thing that Meraki can bring to this industry, to networking and IT infrastructure, it is to bring the value proposition of simplicity to an industry that has been obsessed with power for too long.

If we can simplify powerful technology, then we can free passionate people, we can free your teams to work on the things that matter most, to focus on your mission and your passion to contribute to your organizations in the most powerful way. If we can simplify powerful technologies, we can free you to work on the missions you are really there to drive. And maybe more importantly, with the innovation of technology and how far we come, not just free you to work on that, but help you drive those missions directly.

At Meraki for years now, we have been focused on this idea of simplicity. But we always knew this was not the last thing we would ever work on. It was supposed to be the direction we were going. And so it has evolved over time. Now we think about adding value propositions of security and intelligence to our platform to build the simplest, secure, most intelligent platform for the digital workplace. And our focus is still simplicity, but we know by making this platform secure, we can make it simpler by making it more intelligent. We can drive AI and machine-learning algorithms in order to make that platform simpler. We can simplify your operations, build you more reliable, secure and intelligent systems, and it is still a journey.

What will the next large value proposition we take at Meraki be? I don't know. I don't know because this idea is still unfinished and it is meant to be.

Meraki started out shipping wireless equipment. And over the years, after Wi-Fi we expanded the portfolio to include campus switching, UTM security and SD-WAN. We've expanded into mobile device management, AI-based insight and assurance technology and finally, the Meraki MV, the Meraki camera portfolio, our first IoT product.

And I assure you there is real simplicity in managing all of this equipment from a single dashboard but at the same time, this list is yet incomplete. There is more infrastructure that we can simplify with the Meraki Dashboard that we can add to this platform.

We're going to need a new graphic because we're out of space on the slide, but this list has to be unfinished. And we have to continue to expand. Meraki has always been cloud managed, 100% cloud managed. And I do get questions about if Meraki will consider an on-premise solution. And I usually say, no. But I'm trying to remind myself that Meraki is unfinished. Maybe one day, we will learn that the best way to simplify technology for your teams is to provide something like that. But I have to tell you we're not doing that. So it's not in the cards right now. But every decision has to be questioned over time. We have Meraki Cloud, a best-in-class enterprise cloud, delivering 4 -- a [99.99%] SLA, best-in-class GDPR-based security and privacy controls for Europe as well as a global cloud and a China cloud for multinational corporations.

And of course, Meraki Dashboard. And we've always had Meraki Dashboard. All Meraki products are managed from the web. We're going to take a look at it in a minute, using the most intuitive interface possible. But just a few years ago, we realized we had to continue to evolve that. We had to expand the way we interact with the Meraki products. And that's why we partnered with DevNet to launch an entire suite of Meraki APIs to allow for automation and technology partnership to open up our platforms to build into the digitization systems that you are all building and evolving for your organizations and to partner with software groups, building applications on top of this platform. And it was a tough decision because we had been focusing for so many years on the Meraki Dashboard, but we had to understand that this concept is unfinished. We have to be willing to take the next step to move forward in order to serve our customers better.

And I think a lot about this idea that our true north is this simplicity mission, simplifying powerful technology. But I think anyone who's in business and understands that it's not a destination, it's a direction. You have to also consider the fact that our users and our customers, that has to be the tiller. That has to keep us on track. It has to make sure that what we are building doesn't just serve our mission, but it helps you serve yours. And that's why I think customer examples are the lessons that our engineering teams learn, that our product teams learn. We've had a lot of really



interesting deployments with Van Oord. They are a marine technology, marine ingenuity, they call themselves, organization. And some of the most amazing engineering work I've ever seen. You can see there's an engineering theme here.

I think they're most known for large-scale dredging operations. They actually dig up the bottom of harbors and move millions and millions of kilos of silt and dirt to make sure harbors will run. It's an amazingly sophisticated organization, and they have construction sites, and many, many, as you can see, vehicles, ships that are part of their operation. And now they use Meraki across their franchise. I think what's really amazing is that they were able to drive down how much time was spent setting up these networks because their construction sites are very fluid, they have to be set up and torn down. They're able to deploy this stuff very, very simply despite very, very sophisticated locations like on a high-performance engineering ship like this. But I think what was the most unexpected result wasn't how quickly it rolled out and how easily they move the sites.

It was how it changed the conversation between the users and the technology groups at Van Oord. Specifically, dozens and dozens of calls every week that came in because a site network was too slow, because the network wasn't performing, because the engineers weren't getting the performance and the latency that they needed. Those conversations transformed into a conversation about how much social media and streaming video was being used on these ships and using all of the bandwidth and preventing the actual work from being done, discussions that started with the network isn't performing, transitioned to this idea of how -- of the IT group already knowing how the network was being used.

And in some ways, wasted, although social media is not a waste. So maybe it was being used wisely there. But finding ways to control that with this new information, driving new types of bandwidth shaping policies and bandwidth control, so that mission-critical business could always be done and those calls could finally be a thing of the past.

We work very closely with McLaren, and I'm very proud of this partnership. McLaren's mission is very clear, To Win. This is a company that's designed to win. I want to -- I want Meraki to be a company whose mission is to win. That's -- anyway that's pretty interesting. But it's actually more than an F1 racing group, although they're best known for that. They won their first major race back in the '60s and ever since then, have been really dominating in a lot of ways, this motorsport. But they're also an engineering firm. They do -- outsourced engineering for a very complicated ultra-high-performing engineering problems. And of course, now they also have a business selling ultra-high end cars, which look more like spaceships practically. But this is a group that is maniacally focused on performance, on power. And to be honest, when we first started talking to McLaren, I was surprised to be in those conversations because I know that they are about the highest performing technology in the world. And while Meraki's technology is highest performing in a lot of ways, it's not what we're known for.

I know that Meraki's known for the simplest technology possible. But it opened my eyes to hear how they talked about the technology. It has to be high-performing ultra-high bandwidth, a race car coming off the track in 1 weekend, generates 1.5 terabytes of data. They have to pull that off the car and transmit it back to headquarters for analysis every single week. It has to be high performing. And it is. But the reason they found that Meraki was the best solution for them was because every week, they have to bring up an entire office at a new race site, and they have to run operations for that week for the race at the end of the weekend. And to be pulling up the network and tearing it down, they needed this combination of real power and real simplicity and without simplicity, the power was useless. They could not leverage the power unless it was simple enough to deliver fresh every single week with very high reliability.

If the McLaren race car doesn't race that week because they couldn't bring the network up, I don't want to be a part of that conversation. So I'm glad I never have been.

And I think that sort of brings me to this idea. The first bit of new technology I wanted to talk about today is probably the best example we've ever had at Meraki of pairing together power and simplicity. And it's called Adaptive Policy. We just launched our newest switch, the most powerful Meraki switch ever, it's called the Meraki 390, MS390. And for the first time ever, we've taken Cisco Silicon and a Cisco hardware platform, and we've taken the power of that and matched it with the Meraki Dashboard, the simplicity of dashboard, and we've really delivered power and simplicity together. The most powerful access switch on the market bar none.

But I think the real value here is in how that power can drive simplicity. And there's a journey that we've all been on, and I'm sure you will all feel the same pain I have.

At the beginning, when I was first designing networks, my first job in networking was in 1999. We seem to build very simple networks. VLANs were obviously an interesting technology, but for the most part, every site had a single segment, and I was able to run my entire network on a single segment with a firewall or probably more likely an MPLS backhaul to the core. And all of the network complexity would be held at the core, but most of my campus and my branch was a flat network.

And then, to be honest, my security team arrived and told me that different groups in my organization require different security policies. And I didn't realize at the time what a pivotal point in the history of networking that was. Because all -- the only way that I had to deliver a different security policy to different parts of my network, the only way I could do that was to segment my network in IP segment, in VLAN, and then I could configure my firewalls and my security appliances for different policies for VLAN. The day that happened, felt very natural. The security teams built a more sophisticated and more powerful security suite that required different groups to have different policies and the engineering teams, we had a way, the networking teams, we had a way to segment the network and apply different policies. And that was by VLAN segmentation. And so it felt okay. But in fact, that was a real fundamental shift in the way networks were built. And all of a sudden, IP segmentation and VLAN segmentation became dual purpose. You had to organize your VLANs so that IP segments could be routed. And at the same time, you also had to segment your IP segments for security purposes, and this exploded the number of VLANs required in an organization. I wound up with a VLAN for every group at every site, and security rules needed to manage that became NP-complete.

It wasn't until years later that I started to realize how painful this had become, at very large networks we found ourselves in a situation that adding one security group meant adding VLANs in every single site, and in many times, changing the way routing would work for an entire organization. It brought us to a screeching halt. It made our network still powerful and very high performing, but in a lot of ways, brittle. We were afraid to change them. We were even afraid to implement better security policy because it meant massive network change. And that just can't be. We needed a way. We need a way to be able to adapt and evolve our security policies without complicating the network. Better yet, I want to get back to the simple network I had in 1999, without a VLAN segment for every different group of users and devices and log-ins, the world around and that's where Adaptive Policy comes in.

With Adaptive Policy, I can get back to my simple network, designed to be as easily routed as possible. And I can layer on top of that, security groups using Cisco's proprietary security group tagging available only on Cisco switches, and it allows us to do micro segmentation by group to apply different security policies to every group within our sites without complicating the network. We can deliver both power and simplicity. And if you do it in the Meraki way by applying your groups globally, once you set up your different groups and group policy in a single site, you can then roll that out across your organization to tens or hundreds or thousands of sites in just a few clicks.

And SGT, Security Group Tagging isn't brand new. We've been doing this at Cisco as part of Trust Sec for years. But by making this simple, we can drive their dream of not just delivering this technology simply by using Dashboard and making it as easy as possible, but actually simplifying networks back to what they were really designed to be and layer security on top of it. And I really want to take a look at this in a demo. So if we could switch to the demo, and we'll take just a really quick look.

My demo team -- here we go. My demo team has built out this network for us. And he told me, it's supposed to be a chain of burger stores. So that's why it has a burger up there. His last name is also Burger. So I don't think that's the real reason, it has that.

But this is just a simple test network. It has 3 sites, and the first one is designed as a legacy site. So here's store 1 in Denver in the U.S. And if I wanted to set up segmentation here at store 1, I could go into my security appliance and very easily, I could set up the different VLANs required to segment into the different groups. This is the old way.

Here are the different segments, and you're all familiar with this. I've got a segment for IoT and a segment for employees, et cetera. And then on the Meraki Dashboard, it's pretty easy to go into the firewall rules and be able to craft different policies for different group. And here are the different policies. And you can see there's comments, management to terminals is not allowed, terminal's IoT is not allowed, et cetera. And as the sites get bigger, and as the number of groups increase, then this complexity gets harder and harder to manage, and we need more sophisticated rules and automation and the complexity can become crippling. It's why most systems don't print out all the rules in a row. It just looks -- because it just looks crazy, right? But we can do better, and that's what Adaptive Policy is about, and that's why we've shifted the Meraki switching road map to a Cisco Silicon strategy.



Here is what a new and modern site will look like. Store 2, which is in San Francisco. Of course, all the firewall stuff still works, but we don't have to use that anymore. Instead, we can go to our Adaptive Policy screen and you can see Adaptive Policy isn't held in the individual network, but it's held organization wide. So these groups are true across my thousands of sites or in this case, just 3. I have unknown. I'm Meraki internal employee. I'm going to just add a group for IoT devices. I was told this keyboard was crazy. And they're right.

Okay. So here, I've got a new IoT group, and that group now is able to -- did it add? Sorry, I'm going to try again.

I'm going to learn how to use this keyboard. But anyway, I can add a group. I assure you, I could add a group. And if I wanted to, I could go back, Alex Burger's going to add a group. Oh come on man, it wasn't just me. All right. Anyway, don't worry about it.

So I can add groups, I assure you, I could add a group. And then I have to be able to assign that group using authentication, every device has to be assigned a group, just like we would assign a VLAN. Now many of you use ICE to assign policies and VLANs in your infrastructure. Of course, you can do that now. You can assign a group, an SGT group, an Adaptive Policy group using ICE. But if you wanted to, you could also have a VLAN set up for a default Adaptive Policy or a switch port, and it's just the same way you would have done that assignment in the past. In wireless, I can go to access control. And now, in addition to setting a VLAN, I can also set up an Adaptive Policy group, and I can pick from one of my groups. I can do the same thing with a switch port. I can look at every single switch port in this entire site, whether it be 100 or 1,000. I could pick one of these devices like this terminal device. And now I can pick an Adaptive Policy group to assign to that as well as just having the VLAN assigned.

And that gives me real power, real ability to set not just how the packets are routed, but what tag, what security policy will be applied? And this is the most important part. Organization wide, I can go in and set up micro segmentation. So now by switching to my policy page, I can see which groups are allowed to communicate with which other groups, and I can set this globally across my entire organization using Secure Group Tagging and the power of Cisco Silicon. So if all of my terminals -- today, the terminals are only allowed to speak to unknown devices, untagged devices. Everything else is blocked. But if I wanted terminals, for example, to be able to communicate to other terminals or to employees, I could push that change and off to the races I would be. And now terminals can speak to other terminals and other employees. And I can control this all globally, and I can do this using Adaptive Policy, using micro-segmentation at a global scale.

It gives you an incredibly -- incredible amount of power. And we can use this power to simplify our networks and to use fewer features to do more. And I think that's really the dream of Meraki, to simplify powerful technology.

And we can go back to the slides for just a minute.

So the next thing I want to talk about is the Meraki gateway, and there's not too many slides here, so don't worry. This is the new Meraki gateway. And we've just launched this 3 months ago -- 2.5 months ago. And it's a very simple device. It's a square but look how beautiful it is. So simple, it's beautiful. And I am really proud of this product.

And in a lot of ways, it does something that's very simple. It's a cellular gateway. It runs LTE. You can plug it into any router, whether it be an SD-WAN router from Meraki on our MX platform or an ISR or a vEdge appliance from [Zella] or even a competitor's products, which I know none of you would ever use, but you could, you could turn it into a next-gen wireless WAN device using a Meraki gateway, an MG21. It has internal antennas, but there's an external antenna system. It's designed to be the simplest to deploy wireless WAN device in the world. It really is incredibly beautiful. I have it mounted in my house and I love it.

But maybe more than that, it's powered by the Meraki Dashboard. The real power of this thing isn't that it's a great LTE gateway and a NAT device and it is. But the power of it is that it gets -- it inherits 100% functionality from the gateway, from the Dashboard rather. And the Dashboard gives it real visibility, real historical analysis, real understanding of what's really happening on the cellular network for the first time. And we need that. We have to take this thing to the next level. And we have to make cellular gateways, a mission-critical part of how we build WAN networks. Wireless WAN and mobile gateways like this, this is the future of SD-WAN. Every SD-WAN site is going to have a mobile gateway, at least as a backup device, at least as a backup connection, if not for day 0 or primary WAN. And we have to make this mission-critical. We have to automate it and control it using our regular networking expertise. And we could jump over to the demo for just another minute. This is a site in San Francisco that we've been running for a while using the Meraki Gateway.



And you can see there's a ton of devices on it. We like to test every product to Meraki. So we have a wired fiber connection, you should know, Cisco sprung for it and everything. But we've been running this gateway for a while. And if I pull it up, of course, I could set it up, but you'll see in a lot of ways, what we've done is leverage the power of Meraki, it looks just like every other Meraki device. I get this historical connectivity graph. I can see that I might have had an outage in the last day or the last week here. Cellular devices don't identify themselves with MAC addresses on their network. They identify themselves with IMEI identifier. So you can find that here and if you needed to know that in order to order another SIM card or onboarding your service-provider network, it's available on Dashboard.

But maybe more importantly, and this was just added recently, we have full uplink statistics available for this device. You can see the signal strength is not that great on this device today. And I've got poor signal strength, but I could see what's really happening. I can look at live data across the network on my cellular links, and I could see historical data for the last day or week or month, and I can really understand what's been happening with this cellular connection, not just the bandwidth and the jitter, the latency and the loss in the bottom here, but the real RF signal strength on my 4G modem. That's -- RSRP is signal power and signal quality. And I can see single power and single quality over time. I can give real feedback to my service provider, to enterprise service provider who's giving you real SLA over the wireless WAN and should that SLA not be met, you can give them real data and show them why, right?

And we can finally take the power of Meraki and use it to manage wireless WAN to hold our service providers accountable to their SLA and to drive wireless WAN into the mission-critical world, not -- maybe not even just as a backup, but as a primary connection over time. I'm incredibly excited about this because I really believe that this is the future of SD-WAN. SD-WAN is going to have to be wirelessly enabled.

Now obviously, this isn't the last Meraki gateway, mobile gateway, we're going to build. This portfolio is certainly unfinished. There's going to be gigabit LTE and 5G after that, there's more historical analysis. The #1 request we've had on the Meraki gateway portfolio has been about alerts, having live alerts whenever the signal strength or quality drops below a certain threshold, whenever jitter is too high, whenever a backup wireless connection might not meet the SLA, should it be called into service. Our customers are looking for alerts, and we're building that stuff right now.

Of course, this product is unfinished. And that's really the story of all Meraki products. I get a lot of questions about the Meraki portfolio, especially weeks like Cisco Live. Meraki's come so far. Now that the Wi-Fi portfolio at Meraki is so complete and so powerful, do you think you're done, focusing on that, and you're going to be moving into other technologies? Or are you going to start focusing more of your effort in other places? And of course, we do focus in other places, but the wireless portfolio isn't done or complete, our Wi-Fi 6 rollouts are just beginning. The concept of wireless health and the analytics, the machine learning that can be used to drive troubleshooting and understand what's really happening in our networks.

That stuff is just beginning. Our wireless -- can we go back to the demo, one more minute? Our wireless portfolio is far, far from complete. And that's the way it's supposed to be. In fact, the dream of Meraki is that when you buy a Meraki product as powerful and as great as it is today, that is the worst it will ever be. When you buy that product and install it, that is the worst it will ever be because it will always be improving.

We are pushing updates and improvements to this product all the time, and in my last minute, this is the demo I want to show you. This is a very, very long standing customer, and this is one of our official demo networks at Meraki.

And I assure you, this will be the only 802.11n, 3 generations old Wi-Fi demo you get at Cisco Live this year. These are the APs on this network. And the newest of them -- the newest of these access points was deployed in 2011, 9 years ago. The newest of them. I know because they're noted in the notes new deployment, 2011. And this -- these access points have been automatically upgraded every 6 months, every 9 months for the last decade. In fact, our newest and greatest wireless troubleshooting applications run on these access points. I still get historical data and analysis, I get usage statistics, deep packet inspection, showing per application based bandwidth usage and our wireless health product, the absolute highest end AI-based wireless assurance and wireless troubleshooting products in the market.

Wireless health runs on this, the MR12, that's been shipping that we started shipping more than a decade ago. It was up -- this one was upgraded just a few months ago on version 25, the newest and greatest Meraki feature. And this MR12, it is still unfinished. We will continue to improve it and roll it out. It's supposed to be unfinished. The portfolio is always getting better. And I can't wait to see what you'll do with what comes next to the Meraki.



Thank you very much.

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**David dela Cruz;Commercial Account Manager**

Welcome back to the studio at Cisco Live in Barcelona. I am very happy to be hosting the second half of Meraki show today because Meraki is one of the favorite architectures that we have in the Cisco portfolio, my favorite, I mean. A great speech just now from Todd Nightingale. I especially found interesting the mobile gateway that he was talking about very exciting stuff for our customers that have got sites all around the world and need to connect them up via LTE. We're going to dig a little deeper into the Meraki topics. We've managed to snag a great guest for a Q&A in a little bit. But first, we're going to jump into a short video and we'll be right back in the studio soon.

(presentation)

Welcome back. As I said we're continuing with Meraki, the topic of this afternoon. And I'm joined today by Lawrence Huang, VP in Product Management at Cisco Meraki. Thank you so much for being on the show Lawrence.

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**Lawrence Huang;Vice President of Product Management;Cisco Meraki**

Thanks for having me, David.

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**QUESTIONS AND ANSWERS**

**David dela Cruz;Commercial Account Manager**

No problem at all. Now I know Meraki's constantly got new developments. You guys have been very busy over the past year by the looks of it. What else have you introduced since last time we were here at Cisco Live in Barcelona?

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**Lawrence Huang;Vice President of Product Management;Cisco Meraki**

Yes, that's a great question. Clearly, we saw Todd have a lot of cash and the excitement for, of course, the MS390, our highest in access switch. The MG, our newest member of the Meraki product portfolio, but we've really been also focused on a lot of software features really to enhance our simple, secure intelligent platform. You heard on stage from Todd a lot about Adaptive Policy, but we've also been building features like SecureConnect, which I can go into. We've been building the tighter integration between our wireless access points and umbrella. We've been building security certificate-based authentication for customers who want the best secure Wi-Fi without full-blown NVM with trusted access. These are just one of many things that we've been adding in addition to some of this incredible new hardware.

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**David dela Cruz;Commercial Account Manager**

Absolutely. So I'm glad you mentioned the topic security because it's, I think, a hot topic, a hot button topic for many customers around the world. Can you run us through those a little bit, you mentioned a specific one. I'm sorry, I didn't recall it Secure...

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**Lawrence Huang;Vice President of Product Management;Cisco Meraki**

SecureConnect.





**David dela Cruz;Commercial Account Manager**

SecureConnect, perfect. Talk to us more about that.

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**Lawrence Huang;Vice President of Product Management;Cisco Meraki**

SecureConnect is really simplicity at its finest. It is taking this concept of, if you're a customer who has Meraki access points and you want to connect it to a Meraki switch in the most secure manner possible, we do it automatically for you. You plug in your Meraki access point to your Meraki switch. The access point will authenticate against a security-based certificate that we manage on behalf of the customer, and then the profile in the port will automatically be configured for that access point. And this is done automatically without the customer having to do more.

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**David dela Cruz;Commercial Account Manager**

Wow, that sounds fantastic. I know a lot of my customers complain about certificate management and trying to get those all lined up. So that sounds like an amazing feature to add to it. Now you mentioned, I think earlier, was a switch -- sorry, a new Meraki Switch that's based on Cisco Silicon.

We've heard a lot about that. I know there's a lot of excitement internally at Cisco about it, what is that -- how does that sort of change the game for Meraki customers and partners?

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**Lawrence Huang;Vice President of Product Management;Cisco Meraki**

Yes. I mean, it's a little cliché to say it is a game changer, but we absolutely believe that's the case. But in many ways, it is a natural evolution of the journey we've been on. As Todd said, it is taking some of the best-in-class Cisco technology, Cisco switching technology and pairing it with the simplicity of Meraki. And so what that means for our customers is for some of that special Cisco-only capabilities, whether it's stack power, incredible stacking bandwidth and resiliency, yes, you get this in a Meraki switch. But with features like Adaptive Policy based on Security Group Tags, we can start creating features that solve complex use cases in the simplest way possible. And this is only the beginning for us in terms of how we can solve these powerful use cases on behalf of our customers in a very Meraki-like fashion.

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**David dela Cruz;Commercial Account Manager**

Amazing. And maybe shifting gears a little bit. Behind us, we've obviously got an enormous DevNet booth. Over the years, we've seen Meraki's presence in the DevNet getting bigger and bigger. Maybe why are you investing in that space? And also, how can people that are new to it, maybe learn more about it?

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**Lawrence Huang;Vice President of Product Management;Cisco Meraki**

Yes, absolutely. This is an area that we are absolutely proud of. We've been working very closely with the DevNet teams, Susie Wee's team. This is like one of our fastest area of growth. We see a large number of our customers starting to develop on the Meraki platform with their APIs. And really, this is the reality for our customers. They're looking at the Meraki platform, and they're trying to build on top of it because they have things that they need to integrate in. Maybe it's a ServiceNow integration that they want that capability, so you can feed trouble tickets directly into a system to dispatch to your IT staff.

And other applications maybe it's around location tracking, maybe it's around customized flash pages, these type of use cases are things our customers want to be able to build on top of the Meraki platform. And this, along with hundreds of others, are use cases our customers can start exploring on [appstopmeraki.io](https://appstopmeraki.io). So if you want to learn more about how to start building, visit that site to get started. You can see all the different partners that we have, the different use cases that are supported, and you can start developing on your own.



**David dela Cruz;Commercial Account Manager**

Amazing. So it sounds like it's all about having an end-to-end automation story, but also unlocking the potential and the value in the Meraki solution that you've got. Maybe for more of a strategic side of things, what do you see as the top priorities for Meraki as we head into 2020?

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**Lawrence Huang;Vice President of Product Management;Cisco Meraki**

Yes, great question. I think that for us, the true north is always the same. We talk about the direction of where we're heading. Simplicity is our true north, but I think a little bit deeper than that. It is about solving real customer problems. We have a fun saying here in Meraki, that it is about solving use cases, not building features, and that is how the product management team thinks about the things that we build and bring out to market. And so for us, going to 2020, as we have the expanded platform at Meraki, as we invest more in APIs, we want to make sure that it is a pleasure to still use Dashboard, it is a pleasure to develop on the Meraki platform. But also when you tie these things together, 1 plus 1 is more than just 2, it's 3, how we can increase and improve security in the most simplest way possible and continuing that journey on behalf of our customers.

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**David dela Cruz;Commercial Account Manager**

Okay. And maybe just a final question. Obviously, we're going out to the folks at home that haven't made it here today. What's your -- the best session, all right, that's already been about Meraki or that's coming this week that they can access online after the show?

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**Lawrence Huang;Vice President of Product Management;Cisco Meraki**

Well, hopefully, you saw Todd's session. But if you haven't had a chance, please stop by, visit the Meraki team at the DevNet booth. It's also a great opportunity to visit the Meraki team at the lounge. You can hear firsthand from our experts to see hands on demos, learn more about all the different solutions that we have in a one-on-one setting.

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**David dela Cruz;Commercial Account Manager**

Perfect. Thank you for that Lawrence. And that's a great keyword right then. Meraki Lounge, because I believe, Zane our co-host is out in the Meraki Lounge. Zane, what can we do down there?

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## PRESENTATION

**Unidentified Company Representative**

Hello, everyone, and welcome to the Innovation Talks theater. My name is Toby, and I have the pleasure of being your host today, and it's great to see everyone here at Cisco Live 2020. There's quite a few of us. But together, we're going to build the bridge to get to where you want to go, so you can make anything possible. Now here at Cisco Live, you're going to be inspired, learn new things and create the path to endless opportunities.

This week, we're hosting 14 innovation talks here in this theater, where we will share with you our latest solutions, innovations and, of course, best practices.

The topic of our next innovation talk is digital transformation, application deployment, infrastructure automation and assurance. And to tell us all about it, it is my great pleasure to welcome to stage Thomas Scheibe.

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**Thomas Scheibe; Vice President, Product Management**

Thank you. Okay. Good afternoon. How are you all, good? It's going to be a fun 30 minutes, let me just say that. And you're going to enjoy it, I'm pretty sure about this. So where do I start? Data center innovation. Really, the way I want to look is really like this gentleman all day long, and I am pretty sure you want to do this.

And so this is more the inspiration where we want to be when we talk about how the network is running. You really want to be in that position and saying, yes, everything is fine.

So a lot of the things you're going to see, what I'm going to talk about today and what I'm going to present and going to hear actually from some of our customers is around how do we get to the state that operating the data center is actually becoming easy and pleasant.

And this is clearly a task that we need to do across what we're doing on the Nexus switching side, on the controller side, what we do with operations tools, what we do around programmability and APIs to get to that state that it becomes seamless and easy to operate.

So with that, come back to innovation. Innovation is kind of a funny word. Everybody loves to talk about it. And it's really not about just, "Oh I have a cool new idea". It's really about that's the innovation help to get you where you need to be to deliver the outcome.

And so that's why what we picked here really is a couple of topics to work through this. But before I dive in, I just want to point back, we have this once a year, there's a lot of things that came out in the last 6 months from Cisco around data center innovation. I just put a couple of on here, whether it's around the ACI extension into Azure, that I don't know whether most of you know, we actually officially announced this in November, and it's available. We did ship our first (inaudible) switches, which is a little teaser, and I will talk more.

And obviously, we do a lot of work on how do we do hybrid cloud? And how do we do operations around this. So lots of innovation happening. Again, all of this was to focus on how to we make it easier to operate cloud infrastructure.

So with that, let me set the scene a little bit, besides it needs to be easier, but there's a second very important piece that needs to come together, which is really the infrastructure automation in itself is important, but it really needs to connect with the application automation in the front end. Because in the end, whatever we're going to deliver as a network service is driven by what they use in the data center, which is the app, needs to get done.

And so what I want to talk about in the next couple of minutes, is really how these things tie together, what we can do around connecting application automation with infrastructure automation. That's my number one. Number two is what we're doing to help you with the infrastructure automation, in particular, day 2 around analytics to make this -- instead of trying to figure out what issue is where to make this much, much easier to deal with.

And then obviously, I'm going to end and talk a little bit about infrastructure in itself to make sure you see where we're going on that end.

With that, let me dive in. How do we link application automation with infrastructure automation? And I picked some tools here, I'm not saying these are the only tools out there, but I picked some tools. And really, the buzzword that everybody talking about is Infrastructure as code. And what I'm going to show is how do we use these tools that application developers typically have, and I'm pretty sure if you asked your application teams, they would say, "Yes, of course, we use terraform, yes, we use Jenkins" and then he says, "Yes, I use ACI." And how do we bring these together? And the idea really behind this infrastructure as code is that you can automate the whole stack from the application deployment to the infrastructure deployment. You can translate all the manual tasks in a piece of software and then execute the software, and you can rely on practices that are very, very well-known for software developers and application developers, how they manage different version of code, how they check in and check out code and actually apply this to how to run the infrastructure.

And you're probably looking at me and saying, wow, does Thomas say that I want you to all learn how to code? The answer is absolutely not. What I want you to work out of after this is to see how simple it actually can be when you use tools, actually when the app team uses the tools that they use today and you actually can plug in with what we have as ACI and seamlessly integrate.

And to show you this, I want to actually invite Lionel up to stage. Please join me Lionel. Lionel is Technical Marketing Engineer. He used to be out of Brussels, but we got lucky we moved him to San Jose, but Lionel's going to work us through a little example of how this will -- whole workflow from the front to the back does actually work.

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**Lionel Hercot; Technical Marketing Engineer; Cisco Systems**

Thank you, Thomas. So first, we have -- as Thomas was saying, we need to have an app. So the first thing we have here is the app we are going to work with. It's a very simple app. It's a client and an application. The client needs to go to the application for the business reasons, and we want to have a 0 trust policy. We want to limit as much as we can and what it can talk to.

So we are only allowing them to communicate with each other and to communicate with other application automation platforms because we need to be able to manage it over time.

The things -- to be able to do that, we are going to need a few tools. The tools that Thomas showed us. We are going to put them inside a workflow. We are going to build a whole pipeline. You will hear that word a lot in the CICD world. We're going to build a pipeline of tools that are ingesting each other.

We have here Terraform, GitLab, Jenkins, WebEx team, and then we have the infrastructure piece. We have the VMware, the ACI Multi-Site Orchestrator or ACI Fabric and your app.

So let's start with the #1, the Terraform. So in infrastructure of code, I had to show you code, right? So here, we have the HCL language, the HashiCorp configuration language, which allow you to define infrastructure as code for a whole bunch of elements.

ACI is one of them. So in ACI, you can develop your EPGs, your whole configuration using that language. When you have written your language, you have to [tick] version of them to be able to roll back and go forward.

So that's where we go around GitLab and get repositories where we will commit our change locally and then push them to the central repository. That gives us one auditing, one element to manage. A good feature around GitLab or Git repository is, is that every time somebody push code, it can trigger a workflow. And in this case, it can trigger a next step, which is Jenkins, our pipeline manager. Talking about Jenkins, Jenkins is also some code. So you can write your pipeline in JSON, which is itself not really code, but text files, and you can pull that in the same repository because Jenkins can pull that file out of a repository and just use it.

So you have one place of all your configurations for the pipeline, for the application, for everything is that one repository.

Every time you make a change, it triggers the whole pipeline. But the pipeline looks more like this when it's configured. It's a series of steps that Jenkins can measure every steps, how long it took? Did it go well? Did it go wrong? And what happened? So for every one of those steps, you are going to get feedback from it.

And feedback is quite important. That's why we have added into the system a continuous feedback loop. We are using WebEx Teams to be able to do something that we call chat ups. We are using WebEx Teams as a feedback loop to users to see how the pipeline went. And if there is an issue, you are -- you'll receive a notification from WebEx Team, and then you can go see your Jenkins. That's really part of it.

Now the last part is the application itself, right? I have pushed the code, I have [purified] my infrastructure, and now I deploy my application. And my application itself is also very dynamic, its own code.



**Thomas Scheibe;Vice President, Product Management**

On that note, right? So we just walked through, I have this application defined. And we know these app developers, they want to change something. What happened?

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**Lionel Hercot;Technical Marketing Engineer;Cisco Systems**

So if you want to change something, it's all code. So you just modify the code, push it back and restart the whole pipeline. Everything is the same process, which makes it very easy to just reiterate, reiterate, reiterate.

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**Thomas Scheibe;Vice President, Product Management**

Very cool, very cool. So how does it actually look? I think everybody in the room and how ACI works, I hope at least. So how does that actually look?

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**Lionel Hercot;Technical Marketing Engineer;Cisco Systems**

Yes. So the important piece for ACI in this is that 0 trust policy, right? So we want to isolate the different elements, so that they can only talk to what on the post they need. In ACI, we have that whitelist policy model, so we create groups, EPGs, which contain each of the elements. And then we define the only element they can talk to each other. So here, you can see the 3 EPGs we are using in this element, the admin in the 2 Web and Client. And then we are using contracts to say what they can talk to each other. Each of those elements contain the endpoints that we have defined. And you can see each of the endpoints, and they can be container, (inaudible) or any different system. So it's really the system -- the complete application and 0 trust because it's only supporting those ports that we have defined.

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**Thomas Scheibe;Vice President, Product Management**

But when you say 0 trust, you really mean -- what I say most people think is like there's a whole segmentation done. Is that really what this is?

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**Lionel Hercot;Technical Marketing Engineer;Cisco Systems**

Yes, so they can -- they are segmented in their own little [role], and they can only trust the other ones on what you have defined that they can talk to.

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**Thomas Scheibe;Vice President, Product Management**

That is very amazing. Thank you. Thanks. That's a cool example. I really appreciate you walking us through. And yes, thank you, Lionel. I hope you took out of this, if you look at this, I really kind of take the tooling in the front and that your app developing team has, describe what you want to do and then just roll it in and deploy the infrastructure, the configuration that you need for the app automatically. And you literally can, as I said, as a code, and you saw Lionel showing us you can roll and roll an update.

The other good piece about it is, and we didn't show this here, the same will work whether the application sits in your own data center, on an ACI fabric, or where the extent is where they say anywhere into Azure and AWS. It's the same thing. There's no difference. So that's the link between automation that your application team wants to do and the automation that you probably want to do on the infrastructure.

So now let me come to the second piece, let's assume we get this all done. You're happy that you automated the first part of your day. Now comes the second part and the next day and the next day. How do I make sure that I actually have a good step on -- that my infrastructure is running -- is running how it should be. And so here's a set of tools that actually we had for a while was Assurance, and we're adding something called the

network insight suite our network insights capability to make it so much easier to really move from a more reactive to a proactive approach in monitoring the service of the infrastructure.

And so what I want to do here is really give you a little glimpse, I don't expect you to actually see all the details, but this is like a GUI front end at a software extension that is built in to existing ACI APIC controller and as well the DCNM for Nexus Fabrics. It's the first time you're going to see from us a set of tools, that's the same. It works across both Nexus and ACI, and that's where we're going to go. It makes your life really, really because it can run as either for one or the other, or both. It's the same look and feel.

One piece I do want to point out, has a little bit of a pride. Everybody talks about telemetry. Everybody talks about analytics. What is special here, what we can do as you see this, like you have a good view with Stellant [we needed] a standard variety, garden-variety one. What you really want is what I call better or advanced telemetry. You really actually see what you want to see, which is the ability to correlate flow information that goes through the switch with the status of the switch. That is something where you need a sensor in the hardware. And then if you have a Nexus 9000, you have this for the last 3 years. You now can actually turn it on and actually put the amplifier there, and you're going to see it.

So with that, I do actually want to introduce a good customer of ours, which is Bosch and the reason why I want to introduce them is because they're a user of Assurance. Bosch, as you might know, German company, no coincidence. I'm German. No? Leading global supplier of technology, 400,000 people worldwide, has different division: mobility, industrial technology, consumer goods, energy and building technology. Bosch was looking for a data center solution that really helps them scale out and map better what they want to do from a business strategy with what they needed to do -- and what they need to do on the business strategy to map this to what they need to do on the technology side.

And so with that, I do want to invite Jan Holzmann up on stage. Jan was with Bosch for 14 years. He is now responsible for designing, building, running, the network, the central network on the global course. So thanks for joining me here, Jan. And let's talk a little bit about -- yes, we can actually just stand here. Just talk a little bit about why did you pick -- or why did Bosch actually with you at that point, why did you pick the Cisco Assurance product, what was the motivation?

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#### **Jan Holzmann;Bosch;Senior Manager for Central Network Services**

First of all, Thomas, thanks a lot for inviting me here on stage with you. So great question, why did we pick it? This was for multiple reasons, to be honest. But the major important reason there is really for day 2 operations, we want to increase our efficiency in that area. But let me elaborate a bit more on that one, what I really mean about it. We are now with ACI since around about 3 years in a productive state. And we have been very successfully with that one. And the key for it was automation. Immediately from day 1, we invested in our automation tool suite. And the first part was really having Zero Touch Deployment scripts available, so that we can spin-off new ACI fabrics once rack and stack from (inaudible) was completed. On the second side, we also invested in a kind of framework with the front end -- to the self-service front end, which we handed over to our customers, to the server teams to the storage teams, and with that self-service framework, they leveraged our code to deploy all of those ACI configurations on the interfaces they required for the daily use.

So earlier, they forwarded a ticket to us with a request, please do a configuration on the interface and now they are doing it whenever they require it on their own. So we had really been successful on that topic. And we rolled out a lot of fabrics over the years and did a lot of migrations from brownfields into the ACI, spun up new environments for greenfield topics. But when getting more and more business in the data center, it also means that you need to deal with all the events in the APIC. But on the other hand side, of course, also, we are doing that for business reasons.

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#### **Thomas Scheibe;Vice President, Product Management**

That sounds really interesting. And I think what I really just picked up on this, you did actually -- some of those front-end automation to make it work with the infrastructure automation. So looking back, I think you were here 2 years ago when we actually came up with Assurance. Two years in, I know you have a bunch of fabrics. So what's the experience so far?



**Jan Holzmann;Bosch;Senior Manager for Central Network Services**

Our experience is so far really good. So we have deployed around about 30 multi-port fabrics around the globe, tailing from 20 leaves up to 400 leaves right now. When we started now leveraging network assurance engine for our own purpose since they're at this stage. We wanted to do this also very efficient. So we leveraged the sketch UL, which is integrated the network assurance engine so we could attach multiple ACI fabrics to one single assurance engine. And that's for 2 different reasons, it's in a creative way. First of all, it reduces the amount of (inaudible), the consoles for our operations center. And on the second-hand side, it also reduces the interest structural cost because we only have to deploy it once.

**Thomas Scheibe;Vice President, Product Management**

Oh, that's awesome.

**Jan Holzmann;Bosch;Senior Manager for Central Network Services**

So this is already a great topic on that side. And on the other hand side, we now were able -- we have a central network operations center at Bosch, and these guys are dealing with different types of technologies. They are not only there for the data center purpose. They do campus LAN, Wi-Fi, local [LAN] and stuff like that. So they are now experts of each and every technology. We are now leveraging the ability of network assurance engine that enabled them to take over more and more responsibility within our day 2 operations business, and we already started to handing over the responsibility for day 2 operations and event handling for multiple fabrics to them.

**Thomas Scheibe;Vice President, Product Management**

It sounds like a real win.

**Jan Holzmann;Bosch;Senior Manager for Central Network Services**

Of course, it is.

**Thomas Scheibe;Vice President, Product Management**

That's very interesting. And what I really like, once Germans are moving, they're moving. So since I'm here and you are here, that's a chance. So maybe like one comment, what are you looking for maybe what we could do more? What are some of the additional features?

**Jan Holzmann;Bosch;Senior Manager for Central Network Services**

Okay. Let me start with that one. I've seen the inside [stuffing] and they also watch it a bit on the world of solutions, what it can do basically. It looks really good from this perspective because it really closes the gap of the day 2 operations. So far, you are mainly looking a bit about the configuration compliance or the policy on this side. Now we are getting also tools for the data plane operations. And that's a great opportunity. And I think we'll have there a closer look in. But on the other hand side, one challenge back towards you. It's now really challenging. We have the APIC. We have network assurance engine. We have enhanced endpoint rigor. We are getting maybe insights.

**Thomas Scheibe;Vice President, Product Management**

Yes.



**Jan Holzmann;Bosch;Senior Manager for Central Network Services**

So we have a lot of different consoles, and we have a one operation center. They deal with a huge number of consoles, so my flavor here would really go into the integration way for a single pane of glass or something similar.

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**Thomas Scheibe;Vice President, Product Management**

That's great feedback by the way. I can tell you the work is underway. Maybe we are -- 12 months from here, let's see where we're going to go. You will see some good integration. We start off with network insights and we'll see things coming together. But thanks for the feedback.

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**Jan Holzmann;Bosch;Senior Manager for Central Network Services**

I'm looking forward.

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**Thomas Scheibe;Vice President, Product Management**

So maybe last sentence, if you like, look like 2 or 3 years ahead, where do you think this is going to go? Where should we go together on this?

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**Jan Holzmann;Bosch;Senior Manager for Central Network Services**

No, I have a dream Thomas. Let me tell you the story behind that dream. It's a couple of years back, and I attended an early preview of network assurance engine that was held by [Tom Etzel]. And this was in the really good old times. The tool was still called Candid and we -- all of my team, they still like this old name...

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**Thomas Scheibe;Vice President, Product Management**

Most of you don't know this probably.

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**Jan Holzmann;Bosch;Senior Manager for Central Network Services**

But the great story at this time was he presented the tool, how it is behaving. So having the policy on the one hand side of the configuration, they intend having the fabric state, bringing them together and it immediately was clear basically for me. It can become a game changing technology, if you're going in a direction of auto remediation. You can detect the fault, you could solve it automatically, and then that would be the dream, basically because we were -- look to a self-healing network and reducing the downtimes where the customer might not even recognize it.

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**Thomas Scheibe;Vice President, Product Management**

Okay. That sounds like we are moving in the right direction.

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**Jan Holzmann;Bosch;Senior Manager for Central Network Services**

It's a challenge, I know.

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**Thomas Scheibe;Vice President, Product Management**

I really appreciate it. Thanks for sharing, Jan. I look forward to work closely going forward with Bosch, and it's a beautiful partnership. Thank you. Thanks for sharing.

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**Jan Holzmann;Bosch;Senior Manager for Central Network Services**

Thanks.

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**Thomas Scheibe;Vice President, Product Management**

So with that, automation of the application, infrastructure automation, data analytics. Now you probably won't know. This is all good, but is Cisco keeping up with the infrastructure under the hood and modernized? The answer is, of course. And I do not think that everybody of you needs 400 Gig today, but for the 50 people I can count that need it, we have it. That was a job.

My last section. So we do invest in 400 Gig. You actually see the pictures here. You actually can touch these boxes if you go down to the data center corner. Again, I don't expect everybody to use 400 Gig. What I do see is the need for building out an infrastructure that, over time, can get there. And as you might imagine, every 400 Gig port can use 400 Gig. So if you know that during the next 1 or 2 years or 3 years need to move there, and you don't want to replace, you can actually build it with confidence at this point. These are standard Nexus 9,000 switches. We have Nexus 3,000 switches. You can extend the infrastructure you have today with the same capabilities you have today, everything you just heard about how we do automation, will work here the same way.

But anyway, I don't want to go really into the switches itself. What I really want to do is actually bring one more customer on stage which is OVHcloud. So Alain, join me here. Alain is the -- and I'm really bad as a German pronouncing French. But Alain Fiocco is the Executive Vice President of Product and CTO of OVHcloud. The quick thing I probably should do, OVHcloud, French company, very, very impressive company, the third largest cloud hosting provider. You have like around 400,000 service, which is a large number. And what is really interesting as well is a lot of your customers are startups, and you take them when they're young when they need agility and then they're growing.

But maybe we're going to talk a little bit about what is OVH focusing on? I know it's the customer experience, and you're really not just looking at the data center, but the edge to the data center. Maybe you can explain a little bit why that is? And what are some of the considerations you have there?

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**Alain Fiocco;OVHcloud;CTO, Executive Vice President of Product**

Sure. So thanks for inviting me first. So yes, indeed, at OVHcloud, what we do is, we provide hosting services for VMS, bare metals, websites, what the traditional cloud provider would do. But the thing that we are doing perhaps slightly differently from anybody else, is we believe that the network is actually a complete integral part of the service. So first, we're not charging for traffic, neither ingress nor egress. So if you bring your workflow into OVHcloud, you get access to the full capacity of your flow without having any surprises when it comes to paying the bill basically. But in order to do that, something that is very important is that we have deployed a massive backbone. And this backbone is actually connected to peering points with no congestion point at any point in the network, which means that we have 20 terabits of capacity in the backbone, which equate exactly 20 terabits of peering points capacity, no congestion whatsoever all the way of the orders. And so you have access to the full capacity.

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**Thomas Scheibe;Vice President, Product Management**

That's a very impressive approach. And I know it's -- part of you is you want to -- you don't want to have spikes and then don't know what happens. You don't want to have DDoS attacks, which I know are very common in the [outside] world.

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**Alain Fiocco;OVHcloud;CTO, Executive Vice President of Product**

Yes.

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**Thomas Scheibe;Vice President, Product Management**

Great. So that's your concept from the edge of the data center. But then what do you actually see happening in the data center. What is around bandwidth. I know when it first time came out, it was like one gig. And now I know we're more like, "where are we going?"

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**Alain Fiocco;OVHcloud;CTO, Executive Vice President of Product**

Well, we -- so 400,000 servers as you can imagine, not every one of them will be connected at super high speed. There are still a lot of them that will be connected at relatively slow speed. However, at the top end of the line, our biggest servers are actually going to be connected 4x 25-gig, 2x for public network, 2x for private network, so that the customers can basically decide where he wants to manage that. That goes into a non-blocking multiple lanes of 100 Gig fabric, which is going to evolve over time to 400 Gig, once we have the need for that. The next phase is going, in particular, for storage. We're going to bring 50 Gig -- multiple time 50 Gig to the servers and then 100 Gig. The places where we're going to deploy 400 Gig is primarily in the backbone. We have multiple data centers on the U.S. East Coast that we need to connect with much higher capacity than we do today. We have so many 100 Gig Lambdas that we need to groom that into 14

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**Thomas Scheibe;Vice President, Product Management**

Then you get the big pipe.

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**Alain Fiocco;OVHcloud;CTO, Executive Vice President of Product**

Exactly, step after that is we have campuses where we have multiple data centers. So the entire connect will be 400 based and then we'll move into the fabric, so on and so forth.

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**Thomas Scheibe;Vice President, Product Management**

Right. And so this is the interesting piece about it is because Alain has the Nexus 3,400 in, which like 400 Gig cable was like [12.8T]. But as I mentioned earlier, not anybody jumps to 400 Gig, so really, the idea was can I get large-scale 100 Gig and have the option to go to 400.

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**Alain Fiocco;OVHcloud;CTO, Executive Vice President of Product**

Yes. So we tested those works with 400 Gig, obviously, but the first deployment is actually happening right now, and we're deploying 128 -- 100 Gig [network] phases on the fabric, right? So that's the current deployment.

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**Thomas Scheibe;Vice President, Product Management**

That's very impressive. That's very impressive. So maybe to close after this, to close on this. So this is like the bandwidth story. Some other transformative future of data centers. I know you have a lot of ideas there. And it's bandwidth and it's services, right?



**Alain Fiocco;OVHcloud;CTO, Executive Vice President of Product**

So what happened with the -- when you operate an infrastructure like mega-scale provider, the real challenge is not so much bandwidth. Of course, you need to increase bandwidth over time. But it's actually how do you deliver those services at those speeds, right? And continuously having to increase the capacity of delivering complex services, network services at higher and higher and higher speed. Quite frankly, I mean, the cost is getting out of control. If we continue to grow at that kind of speed, it's going to be very, very difficult to cope with those network services. So the future for us is going to be to disaggregate switching capacity with network services.

And in order to do that, it's also going to, for us, is going to simplify dramatically the fabric, the network fabric. And we're going to have network services, proxies or servers, if you wish, that will deliver the services to the customers. So in order to do that, a lot of ideas, but we're looking at having an IPv6 only fabric, which we are deploying today already for certain customers. And using SRv6 to be able to send the traffic that requires additional services onto the servers. And by this way, we can actually have 2 different scales that will grow and progress at their own pace.

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**Thomas Scheibe;Vice President, Product Management**

Interest, very interesting concept. I think the reason -- I'm so intrigued besides obviously, it's a successful growing company, which is awesome. It's a lot of interesting thinking through how to architect correctly and you're absolutely right. I mean, we see this with a lot of other customers as well, how do I balance the need for bandwidth and where the services need to be and how to avert -- actually be really cost effective, which kind of comes back to in the end, how quick can I get the service up and running and be profitable. So that, thanks a lot. I really appreciate the joint partnership, and thanks for sharing today the OVH story.

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**Alain Fiocco;OVHcloud;CTO, Executive Vice President of Product**

Thanks very much.

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**Thomas Scheibe;Vice President, Product Management**

Thanks, Alain.

I hope you've got a little bit of a sense of all the innovations we have cooking, we delivered. You've got some stories from our customers. And clearly, there's more to come. And I'm not going to be here and pull like the rabbits out of the pocket, so to speak, but there's more to come, right? There are some of the terms I just put them up here whether it's cloud first, how do we help the networking team, if they don't want to deploy the fabric on-prem and just try it on the cloud and then make it easy to port it back. There's things around ultra-low-latency. You probably heard a little bit about this company that we have around ultra-low-latency mix and switches. There's a whole story on SD-WAN and how we bring us together with ACI. There is edge computing. OVH is probably in that bucket, and there are others that have capacity and they actually know how to build data center service there.

And then clearly, analytics, we brought out these application set. Jan made the comment, make this easy to consume and one of a little glimpse. And this is just a teaser for you. You don't have it yet, but you probably saw this [inter-site] tool that runs as a SaaS, you can lock it in. Today, you can manage your compute and your storage, imagine there's a little tab popping up and there's networking as well. So that's just an idea of what you probably should expect to come from us around analytics, as SaaS analytics as a simple integration. So with that, I do want to say thank you for spending 30 minutes. We are right in the demo floor, the show floor. I think this is a picture from last year, but it's the same thing. The data center demos are all in the corner, if you go this way. Everything I talked about all the products I mentioned, you can actually see and you can get more detail there. So really appreciate the time, and I will hand it back to Tony.

### Unidentified Company Representative

Hello, everyone, and welcome to the Innovation Talks theater. My name's Toby, and I have the pleasure of being your host today. A big warm welcome and thank you all for coming to Cisco Live 2020. It's good to see you. There's a lot of us here, but together we're going to build a bridge to get you to where you want to go so you can make anything possible.

Now here at Cisco Live, you'll be inspired, learn new things. And of course, create the path to endless opportunities. Now we are going to have 14 innovation talks here in this theater, where we'll share with you our latest solutions, innovations and, of course, best practices.

Now as customers and as humans, we are becoming more demanding. Customers want it faster, bigger, better. As humans, we create connections to give us what we want and when we want it. In this session, we'll show you how Cisco CX works closely with its customers to deliver global capabilities that will help modernize, monetize and drive business transformation so that they can provide the ultimate customer experience. Specifically, we will share how industry leaders, Cisco and Expo 2020 Dubai partnered to showcase the future of network technology and the incredible possibilities it presents, but also shape how we all connect, communicate and collaborate. So to tell us all about it, please welcome to the stage, Alistair Wildman.

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### Alistair Wildman; Head, EMEA Customer Experience Group

Well, thank you very much. What an amazing entrance, thank you so much. Okay. Welcome to my innovation -- our innovation talk, myself and Tony, and the team here from CX. Before I start, I just want a quick show of hands, who was here last year, who saw the CX session last year, just raise your hand. A few people. Okay. So I'd be very keen to get your feedback later on to see how we've moved forward. Because I think that the main thing for me is that as we think about what we're doing here and what we're doing at CX as part of the Cisco machine. The #1 imperative for our company has not changed.

We must, at all costs, make our customers successful, no matter what. Is that not right, Marty? Always, always, the #1 imperative of our company is to make sure that our customers are successful. Some of those customers are challenging and some of the projects are challenging, but we must come together to make sure. So what I'd like to do now is I'm going to start by showing you this incredible video of an incredible challenging project we've been working on with the most incredible team in the Middle East. Could you please roll the video on Expo 2020.

(presentation)

Let me start by, first of all, congratulating the team that are here today who are working on Expo, well done, everybody. This is -- it's an incredible project, an incredible customer and an incredible set of challenges. Now we don't see -- we see these challenges many times in the marketplace. We just don't know them. We see them as [acute as here]. 25 million people will visit Dubai in a 6-month window starting from October this year to experience what is being built, the world's greatest show. But when we started working with the team in Dubai and Mohammed, it was very, very clear that they had a couple of really big issues. Number one, they had an opening date of October 2020, non-negotiable that they had to open. It was already booked.

Secondly, complexity. They've built 191 buildings in the middle of the desert, 25 kilometers from the center of Dubai, and on that desert they had to build everything. The foundations, electricity, the power, the utilities. And not only that, but they had to make it the most technically advanced show on earth because we saw what happened in Beijing 10 years earlier, in Italy, 5 years earlier. Dubai, this was the flagship project for the country of Dubai, United Arab Emirates, the whole world is watching, and they picked Cisco to partner with them. And I'm really proud of what the team did there, but the complexity is off the charts. And we're not there yet. We still haven't opened yet. We've still got a lot of work, but I'm absolutely really confident that [Adeli] and the wonderful team there have got it in hand.

But the other problem we found there is the skills gap so I mean, we have about 250 people in our office in Dubai. Guess how many people who work for Cisco are actually natives of the United Arab Emirates, okay, the UAE. Anyone want to guess? One, exactly. So we have the -- is that the one? So not only have we got the skills gap, but we've got to bring everybody into Dubai for these projects well. And again, we've managed it. We've managed it successfully. We see this a lot with many of our customers, and we see it a lot in the marketplace today. Because as we all know,

it cannot be business as usual. That project was not business as usual. The projects that many of you are thinking about is not business as usual. It's -- there's an implicit assumption. As you move to services and subscription and software and subscription that you will need to change and map, your entire business process to the life cycle.

Now you'll hear this word life cycle, life cycle a lot. We have life cycle of hardware, life cycle of software, we are now talking about the customer life cycle. So your life cycle, how you engage with the solutions that you're buying from Cisco, and our wonderful partners and how we can help you on that journey? And what I'm going to talk about today is I'm going to show you the future. I'm going to give you -- I'm going to -- a glimpse into a window of where we're going. And the reason why we need to get the life cycle right first is it's really, really important. We get the life cycle right first. And it's really hard, and we have to do it together, and we have to do it at scale. We have 600,000 customers, okay? That's a lot of customers, and we need to map every customer to this life cycle. Because if you don't have a life cycle, you're never going to get to value.

So one of my colleagues in America, [John Bunding] actually mapped the life cycle journey of an actual customer, and it's a top diagram there. And this is exactly how the engagement work. Because we didn't know where the customer was at that point in their journey. If you look below, we have this idea of a figure of 8, okay? And we call that the customer life cycle. This is not a Cisco slide, by the way. This is an industry slide. We didn't make it up. The industry use it. By understanding where you are on your particular journey, we can then engage with you and bring the right resources to bear with the right telemetry and data and insights to make sure that as we drive forward, we can have an incredibly seamless journey. So that's a little bit about the life cycle and why it's important. Now let's talk a little bit about the Cisco CX success portfolio.

And again, you'll see that we've renamed our portfolio from services to success because our aim is to really help you be successful. So first of all, we've got our incredible support portfolio with just an amazing set of services were there. And what's new and what we're announcing at the show today, I think we announced it a couple of months ago is that we had our [host] solution support. Where is [Sanjiv]? Sanjiv you here? Okay. Sanjiv did a session about 2 hours ago across there where we talked for over 30 minutes about solution support. Solution support is incredibly important because for the first time ever, we're adding software and subscriptions into solution support, which means that if you want help from Cisco, you can have a single point of triage for all your issues, whether it's third-party or Cisco, solution support is absolutely vital for those customers that need that actual [air] support in this ever-increasing complex world.

In the middle section there, when we focus on your perform and you transform. We are launching today our flagship service offering, which is business-critical services, okay? The best way to think about business-critical services is as you as a customer embark on that digital transformation and every customer will have a transformational journey. You'll all do it in your own way, no matter what sector, whatever industry or whatever geography. Everyone is transforming, you will need some help and some skills to help to augment your teams. The business-critical services are there to help you underpin your transformation. We've changed the way we take this to market. We now bring this in what we call personas.

So we have a set of services for the architect. We have a set of services for DevOps. We have a set of services for SecOps. We have a -- look at me. We have set of services for NetOps and then administration. And what that means is that we can actually customize and package together the meaningful services and they -- what we call our base foundations, and there are 3 different packages you can take with business critical. And then if you require extra help, and many people will, Cisco and our wonderful partners will step in and we'll provide either scrum services or we can provide dedicated experts.

So again, what's important, our business-critical services, it's new. It's focused, it's sold by and scaled with our partners, which it never has been before, which is an amazing thing. And then finally, we've listened to you as customers, and you've told us. You need help as with some of the more areas of managed service. So as a show today, I'm really pleased to announce that we've got 3 brand-new offers we're bringing to market. And these are only available through partners. You cannot buy them directly from Cisco, you must talk to your partners. The first one is our managed detection and response, which is the package solution around the Talos threat detection agency, the second solution is a secure SD-WAN, and the third solution is our UCM cloud.

Now many of you, I'm sure, will be interested to know a lot more about these solutions. If you go to the very back of the hall, we have our demo booth, and we're doing full demos on everything in the portfolio. So if you're interested in solution support, please go over there and see the solution support team, if you like to understand more about business-critical services and how it may help you with your digital transformation,



we have a stand there. And finally, all 3 of the brand-new operate offers are being demoed at the back there. So please feel free after you've finished, and don't go yet. Let me finish. By the end of the presentation, make your way over there, and please learn more because we're here to help.

Now as we look at the future, we're going to simplify the way that we provide our supported services to our customers. And we're going to move to a brand-new model. So what I'm showing you now is very new, okay? So I will take a few minutes to explain it. We know that every one of our customers will need a different type of engagement with Cisco. We know that some customers have really good skills in their own teams. And maybe they only need a Level 1 support. So they need some help from Cisco, but they really want to be guided. Then we know that other customers, though, probably need a little bit more help. So maybe they go for a Level 2 support. And some customers need a lot of help because of the new complexity in our software products for Level 3 and Level 4 is a managed service.

So in the future, as you engage with Cisco, we will basically bring you our new success tracks, and then you can decide with your partners, what kind of engagement you want with Cisco, Level 1, Level 2, Level 3 or Level 4. Now that's a great way of simplifying all those very complex solutions you have in the market, which will make it very easy for Rich's team to be incredibly successful. Exactly. But to augment this new portfolio, we also have this most incredible new customer experience solution, which is a set of portals that my good friend, Tony has been building, and what we'd like to do for the remaining 15 minutes, which is exactly half of this presentation is, we would like to show you the exciting future that we're planning. And hopefully, you can get as excited as I am by the time we finish this presentation. So Tony, what have you been doing this year?

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#### Unidentified Participant

Just a little bit. We've been working on what we're calling the collaborative intelligence platform. This has been a lot of work by designers that are sitting here, a lot of engineers back at Cisco, really trying to think of how do we have that single entry point into our products. So what does CX provide? We are from the time that you look at a manual or a brochure with Cisco all the way through the usage of our platform, that is the customer experience. What we're driving is a digital experience, first of all. Second is tying all the telemetry together. So regardless of what product you're going to have with Cisco, we want to level that and put that in a single location. It's also use-case driven. There's tying learning and then has a bunch of AI and ML.

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#### Alistair Wildman;Head, EMEA Customer Experience Group

Okay. So what -- Tony, this is just a slide. Do you have a demo or a live version that we can show the audience today?

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#### Unidentified Participant

I think we should.

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#### Alistair Wildman;Head, EMEA Customer Experience Group

Would you like to see the live version? Come on. Come on Tony.

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#### Unidentified Participant

Okay. So when I joined Cisco, the first thing that, when Alistair and I spoke, I said, "So great, I understand the life cycle, but where is the digital version. How does that help me and help our customers as we walk through this?" So what -- I want to orient you on the screen and essentially what you're seeing here are 4 tiles and a carousel. It is a modern web design. This is using everything that you're likely used to in your consumer world and your daily lives of using a product. What we brought here is how do you take that digital life cycle experience inside of a portal. So for example, I just highlighted and hovered over and now I can actually see where I'm at as a customer. So today, in the onboard stage, I'm at 11%. My goal is to get to 100%. In order to hit that 100%, I have a checklist.



So it's simplifying the entire life cycle of what I'm doing as a customer. As I move along the life cycle to the various pit stops, you'll notice the content is actually changing on the right. It's all dynamic. And what I'm showing you here is just some of the features that we have today. So for example, I'm going to go back to onboard, because right now, I am at the network device onboarding step. Because right now, I just purchased the DNA controller, and I'm just learning on how to roll it out. But I need a little bit of help. In order to do that, I can access my success community, which is based on other members within the Cisco ecosystem, whether they're partners or customers that are in the same step of the life cycle.

Here, I can actually go and engage an expert. So Cisco has these beautiful recordings on WebEx, I can actually attend the live session. So I can actually go and view what sessions are available. These are real Cisco experts. So you could Google these names, you can look them up on LinkedIn, they are Cisco employees who are delivering this content. As you can see, they're doing this on a daily basis and they're time zone friendly, depending on where we are. If you don't want to actually attend the live session, you can go ahead and click watch now, and it'll show you an actual video. These are experts that will walk you through what you're doing.

So now that I'm educated on the life cycle, now I'm educated on DNA. See now I'm educated by communicating with others. You know what, I actually want a one-on-one session because now I'm personally ready. I want to go deploy this device. I want to go set it up within my network. So I'm going to go request a one-on-one. Guess what? Now we're actually going to help you and schedule it for you right then and there. What's your preferred time? Do you want yourself or do you want a team? You want a group? Do you have multiple sites? These are all things that, as you can see it, it knows who I am, it knows all of my information? And then why am I interested? And then do you want to bring your own environment or do you like us to provide a Cisco lab environment? These are the sort of features that we're developing that if you think about the date or the day of, which is the current state of -- you're probably calling into Cisco multiple times to try to get this information. You're going to different websites. We've sat with our customers and found their favorite thing to do is Google this information.

So now as I continue to go through, I can actually start seeing, okay, I'm ready to deploy, but let me look at all the devices within my network today. So I can see all the devices I own and which ones are covered by a support contract. So I'm going to go ahead and just click one of these devices. And this is sort of when we get the WOW factor from other customers that we show this to you, not only does it show me what I own, it shows me what software is running? What's the operating system? And guess what, where it's actually located. So the actual deployed location, not just where I bought it, or where it's stored, but the physical location. Now from here, I can actually go and see something else that many of our customers have been asking us for. All of this content is readily available, but it's not easy to find. Now I can see in one location, all of my PSIRTs, all of my bugs and all my security advisers, all related to the actual device. So I can see here, I've got this critical issue. And I actually want to go and understand it more.

And this is an area where I can now send this to a partner. If you're working with a partner, or you are working with your own internal organization to solve this, right? And what we're doing is linking this data back to the actual appliance. So if I want to go fix it on the spot, let's say, it's a critical bug, and we need to update it, or this issue we have. We're going to have a launching point to the different devices and controllers themselves, where you can actually solve this problem on the device right there and then, and it'll immediately disappear. The other piece of feedback we've heard from our customers is, this is a beautiful view. But guess what, I don't always want to take Cisco's recommendations, so just give me the ability to acknowledge it.

So we're going to avail the ability to have built-in collaboration, where you'll be able to actually go and communicate with others via WebEx teams throughout the entire experience, and not just with your own employees, but also with Cisco. So today, I can see my Cisco team right now, my SPM is Roger. So I can reach out to Roger at any time if he's available and actually communicate directly with him for some help on the spot.

The other last 2 things before I hand it back over to Alistair is we have rapid problem resolution. This is an area where it's heavy, heavy AI and ML. We're aggregating all the tech cases from the last 35 years and actually providing some insight before you actually open a case with us. If you have to open a case, we will obviously, store them here. And we're also integrating with your partners. So our partners, sometimes you have a partner as your Level 1 support. All of the cases, not just ones opened with Cisco, but even with your partners, will be visible within this tab, and then the last thing, and it's great because I'm using an actual Cisco lab environment.

There's 0 insights, mainly because I have no issues with my network. But this is an area where we will actually send you an SMS and say, guess what, we're predicting a crash, based on the 600,000 customers that Alistair talked about, we have a treasure trove of data within Cisco. We're getting



telemetry. We're scanning that for anomalies and we're producing that in a single user interface that will predict our [amaze and predict crashes]. So this is just some of the early work that we're doing, and it's just going to continue to flow. We've just launched this with 5 customers, and we're going to continue to sell this and position this as our go-to-tool for CX and Cisco going forward.

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**Alistair Wildman;Head, EMEA Customer Experience Group**

So Tony, what happens if I want to search for something?

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**Unidentified Participant**

It's a great question. So here, I can actually go and search anything within the tool. One thing we've done is we've started to crawl similar to Google, we're essentially looking at data from all different sources. So if I want to search on a document, so if I start searching SJC, and one of the devices, it's going to start showing me and this is a live environment. So that's only danger of doing a live demo is essentially, what we're doing is we will aggregate all of the data from all the different sources, whether it's externally to Cisco or internally to Cisco, whether it's previous [tech] cases that someone on your team has opened. So think of this as a search experience that's very similar to Google, where it's actually pulling data and indexing it, not just externally, but internally, a community post is a great example, Alistair. Someone posted something on the community recently, it's automatically available in the search. You're not having to go link out to the community, unless you want to ask it a specific question.

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**Alistair Wildman;Head, EMEA Customer Experience Group**

Brilliant. So Tony, can you go back to the life cycle tab.

So Tony, what actually happens when I check that third box there? So I'm currently a customer. I bought the IBM solution, my use case is network device onboarding. And I've gone through the first 3 checklists of things that I need to do. So tell me, what would happen if I complete this checklist now?

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**Unidentified Participant**

So one of the beautiful things about this is you can actually check some of them, but then the other ones, you cannot check because we're building in logic to say, you can't just say have completed my DNA center installation. As you can tell, I'm not given the option actually to check that box because I actually haven't done it. So one of the things is the communication back and forth between our systems and the interface, are real-time communication saying, you know what, I understand you want to check this box, but you actually have to complete a few more steps, and we'll walk you through those steps as you go and select through and actually want to understand.

These are all the things I have to do in order for that box to be checked for me. And as I continue through the life cycle, as Alistair mentioned, or maybe let me pick a different use case. I can actually see different data and different components within the pit stop. So here, you'll notice a different checklist, and I haven't completed any of these items or areas within that checklist. So again, just powerful data that we have around all this successful best practices of customers who have successfully completed the implementation of these services and how we make our customers successful.

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**Alistair Wildman;Head, EMEA Customer Experience Group**

So customer success is not new. It's been around for about 12, maybe 13 years, but what is new is that this is driven on the life cycle with a use case, okay, which is really important. Because we can now pinpoint exactly where you are on your journey. We can pinpoint the help that you need from Cisco or our amazing partners, and we can then help you move to the next point of your journey. So we're taking all the telemetry and all the data from out of our wonderful products and we're giving you a digital-first experience, which will allow -- which will put you with our partners in the driving seat.

This is the future of customer success and customer experience. I'd just like to pause for 2 seconds and just thank Tony and his amazing team for all this amazing work. So thank you so much, Tony and team.

So I want to go back one. So at the show, that's it. At the show this week, we've been obviously talking to a lot to the analysts and to the press and, obviously, to our customers. I think now we must be hitting around 500 or 600 demos that we've done on the stand of collaborative intelligence. How many requests -- we've also got a second stand, which is to the right of our customer experience stand, where Pat and the team are actually taking feature requests from customers and partners. So as we show our customers and partners, this portal, this amazing technology. If you think there's something missing that you'd like to see in there, if you'd like to visit our customer experience dev team, they are to the right of the main stand.

They're actually doing a feature world to understand exactly what you need. And before I came here today, I ask Pat, so what is it that people are asking for. And Pat told me, I've not got it -- it's -- I thought my phone was there -- mobile. So you're now telling us that one of the biggest requirements we've taken from this week of being here with our customers and partners is you want this on your mobile. So Pat, are we building a mobile version? Yes. Tony, thank you. Next week, no joking. Yes. So again, this is real-time collaboration. This is real-time feedback. I would encourage everybody here if you've not had a demo because, please go over to the booth.

We've got 4 or 5 demo pods, there is a version for customers, and there is an incredible version for our partners as well, where partners can actually add their own accelerators and their own content to monetize it as well. So please, if you've not seen collaborative intelligence, don't leave Barcelona without seeing this because this is the most exciting thing at this show this week. That's my opinion. So finally, with that, I'd like to thank all the team here today. I'd like to thank you for being here, and I hope you have a great time, and thank you so much, for Cisco Live, cheers.

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#### **Steve Multer;Chief Storytelling Officer**

And that really is exactly what it is all about. If you have never been to a Cisco Live before, as you just saw there in that video come down, be a part of it. We want to have you here in the room with us. To experience all the excitement, the people, the noise, the technology, everything that makes Cisco Live truly the greatest event ever, whether it's here in EMEA or in the U.S., wherever you happen to be, come and be a part of it. Good morning, everyone. Welcome. It is Thursday morning here in Barcelona. It's our final day of the show. It's hard to believe that we've arrived here. What an amazing week it's been starting with that opening keynote and then all the way through driving everything that is Cisco. Wherever you happen to be around the world, we're so glad to have you on the live broadcast. Remember, please keep reaching out to us all day long using #CLEUR. We're going to be with it right up until the end of the closing keynote this afternoon and for all 4 of us hosts, myself, Steve Multer, and then also Nish and David and Zane, we want to talk to you guys all day long. So please stay right with us.

Right now, though we're going to kick things off with maybe one of my favorite people here at Cisco. Somebody who as far as I'm concerned, we do not have the complete Cisco TV broadcast without having our own Susie Wee here on set. I don't get to talk to you this time, but we've got the great Chintan Patel here with us in studio and the 2 of you get to have a great conversation. I'm just going to stand over here and listen so Chintan. Go do what you do best.

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## **QUESTIONS AND ANSWERS**

#### **Chintan Patel - Cisco Systems, Inc. - CTO - UK & Ireland**

Good morning, and thank you very much. And I know you talked about the keynote, and we finally got Susie on the show, which is great to see. So thank you, Susie, for making it.

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#### **Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

Thank you for having me.



**Chintan Patel** - Cisco Systems, Inc. - CTO - UK & Ireland

You were on the stage on the first day. It was such a fantastic session. And you shared some exciting updates around DevNet. And what I would arguably say are some of the biggest changes we've made in certifications for Cisco in our history. So could you tell us a little bit more about that because I'm sure everyone wants to hear?

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

And you're absolutely correct on that. And that we've had Cisco certification program for 26 years, and this is the biggest change that we've made in 26 years, and what we have is with the new Cisco certifications, there's a CCNA, a single CCNA that cuts across architectures, brand new. CCNP, CCIEs, the technology concentrations. So with all of these, they are entirely new to bring you the newest technologies and make sure we have the engineering skills that we need. But in addition, what we did was at an entirely new set of software certifications, DevNet certifications. So we have the DevNet associate, the DevNet professional, technology concentrations with the DevNet specialists. And what this is going to do is prepare us for this world of infrastructure expertise, in the world of software expertise coming together to drive the network of the future.

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**Chintan Patel** - Cisco Systems, Inc. - CTO - UK & Ireland

And there's been a lot of buzz. Have people started to take those exams now? Are people getting immersed in them?

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

The exams are ready for all of these on February 24. So February 24, 2020...

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**Chintan Patel** - Cisco Systems, Inc. - CTO - UK & Ireland

Fantastic. [That's the keynote.]

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

People are signed up for these. They're ready to go, and it's really exciting.

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**Chintan Patel** - Cisco Systems, Inc. - CTO - UK & Ireland

Okay. And you shared something at the keynotes around perhaps a select few that might be a little bit lucky for (inaudible) certifications? 500?

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

Yes. We know that -- 500, yes. So we know that our CCIEs are very proud of the number and they deserve it. They work so hard for that. But we have a new chance with these new DevNet certifications. And what we're going to do is we're going to recognize the first 500 people to get any DevNet certification, and they'll be the DevNet 500.

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**Chintan Patel** - Cisco Systems, Inc. - CTO - UK & Ireland

Fantastic. So you heard it folks. It's a great opportunity to be part of this exclusive club. And I think we've had some exciting things in-store for the 500. Now the other thing I noticed here at the show was a lot of people are actually building things on top of the platforms that we're providing



through DevNet. What are some of the things that people -- you've heard here at the show that people are building the integrations and the implications.

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

Absolutely. Yes. So what happens is, once again, now our entire portfolio is programmable. It has APIs. It's an entirely new network, which means that a lot of people have been working on things like automation and struggling with how do I automate my network. And if you take a look over there in the DevNet zone, then what happens is there's a lot of people who are getting very hands-on with the APIs, who are really thinking about how do I use this in my entire workflow to automate my infrastructure? And once I get into that automated infrastructure, then we have another set of people who are looking at what are the applications that I can build and accelerate by having control into the network. So we have interesting IoT applications, robotics applications that are using edge routers that can host applications.

We have things where we can use the network as a sensor to feed up both security, threat intelligence, network as a sensor and then provide more insights. And then people are coupling to their business where they want to know, hey, how can I actually drive my business? So if I bought some infrastructure, we have a major coffee shop that has basically bought SD-WAN infrastructure across the globe. They've used wireless and after we've kind of gotten them connected really well, they said, how can I know my worst problem, which is when someone is waiting in line too long, and they walk out of the store, infrastructure tells you that, and that's solves a business problem, and we can solve that with our wireless.

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**Chintan Patel - Cisco Systems, Inc. - CTO - UK & Ireland**

Fantastic. And I know there's a lot of work going on across EMEA. Koen Jacobs and Julio Gomez have been driving our programmability initiative. Your team's been really supportive of that. So what can people expect in the region who are watching the kind of things that are coming out.

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

Yes. I am so thankful because the DevNet community is a global community. So people say, where are all your people? Are they all in the U.S.? It's like, no. And from the start, it's global, but it's because we've partnered. We've partnered with our ICs, we've partnered with, like every country. And actually, you've been doing a lot of innovation and work for DevNet. So you can talk about what we've been doing together.

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**Chintan Patel - Cisco Systems, Inc. - CTO - UK & Ireland**

Well, we love it. It's having such an impact with our customers and our partners. We're seeing a lot of transformation happening certainly for partners here the ability to build things for our customers on top of the platforms that we're providing. Exactly the application, as you said, new revenue streams, new opportunities, which is really important. We're solving business problems, right? I mean, that's what it comes down to is, can we give better visibility telemetry into the things that are going on in our customers' businesses.

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

And what's been fantastic is by working with people like you, with our SEs, with our customers, with our partners, then that's hands on touching with helping solve their problems, help them give them the skills they need, help them think about the business solutions they can put together.

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**Chintan Patel - Cisco Systems, Inc. - CTO - UK & Ireland**

So we'll continue pushing that with our [SE Maker] movement. One last thing, as you finish this event, there's another big event happening in March. Do you want to just share a little bit about that with the audience?



**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

Yes. So we love our Cisco Lives and the DevNet zones that are Cisco Live!. And what we have also is a standalone DevNet venue called DevNet Create. And we're holding DevNet Create in March. And what we do is we hold it in Silicon Valley, it's in Mountainville, California, third one. And what we do is we bring together app developers and infrastructure developers. So this world of like the AppDev and the InfraDev, they actually come together on here. What's happening is that the app developers, they are like, do they really need the infrastructure? Do they care about that? They get so excited to meet the Cisco infrastructure developers like the partners who are out there and say, yes, I deploy the infrastructure for the city of something. And then an app developers like what my app could actually work in that city because a Cisco partner can get me into there. So it's a whole new opportunity and DevNet Create is where that combination happens.

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**Chintan Patel - Cisco Systems, Inc. - CTO - UK & Ireland**

Fantastic. We can't wait to make it there. Thank you so much for being with us.

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**Susie Wee;SVP & GM of DevNet and CX Ecosystem Success**

Thank you for having me.

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**Chintan Patel - Cisco Systems, Inc. - CTO - UK & Ireland**

DevNet Create is going to be awesome. Steve, back to you.

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

Now I feel like our broadcast is complete. We got our Susie in here. Definitely such a super star and such a rock star here always at this show. Thank you for the time. And Chintan, great job, as always. We have got an exciting morning of broadcast ahead of you. Right now we are going to go out to our Cisco advocates with what we call one of our AdvoChats. This time, we're going to have an AdvoChat on enterprise networks. And as soon as we're done with that chat, we are going to come right back here into the studio, and we're going to have a great conversation about what's happening in small business. Make sure you stick around for that. As always, if you want to speak with one of our Cisco sales representatives. Great. They would love to talk with you about all the exciting new technologies and cool things going on. So reach [outtocisco.com/go/sales](https://outtocisco.com/go/sales).

(presentation)

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## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

Glad to have you back live in studio with us. We are in a great segment right now. We are going to take a moment to speak with and recognize our phenomenal sponsors here at this event. Very, very grateful for them. And we're going to begin with NetBrain, and I'm going to turn my attention over to the left this time where I've got Jason Baudreau here with us, VP of Marketing for NetBrain. How are you, Jason?

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**Jason Baudreau;NetBrain;VP of Marketing**

Hello, good, Steve. Good morning.

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**Steve Multer;Chief Storytelling Officer**

We were talking a moment ago. And again, I was able to walk by the booth yesterday. You guys were jampacked giving loads of demos, you've got a divided area. You were so busy in the middle, I couldn't even walk into the booth. So congratulations.

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**Jason Baudreau;NetBrain;VP of Marketing**

Thank you.

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**Steve Multer;Chief Storytelling Officer**

I want to start by talking a little bit about network operations. First of all, do you guys really believe that network operation do, in fact, need transformation? And if so, why do they?

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**Jason Baudreau;NetBrain;VP of Marketing**

Yes. And why now, right? Because I think a lot of it -- one of my favorite things about coming to Cisco Live every year is understanding what's going on in the industry and the transformation. And of course, we're hearing a lot about the transformation from what was typically physical networks to SDN and API. And of course, now it's SD-WAN and towards the public cloud. And the thing is one of these technologies isn't displacing the other. It's really augmenting, right? So networks are becoming more heterogeneous end-to-end. And so much of this automation that's bringing -- that's coming to the network is bringing simplicity through abstraction. But when things go wrong the complexity still lies underneath the surface. So teams in the operations side are struggling to troubleshoot and respond to incidents amongst all that complexity.

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**Steve Multer;Chief Storytelling Officer**

So let's talk about the NetBrain approach. What exactly do you offer? What is the primary story that you're telling to customers today and throughout the week?

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**Jason Baudreau;NetBrain;VP of Marketing**

Yes. So NetBrain, we're a network mapping and diagnostic automation solutions. So we talk about network automation in the context of incident response, day 2 troubleshooting automation. So much to automation today has been focused on the day 1, right, provisioning. So we think it's time for automation to come to day 2, network operations, and that's what we mean by NetOps transformation, bringing in automation and augmenting every existing workflow with that automation. So what is that workflow? It's an incident response workflow. It's a ticket that's coming in typically from a ServiceNow or a BMC Remedy, right? And the typical enterprise organization may have hundreds or thousands of these tickets every day. So something that's happening with that volume, that's the ripe for automation, right? So we try to augment those workflows from it. The moment the ticket comes in to the moment the ticket closes, we have 2 things: we have visibility of the network and with it, end-to-end visibility of the network and automation.

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**Steve Multer;Chief Storytelling Officer**

Very, very good. Let's talk a little bit about medium time for resolution because we hear it pop up all the time. It's one of the catch phrases that we hear wherever you go. What are the challenges that we face in MTTR? And how do we begin to overcome them?

**Jason Baudreau;NetBrain;VP of Marketing**

Yes. So especially, I think the team -- the term MTTR is so overused, right? But the real part is the mean time to repair, the average. So to improve an average of something, you have to be continuously and systematically better over time. And so we think automation, the approach with automation is through a continuous feedback loop of lessons learned. And every incident has some sort of a resolution, and there's a lesson to be learned about that problem. So we ask ourselves, if it took 4 hours to troubleshoot a problem, is it going to take 4 hours next time to troubleshoot a similar problem? The answer should be no. We should digitize the lessons we take from that event, codify some sort of diagnostic automation. And ultimately, from left to right as that ticket gets escalated, it should be shifting that workload to the left, right? Left escalation from Tier 2 to Tier 3 architects, more driving that automation, jogging that workload down to Tier 1 response. We even think there's opportunity to drive workloads to what we call Tier 0. Before a human even open a ticket, there's opportunity for automation to augment through maybe an API-triggered automation from a ServiceNow ticket, for example.

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**Steve Multer;Chief Storytelling Officer**

Do you see in the future that we may actually reach some level of standardization in terms of the practice and how we do what you're just explaining?

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**Jason Baudreau;NetBrain;VP of Marketing**

I think quite possibly. I mean, if you look at -- we talked to hundreds of customers throughout shows like this, and we try to understand what is your troubleshooting process. And so much of it follows a very typical workflow the day -- the life cycle of an incident if a problem comes in, it's usually a ticket. There's usually an IP address, usually with a source and destination of an application, for example. So can you standardize the mapping of an application flow? Can you embed that map application flow inside of a ticket? What are the top 3 to 5 things that you should be checking for when you troubleshoot? Well, why don't you just automate those and embed the diagnostic response from that inside the ticket. And then there's a curve ball there, which is there's going to be a wildcard of things that you can never anticipate, right? So how do you automate something so reactive and shoot from the hip like troubleshooting? So it has to be absorbing lessons learned continuously and ongoing, so that every unknown problem eventually becomes a known problem. And then those known problems have associated known diagnoses. And those diagnoses can be automated.

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**Steve Multer;Chief Storytelling Officer**

And this is a deep embed for NetBrain in terms of how you are responsive in this way with your particular customers. Are you guys really hand-in-hand on a daily basis with them to get to these points?

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**Jason Baudreau;NetBrain;VP of Marketing**

Yes and no. I think the thing we try to do is we try to integrate into their existing workflow. And we try to augment that with automation. But more importantly, we have to provide a platform to enable the customer to drive that automation themselves. Automation has to be customized to the unique network, to the unique use case within that network. So ultimately, that's why a platform has to be there. And in a low-code or no code way to automate that helps network teams, not DevOps teams, not programmers or scripters, helps network teams create that automation. And the part of the network transformation, the NetOps transformation is, who is the automation for? It's not for just the people that build the automation, for the few, it needs to be for every network engineer, needs to be able to access and use that automation. So an enterprise that has 100 or 1,000 network engineers, they need to have that automation at their fingertips, not just 1 or 2 people, but everybody, every day.

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**Steve Multer;Chief Storytelling Officer**

Absolutely. All right. So for those people who are with us here on the streaming broadcast and not live here in Barcelona. If they want to get more information or they want to get started working with NetBrain, what would you like them to do?

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**Jason Baudreau;NetBrain;VP of Marketing**

Yes. So certainly, if you are here, we're in booth #7 in the World of Solutions. If you're not here at the show. So visit us at [netbraintech.com](https://netbraintech.com) and learn more. And if you're interested to see what sort of mapping and visibility automation looks like, you can basically get an evaluation version of NetBrain.

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**Steve Multer;Chief Storytelling Officer**

All right, fantastic. Jason, thank you for taking the time to be here with us today. Thank you so much for sponsorship here. We are really grateful for it and for that partnership that we have with you at NetBrain between you and Cisco. And congratulations on the great work that you've been doing.

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**Jason Baudreau;NetBrain;VP of Marketing**

Great. Thank you, Steve.

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## PRESENTATION

**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Welcome to AdvoChat. So this is the area within Cisco live, where you can kick back and relax and enjoy hearing from Cisco customers who will be sharing their experiences and how Cisco technology can help them tackle challenges that they may have had in their businesses and how it helped them achieve their business goals. Now it's relaxed and it's [chatty], and we want to hear from you as well. So at the end of our AdvoChat, we're going to be having some Q&A. So the title of today's AdvoChat is Enterprise Networking, and we are going to be talking to the Senior Network Architect of RIVA, one of Europe's largest supermarket chains, and we're going to be finding out just how you can quantify the real business value that customers are seeing from artificial intelligence and machine learning in Cisco DNA Center.

So please give a warm welcome to my armchair guests, [Hans] (inaudible) Senior Network Architect from RIVA International Ag and Cisco's own (inaudible), EMEA enterprise networking marketing lead. So thank you so much for joining us this afternoon. We're looking forward to hearing all of your stories. So Hans, #1 spot in Austria. That's pretty impressive and a leader in food retail. So it's a pretty good going. So could you please give us a bit of an overview on Riva and your role within it.

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**Unidentified Participant**

Okay. So RIVA is a big retailer in Austria. We are located in 11 countries, all over Europe from Russia to Italy, so we have approximately 5,000 stores in Europe. And in fact, I think around 60 warehouses. In each country, we have, of course, a headquarter and they are all connected with the network using Cisco companies.

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## QUESTIONS AND ANSWERS

**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Good choice. And (inaudible) please could you share with us your role within Cisco?

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**Unidentified Company Representative**

So I'm a part of EMEA for enterprise networking, been around for more than 16 years. So it's been fun.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Good. That's good to hear. So Hans, what does your network look like at the moment in terms of locations. You mentioned multiple locations and what tech solutions do you have in play?

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**Unidentified Participant**

Yes. In fact, as I said before, we have a headquarter in every country. And then we have, in each country of course the stores and the warehouses. They are all connected either through these lines, IPsec-based Internet VPNs. And altogether, we are -- have implemented network using around 11,500 switches, 750 Cisco routers, we have approximately 20,000 access points controlled by 100 wireless LAN controllers. We are using the Cisco WAAS for wide area networking optimization. We are using Cisco firewalls for security. So the, let's say, the old others as well as the new FTDs. We have proxy sensors for the WSA so almost everything you can think of.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

A Cisco shopping list. Brilliant. So plenty of Cisco's maturing in there.

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**Unidentified Participant**

Yes. And in fact, the hub is Austria. In our case, all the countries are connected. So in Austria, we have the services on the Internet or the DMZs, but as well as the connections to the warehouses and the stores and each country is more or less a copy of Austria. So the setup, let's say, is straightforward. That doesn't mean that it is sometimes not a little bit complex, but because it's always a copy, we try to overcome some complexity.

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**Unidentified Company Representative**

And I think that when I spoke with Hans earlier that their network is so critical to their business. Because all the warehouse, everything is on that. What other things you have there that are running that are so critical to the company?

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**Unidentified Participant**

When we start with the stores, of course, it's our ERP system that is used in the stores for the incoming goods as well as for commissioning. So to do their orders. If Cisco's down in fact, we cannot deliver goods to the store. So we cannot sell anything. Then we have the warehouses. If a stock management, if store management application goes down, we cannot receive goods because they cannot be placed in the warehouse.

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**Unidentified Company Representative**

And trucks cannot.

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**Unidentified Participant**

Yes. One time we had the (inaudible) news, because traffic jam on the highway, because the trucks could not be unloaded, and they had to queue up and they were all the way down to the highway. And that wasn't really...

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**Unidentified Company Representative**

So the network is very critical to the business. It's not nice to have. If the network is not working, that's really serious.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Yes, absolutely. And (inaudible), could you tell us what is intent-based networking?

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**Unidentified Company Representative**

Oh, it's a long question. Intent really is the future of how networks are evolving to. Instead of starting and managing each and every one of these devices, the company started -- actually the first was software-defined network, really managing via controllers. But intent-based networking and what we do it in Cisco called Cisco DNA, digital network architecture is a closed loop. So first, you have your business requirements, okay? What do you want users with applications, how it's going to work, okay? And to do that instead of going in each and every device, you want to do it with just a dragging of an icon and everything happens. So for example, if I have all my IoT devices, I want them to be only in specific places. So that's one critical part. How do they take the business intent and transform it into the actual operation all the way to the infrastructures, all the way to the IoT devices to the printers to anything out there.

That's a lot of things. Especially in networks like RIVA. But the second point, which is even more what we're going to talk today about is actually feeding back to what was happening there. So if there is any issues you would like quickly to be able to notify and do even the changes. And this is where we're going to the future with artificial intelligence, where actually before issues happen, the network will be able to solve them. So you have, first, the business requirement translated in going all the way to all the networks, but also understanding all the things that are happening telemetry, all the information, which is a lot of it all going back and giving you a very clear information what's happening and what needs to be done before anything happens. So that's really in a nutshell what intent-based networking and Cisco DNA, digital network architecture.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Okay, great. And when we talk about Assurance, what is Assurance?

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**Unidentified Company Representative**

Assurance is really taking all the loads of information out there, okay? All the logs, all the SNMP, everything and really taking all that and making something sense about it. And I think RIVA, Hans can give you some great examples. I'll give you just maybe one. Imagine you have a customer who says, "Last week, I was in the office on Monday, and I had not a great experience with my mobile. Something didn't work nicely." In the old days, what Hans used to do, and correct me if I'm wrong here, he started going to the different logs, to the routers, to the SNMP and everything, it could have taken hours to find out. And going backwards, no chance. Assurance, one clear example is I can just go back in time and really understand if it's the mobile device, if it's the access points, if it's the switch, if it's the router, anything, I'll be able to have a very clear understanding and saying,

you know what user, actually, the issue is that you didn't have the latest software or something like that. Or the Wi-Fi, there were too many people there, on that point, we need to fix that, okay? So that's really an example of how Assurance makes the life easier.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

We like an easy life, don't we? And so Hans, what were the reasons that you started working with Cisco DNA Assurance?

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**Unidentified Participant**

Yes. We were always in a discussion with Cisco on how to do things in a better and a smarter way, and we always discussed about how can we achieve together better overall experience for our users. How can we solve problems faster? And also, we are only a team of 9 people, so it is very -- because, in fact, most of the times, all the people are pointing at (technical difficulty) because we are in the middle. And we also have the problems with the workload. So we are also looking to get a smarter tool to be able to give some task away to the first-line support to the hot line. And that -- before it was not possible but that were 3 things we were thinking about and with DNA Center, we found a solution or an approach for this.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Yes. So what would you say then that the DNA Center has really solved for RIVA?

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**Unidentified Participant**

Yes. In fact, now we have a better overview of the network from my point of view, it's -- we could free up resources in our team, yes? Because it's not even a problem maybe to get an additional head in our team, an additional headcount. But then you -- if you get that approved, you still have the problem to find the knowledgeable people on the market, and it's very hard to find knowledgeable people on the market. So -- and I think that is something we could overcome with the DNA Center. We -- now the hot line, the first-line support is better equipped. We can explain them in short sessions, what information they can get out of the DNA Center. And so they are able to solve problems and -- on their own and they don't have to call us all the time or to pass the ticket through to us.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Which makes a difference.

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**Unidentified Participant**

And so we can focus more on projects. We have more times to work on future development and things like this.

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**Unidentified Company Representative**

I think that usually, when you start a project, you usually ask 3 things. How can I save money? How can I make money? And how can I stay out of the trouble? And I think in Assurance, specifically, one of the great things about it, it really saves time and saves money at the end of the day. So instead of wasting the 9 people chasing after their tail, trying to find out really, is it this issue or there, if I can do it in minutes, that's a huge saving. And also, it helps with the security as well.

**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Okay. So what do you feel are the key benefits that RIVA is getting from AI specifically?

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**Unidentified Participant**

The key benefits. As I explained -- now we could give away the tasks to the first line and hot line. And the key -- one of the key benefits it's, let's say, for me, it makes my job more easier, yes? Yes. It's a tool that makes your life easier, yes? You have all the information on your fingertips. You don't have to look around. And it starts with, typically, it's a problem of a client, a customer calls and says he has a problem, maybe he gives you a wrong explanation. And you start to look at the wrong end and it takes you 1 hour to understand what was his real problem, to come a conclusion what is the root cause. So I think that is a key benefit. Now you have a better overview, and it's easier for you, even if the users give you wrong information. We can be more proactive, yes? That is also one key benefit I think. Another important thing for us, also the DNA Center helps us to do a better capacity planning and all the stuff you can imagine because the DNA Center is a central point, it has all the information and we can get everything from there.

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**Unidentified Company Representative**

I think if I can add, I mean solving the issues is great, but what artificial intelligence gives you is the way to really have some benchmarking and really understanding a specific place, something is wrong. So maybe you can explain about the branches and how you have...

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**Unidentified Participant**

Yes, with the AI, network analytics is artificial intelligence, you get additional information, you get additional tools that you can use for different purposes, yes? For example, you have a network heat map and if you look at a particular store, at a particular warehouse, you can see, for example, it gives you different KPIs, 1 KPI is average data rate that clients had to connect to the wireless network. And if -- if it always has a -- had a low data rate, then you can think, okay, maybe there's really something wrong with the wireless network, because if you have a good wireless network, a good quality then the client should connect high data rates. So the average should be high. Another example is maybe we can also use the site comparison. So not every store is like the other one, but most of the stores on the field, look similar, yes? Or in fact, they are definitely the same, they are the same building.

And then you can compare size, you can -- information. So once one store is working properly and the other one is not working properly, so what is the difference? What KPIs can I look at to see where might be the problem in that store. And you can -- we also use this, for example, not even to solve problems, also for capacity planning, you can use it. If you look at the average throughput in a particular site, yes? You can say maybe there is really a problem, is the number of access points or you have to think about the design of the Wi-Fi.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

So what would you say is next in the world of enterprise networking for RIVA?

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**Unidentified Participant**

So if we look at the DNA Center, the next steps, one important step for us will be because if I come back to the first-line support, the hot-line, they are using their own tool. So in fact, they still have to look at additional tools. So on DNA Center is one tool they have to look at. And what we did before, we -- they already have -- when someone from a store calls in, the agent gets information about that particular store. And they use a tool called Remedy as a ticketing system. And what we implemented before was very simple. So they get the information about other cases -- best running, are the payment terminals up and running? And we implemented something terrific for the access points. We just need a PIN to the access point, and they could see if all the access points are up and running.

And what we want to do now. We want to license integration into Remedy because you have this parameter called [Health Core] inside the DNA Center, yes? And we want to integrate these

KPIs into Remedy so that the agent gets a better view of the store. So maybe he immediately can say, okay, it's not a problem of the network, I can see that the network health is 100%. The clients are at 95%. So it must be something else that is not working.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Good.

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**Unidentified Company Representative**

I'd like to talk about another point, which when I speak with different customers, and was talking about DNA and specifically Assurance, people are worried. Is this going to be now a major

Hassle to build this thing? I mean, it sounds like it's doing a fantastic job, right?

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

It does a lot.

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**Unidentified Participant**

It does a lot. So you're saying probably now I need to change everything. Well, actually, no, and that's a great thing about it. When you have the main device. It actually takes all the information from all the different devices in the network.

So in essence, there is minimal interference. Actually, there is no interference. Correct me if I'm wrong, Hans.

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**Unidentified Participant**

You're absolutely right. So the only thing we had to check before we implemented the DNA Center Assurance was to check that we had the controller with the right images, and that was it. Then we just installed the DNA Center, integrated the controllers into the DNA Center and there -- we had to implement -- import the maps of the stores to get an overview of the network, and that was what we did.

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**Unidentified Company Representative**

So basically, it's always good to have the latest versions, operating systems in the devices and that's it. So I just want to make sure that people are aware, when you talk about DNA, Cisco DNA Assurance, it's not a lot of hassle. It's quite easy deployment out there. So that's something that really made your life much easier instead of reconfiguring and doing all that stuff.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

I'm enjoying hearing words like oh, making my life easier, it's saving me time, it's saving money, hopefully, keeping you out of trouble as well. And before we open up the floor to questions, [Bert] is there anything else that you want to add about Cisco's DNA Center?

**Unidentified Company Representative**

No, I think that we are seeing very successful deployments on these things. And we see here, we're talking about assurance, but there is also a software-defined access. That's another critical important thing. But in essence, that's the future. Any company out there who needs to manage like a company the size of RIVA, it's going to be more and more complex, more and more devices, you have even watches connected and mobile devices and IoT devices and everything out there. If you're still in the world of managing these devices without a control base, without intent-based networking, you're going to have a much bigger challenge. And unfortunately, for IT guys, they don't increase their manpower. It stays the same, but the amount of devices that you need to solve, to take care of is growing exponentially. So I think Assurance is one of the easiest way to start with the Cisco DNA intent-based networking.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

And if people want to find out a bit more about that, where would they go within the show to kind of...

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**Unidentified Company Representative**

Well, you can go to the enterprise networking, the campus there. There you'll see the demos, how it's actually done in real world. Definitely worth a visit.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

And you 2 going to be reunited? Is it Wednesday?

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**Unidentified Company Representative**

Yes, we're going to have a PSO session. We're going to go a little bit more in-depth over there, we're going to show some -- the real world, how things are happening. So you're more than welcome. Wednesday, to join our PSO session, there are going to be like 300 people there. So looking forward.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Brilliant. And where does that take place?

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**Unidentified Company Representative**

It's on the entry of the World of Solutions, I think, on the right-hand side, if I'm not mistaken.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Okay, brilliant. And [tonight,] I want to open up to any questions from the floor. We've got a microphone at the back. If you just put your hand up if you've got any questions for the chat?

You'll stay thorough. Have you got a question?

Thank you.





**Unidentified Participant**

Thank you. Could you just explain the differences between Cisco Prime and DNA Center? This is my first question. And the second question is, how backward comparable is DNA Center in terms of whether customer has older wireless controllers WLCs, can they still manage using DNA Center. These are my 2 questions.

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**Unidentified Company Representative**

So in terms of the second question, I can't tell you exactly from which version, but definitely all the Catalyst 9000, et cetera, it works perfectly. If you go beforehand, you might need to do some upgrades to be able to have the full capabilities of the DNA Assurance. But we need to take it offline to see exactly which versions and which products you have out there.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

There was second part of the question, (inaudible).

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**Unidentified Company Representative**

Remind me the question again.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Oh, sorry, you have the microphone again.

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**Unidentified Company Representative**

Yes. So the advantage of the Cisco DNA is that it's a complete solution out there. You have the SDA, you have the Assurance, you have everything there. Whereas Prime was initially just of getting information and getting that data from it. So I would say if I was now an IT manager,

Your way forward is going to be with DNAs because you're getting all the features out there but much, much more.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Lovely. Any other questions for Hans and (inaudible)?

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**Unidentified Participant**

So Hans, are you looking at -- we just came from the NRF, where a lot of the showcasing of some of the technologies that people are starting to really use in the retail environment. So from a perspective of the people that are actually running the stores, are they looking at doing things like -- what are the things you're looking at doing? Like any dwell-time-type analytics, any of the stocking analytics or even the price changing, right? In big stores, like yours, those kind of things are time-consuming too, where, hey, can I use this network to do the automatically update. There's applications now that will allow me to update my pricing like instantaneously or change my pricing. Are the people running the stores, looking at those kind of future cost saving applications?

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**Unidentified Participant**

Yes, we are already looking at the DNA Spaces.

So that's something we can use on top of DNA. And we are just about to deploy DNA Spaces in several stores in Austria, especially to use it for analytics. There are some brands who only want to use it for presence of a customer. We already had a request from one of our biggest brand, because they want to do indoor navigation. So that's for sure, harder than to do presence and some analytics stuff, yes? But there are requests, and we are working on this.

**Unidentified Participant**

Yes, that's great. So (inaudible) now that we heard that. So DNA Spaces, and how does that relate to DNA Center, DNA Assurance and kind of Hans said, you put it on top. So can you kind of explain how that works?

**Unidentified Company Representative**

Yes. DNA Spaces, in essence, we're saying, why just connect? Why not leverage the location of people? So I'll give you an example, if I'm a company who has a retail or even a shopping mall and I'd like to see exactly where my customers are going. Or if I want to have them connect and then say, hey, there is a special prices if you go to a specific location. And this is really what DNA Spaces is all about. It's really giving intelligence in that you'll be able to first understand and learn in manufacturing or even in retailing, in hospitals, all these places, we can get so much more of the network and then just connectivity and understanding where people are going. Retail is a very strong thing, especially if you -- you want to see what's working and what's not working.

And that's exactly what DNA Spaces is all about. It really gives you understanding knowledge, and it can also be a 2-way relations with customers on how to do more with your network and your spaces. And so if I go to the part earlier of the company, I want to make money, I want to save money, stay out of trouble. So here, that's also being able to do make more money, to really understand more, to have a better relations with customers and, therefore, be able to do more in the business with that.

**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Brilliant. Thank you. Any other questions from the floor? Well, please join me in thanking Hans and (inaudible). That was really, really insightful. Thank you for sharing your experiences.

**PRESENTATION**

**Steve Multer;Chief Storytelling Officer**

Remember to keep reaching out to us using the #CLEUR. We are in our sponsorship segment here at the show. We are back with NetApp and one of my very favorite people to speak with, not only at NetApp, but also here at these shows. So glad to have Lee Howard here with us, Chief Technology Officer for FlexPod. Welcome back my friend.

**Lee Howard;NetApp;CTO**

Steve, I've got to say, you look very dapper for the birthday celebration that we're here at. It's 10 years of UCS. We've got a decade of FlexPod going forward. That's a wonderful birthday suit, we'll call it.

**Steve Multer;Chief Storytelling Officer**

A birthday suit. I think you and I are both in our birthday suits...

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**Lee Howard;NetApp;CTO**

Absolutely.

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## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

And a little bit snazzy as well. This show just took an entirely strange turn.

All right. So I want to congratulate you first for everything that you've been doing here at the show. Whenever you and I get the opportunity to get together and talk, we always start out by marveling at the lifespan of FlexPod. I was mentioning it a moment ago here with Adam as well. It's really quite remarkable. And I asked him why it has lasted as long as it has. So much long-term success. And I want to ask you that same question.

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**Lee Howard;NetApp;CTO**

Well, I think it's largely because this is a, I would say, the industry premier platform for innovation. We couldn't have been here had it not been for our partnership with Cisco. We couldn't have been here had it not been for our partners, being able to go out and take this platform, wrap their business around this so that they're able to develop proficiencies, differentiate their own offerings. And I think at the end of the day, the person that really benefits is the end-user customer out there.

We've got over 6,000 petabytes that have been sold of capacity. It's a \$13.8 billion business that we've done and continuing to grow. I wish my kids at 10 will have a lifetime earnings of \$13.8 billion, but it may not be in the cards yet.

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**Steve Multer;Chief Storytelling Officer**

Yes. May not yet.

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**Lee Howard;NetApp;CTO**

A little bit of a slow start.

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**Steve Multer;Chief Storytelling Officer**

No, I already get the sense. Your son is 18 months. I think he's going to be brilliant. I think he's going to make it.

Digital transformation is really at the heart of all of this. As we continue to transform not only the industry, but organizations start to transform the way they do business, everything from their data center, all the way on down through the stack. How is FlexPod approaching that and helping them to get where they need to go?

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**Lee Howard;NetApp;CTO**

Well, I mean, you look at the 170-plus CBDs that we have on record. I mean it's the most that you have out of any combined technology within Cisco, and that 250-plus person years of engineering that has gone into that has really allowed us to differentiate where you're diversifying out the business risk of choosing FlexPod. All the remediation testing that we do, all the interline. As a new firmware for one of the components comes out, say a Nexus switch, we're going to be able to tell you, here's what your upgrade path is going to be, so you're not, as a customer, having to do that. It's peace of mind for the partner. It's peace of mind for the customer.

And I think where we differentiate ourselves, we're not really focusing on doing a tech refresh. That doesn't help anybody. We're out of the business of workloads. We're focusing on workflows. And that's adding in the human element and I think the way that people interface with their data. They -- as you can see, they've trusted the data with us. We're setting our cadence of innovation on quality-of-life improvements. I mean look at what we're doing with Intersight integration, being able to have visualization into the environments, pulling in AppDynamics, pulling in CWOM. What we're doing with our OCI platform, it's a collaborative environment where everybody is bringing their best-of-breed innovation to bear, and the customers and the partners are the beneficiaries of that.

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**Steve Multer;Chief Storytelling Officer**

So beautifully put. That's a lot of what Liz and Danny were talking about up in the keynote yesterday, into the first innovations talk as well, and it all connects together.

What's next? You and I are going to talk to each other again in June, when we're together in Las Vegas. What is next for FlexPod? Where are we headed from here?

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**Lee Howard;NetApp;CTO**

I think you're looking at we've got [perform] taken care of. I think Cisco really does a good way of rationalizing the environment. Your databases, we're going to have a huge industry disruption of those in the next 18 months. 47% of SQL installs, 40% of Oracle installs, so that core bread and butter workload that FlexPod's always been a part of, we're going to have a huge disruptive refresh.

But instead of just going in and looking at that specific database, how can we expand beyond that, genomic workloads where we're doing life-changing elements, not just on allowing children to be able to come in and have cancer treatments where they couldn't come in because the dye contrast was too radioactive. We're increasing the clarity on lenses within hospitals to do this. And then taking those same genomic lessons, we're applying it to agriculture, drought-resistant wheat, so that we can feed the world. I mean that's what gets me up in the morning, is designing, architecting is fun, but whenever you see that ripple effect, the labor that we're putting in, those engineers that are coming and building this technology for us, that ripple effect is really what keeps me thriving and keeps me excited.

So a lot of AIML work you're going to see coming forward. And again, bringing in IoT to the forefront. I think Liz, in her new position, where she's covering both UCS, IoT and the cloud business, this is how you deliver real-time innovation to your customers. This is how you put that data to work for you, the lifeblood of your business, that's how you bring it to bear. So it's an innovation center, not a cost center within IT.

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**Steve Multer;Chief Storytelling Officer**

I just decided, while you were talking right there, that I need to keep you with me right here on set for the entire rest of the day. You gave me about 30 different things that I want to dive into. And I wish we had the time to do it. Maybe you want to -- we have to do it offline, and then we'll share it with other people at different times.

**Lee Howard;NetApp;CTO**

Absolutely. That sounds great, Steve.

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**Steve Multer;Chief Storytelling Officer**

Lee, thank you so much. I always love the opportunity to talk with you. I look forward to doing more of it. And congratulations again to NetApp, and thank you, again, for that platinum sponsorship.

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**Lee Howard;NetApp;CTO**

Right. We're here for you, Steve. I really do appreciate it.

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**Steve Multer;Chief Storytelling Officer**

You are indeed in so many different ways.

(Break)

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## PRESENTATION

**David dela Cruz;Commercial Account Manager**

Hi, everyone, and welcome back to the Cisco TV studio here at Cisco Live in Barcelona. We've just wrapped up the enterprise networks' AdvoChat. And now we're now shifting gear to one of my favorite topics because I used to work in this customer segment at Cisco for the last 4.5 years, and it's where I started at Cisco, grew up, so to speak, and that is SMB or Small Business. Really looking forward to having a chat now. We've got 2 great panelists, so experts in this field.

I've got Hema Marshall, who heads up Small Business for UKI at Cisco, and also joined by Richard Oliver, the General Manager of IT and Managed Service -- sorry, Senior Manager of IT, SDN and Cloud at British Telecom.

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

Good morning.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Good morning.

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## QUESTIONS AND ANSWERS

**David dela Cruz;Commercial Account Manager**

Welcome to the show, guys. So we're going to chat a lot about Small Business today, but I want to get straight into your questions because we've got a lot to talk about, I think. We know that Small Business has been very big this week at Cisco Live. There's been a lot of buzz around the escape



room where we actually tried to get out of as well. We struggled a little bit with it. It's trickier than it looked. And you've been talking a lot about the Cisco Designed portfolio, which I think is a new term for a lot of people. How is Cisco Designed changing the game for Cisco, in general, and also Small Business as a whole?

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**Hema Marshall; Director, Small Business and Inclusion and Diversity Officer**

Yes. So Cisco Designed is our new brand for Small Business. And actually, is a huge game changer. If you think about the world economy, 2/3 of the workforce actually are employed by small businesses. Their turnover in the private sector, I think it's something like 6 trillion, and so you have this energy around small businesses. But also, if you think about keystone, they're the keystone for every economy, right? So you've got small businesses -- in the U.K. last year, they said that every 5 -- every hour, there were 5 new small businesses being born. So it is a huge underpinning of every economy and every organization. And I think this is a big game changer for Cisco because we've gone from enterprise to much more around a holistic view of our customers, both small, medium and large.

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**David dela Cruz; Commercial Account Manager**

Yes. Awesome. Richard, you've got an interesting perspective, I think, on this because you're a partner and BT has such a broad sales base, I guess, across Small Business as well. IDC actually did a really good report called the FutureScape: Worldwide SMB 2019 Predictions report, and that said that 2/3 of SMBs have digital transformation as a key part of their strategy by 2023, which is quite a surprising statistic because you don't really think about small businesses transforming digitally per se.

It's key, I think, for both us and partners to have an offering that specifically addresses the SMB market. But from the BT perspective, what are you seeing happening with the Small Business customers in the U.K.? Is this a trend you're seeing reflected there as well?

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**Richard Oliver; British Telecom; General Manager, IT & Managed Services Portfolio**

Sure. Yes, firstly, thanks for the invite to come along and talk to you. Yes, so in BT, in our U.K. enterprise division, we specifically focus on the small sector. And predominantly, what we're doing is taking a lot of the learnings that we're seeing in larger organizations, a lot of the concepts that they're trying to drive, but really package that in a way that small customers who haven't got the direct skills themselves, they haven't -- they want to focus on what they do great. We really want to take all of that technology, package it specifically, working with Cisco, working with the way that you're simplifying your technology and kind of bring that all together.

So absolutely, our customers, they want to be able to drive the change that they see across the industry, but they clearly need partners and technology to be much more integrated, much more simpler for them, so they can do what they do best. So we really focus on bringing all of that together with them.

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**David dela Cruz; Commercial Account Manager**

Yes, absolutely. And I think the competition, especially amongst SMBs, is incredibly fair. So anything that we can do to sort of help them along on that journey, I think, is fantastic.

To both of you, either -- maybe best if you start the answer, and then you might be able to add some color as well, Hema. The same report also said that in -- by 2021, 60% of SMBs worldwide will use alternative channels to procure or to get advice on some of their technology decisions, including various service providers. I'm sure BT is also one of them.

What are the benefits to Small Business customers to working with a service provider such as a BT or similar ones in other countries?

**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

Yes, I think the thing we're focusing on is that the customers, they focus on what they do best and they want outcomes. So I think the role that we have got is to understand their outcomes and turn that into a solution and a service. So I think as they look to technology, what they don't want to be is technologists in terms of IT. What they want is actually to turn to partners and providers who understand where they're trying to be, understand what they're trying to achieve and be able to present that in a way that they say, "Right. Great. I can see the outcome of technology." So I think that's our role broadly.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Yes. And I think the various channels is really important. We have to start with what the customer wants and the heart of the customer. And we've got to give them choice. So partners and service providers provide something that is a solution to Small Business. They provide locality in a lot of locations. They provide much more of a value-add to those small businesses and small customers. And I think it is important to ensure that we provide that choice to our customers. We can't just get them down one route. So some customers want to buy online. Some customers want it to be part of the service provider package. Some partners want it -- some customers, sorry, want to buy from local partners.

So our channel and our route to market is critical to the success of those businesses and Cisco.

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**David dela Cruz;Commercial Account Manager**

Yes, absolutely. I think the -- and larger enterprise customers, obviously, have the benefit of maybe having a direct connection with Cisco, they can get advice from a Cisco expert, but some of these small businesses may not have that ability to connect with Cisco directly. So having a great partner, they can give them great advice on technology and how to use it to better their business. And I think, Richard, you said it's really about giving the -- managing the technology to an extent where the customer can just focus on doing what's best for them, focus on their own business, right?

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

Yes, we know they're not experts, but they know where they wanted to go. They know what they wanted to be. What they don't want is to spend their energy building the technology that can provide the outcome, our job at Cisco and BT. So then when we're providing solutions is to be where they are, as you say, whether that's digitally. We run local franchises, so we can be in the high street, we can be around the country with them and really kind of create solutions that they can package and bundle. It's all about repeatable. They don't want the complexity. Our job is to take that away, package solutions that they can present to their business that drives that digital change.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Yes. And I would also say that, actually, it is a direct relationship with Cisco because our channel and our routes to market are an extension of their Cisco world. And actually, we couldn't go to market without them. So I would say that by working with service providers or local partners or e-comms, you are actually getting that connection with Cisco in a much more agile, quick, speedy way, and it isn't cumbersome. And then you get that twist on how you actually go to market.

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**David dela Cruz;Commercial Account Manager**

Yes, perfect. Now I think a big white elephant question is that, that bizarre contraption that you guys have got sitting in front of you there. So I've been told you've brought a hook-a-duck game. So you've got some ducks in there with some interesting statistics. But I think there's probably a perception out there in the market that Cisco is very enterprise-focused. I know we've been doing our best at this show and also through other



Cisco Lives in the content that we're sending out online as well to change that perception, but I think there's still a lot of common myths floating around, right, around how Cisco works, what our products are like and that sort of thing.

So yes, let's try and bust some of those myths, I guess.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Right. So there is an old saying in TV, never work with animals, children and now plastic ducks because this is going to be [really just messy].

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

Let's give it a go though.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

So we thought it would be a good idea to try this on the basis that what we're actually trying to do is we're trying to [hit] a market, right? So let me see if I can do this. It's a car, and we're going to pick it up.

But you know what, I've packed. Well done.

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

You've got it.

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**David dela Cruz;Commercial Account Manager**

Hey, you've got it.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

And I've gone the wrong way.

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**David dela Cruz;Commercial Account Manager**

So was it harder, [unlike what this is?]

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

So let's have a look at the first one. So the first one is Cisco is too big. But you know what, I think there is this perception that Cisco is too big. Actually, big is good. So if you think about it, for small businesses, they have a \$50 billion safety net, which is good. And there are some really interesting things that even I found out today. So every single Cisco device that is security and product actually has AI and machine learning built in it because it goes up to Talos and Talos delivers that intelligence back. That is a fantastic safety net for small customers. And actually, big also means that we can work with small customers to innovate and disrupt the market.



And I think it's a co-relationship, and we've all heard the term, co-creation, and I think that's what big and small and medium do together. Right, b(expletive)?

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

Right. My turn. Okay. Let me give it a go. Okay. Left-handed here.

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**David dela Cruz;Commercial Account Manager**

Are you normally left-handed, Richard?

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

No, I'm right-handed, but...

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**David dela Cruz;Commercial Account Manager**

Well, I've given you an extra challenge.

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

Yes, you gave me a challenge here left-handed. Now I'm going to pick it up.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Back.

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

So the second one, complicated. So if I kind of give a perspective from being a partner, so we work with many technologies, but we spend a lot of time working with Cisco and Meraki. So Meraki was a partner that we've been working with now for over 3 years as part of the Cisco acquisition. And what they really did as a partnership is that they enabled us to move away from integrating technology. Cisco and Meraki have really got that simplifying technology, bringing it together, focusing on the customer experience. And I think that when we bring that together with our organization, and we look at how we're simplifying the network, our job starts with the customer. Our job is to simplify all of that. So I think what we've got going now between us is with what you're doing with Cisco and Meraki, which is creating a suite of solutions right across the Small Business sector. They really can have a solution that's integrated. It works together. We can build into our networks, both fixed and mobile. And so we've really kind of busted that complexity in my mind.

And feedback from customers is great. We've seen huge growth in customers taking not just one product, and then they have the job of bringing it together, they're saying, well, look, how do we start taking more of these products, so we're selling networks, plus security, plus LAN, plus Wi-Fi. These things were really complicated for us and customers in the past. And I think we've done a great job of bringing that together. And I just see that growing and strengthening, and the customer feedback is awesome.

**David dela Cruz;Commercial Account Manager**

Yes, I think that's a great point. I mean Meraki, especially, is a great solution, I think, for a lot of SMB customers. If you didn't catch the Meraki session yesterday, there is an opportunity to stream those on [ciscolive.com](https://ciscolive.com), so our guests back home can have a look at the latest and greatest in Meraki as well.

The -- yes, you guys have got one more duck, right? How are we looking for ducks?

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

We've got one more duck.

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**David dela Cruz;Commercial Account Manager**

You're going to fish that one out as well?

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

And unfairly, that will be a 2-1 to me.

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

Yes, I'm going to say this could be embarrassing when you go straight in and get the third one.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

No. So the third one is -- the third one is expensive. It has a really interesting conception here around expense. And actually, if you think about the Cisco Designed portfolio that is being designed and created specifically for small businesses, we have a portfolio that actually expands all levels of dollar value, shall we say.

Now what's really interesting is that we can now, if it's \$1,000 and above, we can now actually provide Cisco capital. So the technology that you buy has been very similar to when you buy a sofa or a car, you can do it on 0% over 36 months. So we don't think it's expensive. And actually, if you think about the value that service providers add to that in terms of that product and that value and the ability to be connected to broadband, have the network visibility, have security and be able to collaborate with your customers, suddenly, you have a solution that actually is probably much cheaper than most technologies.

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

Yes. And what I would add to that is that, that is a classic myth, right? So we -- when we talk to customers, expense is the one that you think you're going to see. And actually, what they're looking for is how it drives value, right? So it's actually how you can present the solution with value, right?

So we are taking Cisco technology, certainly, and we build it in, so it's a monthly bill. It is about -- it's how they can understand the way that they're consuming the number of people they've got, the number of sites that they've got, the types of infrastructure that they're using. So actually, expense in my mind means that you haven't really understood the problem that the customer is trying to solve and you haven't been able to present the value of that back to them basically.



**David dela Cruz;Commercial Account Manager**

Absolutely. I mean it's like the old analogy of buying one GBP 300 pair of boots or buying 8 GBP 50 pairs of boots, right? I mean it's about -- maybe there is a smaller investment -- a larger investment, sorry, upfront, but the value pays off in the longevity and the benefits that you get a solution and the hidden costs that aren't there. Absolutely.

You guys got any more ducks? Or are we...

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

No. We're done with the ducks, I think.

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

All right, ducks.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

I'm a bit worried about them.

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**David dela Cruz;Commercial Account Manager**

You've caught them all. That's fantastic. So Richard, thank you so much for being on the show.

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**Richard Oliver;British Telecom;General Manager, IT & Managed Services Portfolio**

No problem.

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**David dela Cruz;Commercial Account Manager**

I think we're going to transition to a different topic that's also incredibly, incredibly important for small businesses, which is the topic of cybersecurity. I think a lot of small businesses think that it's just one of these things that only affects the big guys, I'm not a target, that sort of thing. But it is definitely, definitely important. If you do want to learn more about Small Business, Meraki or any of the solutions that were mentioned today, please go to [cisco.com/go/sales](https://cisco.com/go/sales), and you will be connected with an expert in your region that can talk to you about those topics.

And Hema and I are now joined by a new guest, which is James Lee, our Global Commercial and Small Business Security Lead from Cisco. James, thank you so much for being here.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

Good morning, David. Excited to be here.

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**David dela Cruz;Commercial Account Manager**

I'm glad you're here because we have more ducks to catch, I believe.



**James Lee;WW Commercial Mid-Market, Small Business Lead**

I love this. So fishing is so topical in the security industry right now. This is genius.

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**David dela Cruz;Commercial Account Manager**

Yes because we have that great term don't we called fish pond, which is exactly what you've got in front of you. And a fish pond is somewhere where you learn about security problems, and that's what we're going to do today.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Yes.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

Indeed, looking forward to it.

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**David dela Cruz;Commercial Account Manager**

It's perfectly on topic. Awesome. So yes, why don't you guys start trying to fish out these ducks, and we'll have a chat about what...

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

I notice that my ducks are significantly smaller than the previous guest's ducks. Is there any reason for that? Or...

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Yes. We just thought we would make it harder because security is quite complicated.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

It's a little bit harder? Right. I'm going to pull that. I'm just -- you know what I'm going to do, I'm just going to pull my duck out because the left-hander, it's a challenge.

So 72%. Now this is a really interesting data point. So this is the percentage of Small Business customers that think they've been breached. And that is a staggering data point. But I worry about the 72% that have been breached. But I also worry about the 28% that don't think they've been breached but probably have. We talk about 2 types of customers in Cisco. Those that know they've been breached and know those that -- and those that think they're secure, but probably have been breached. Right?

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**David dela Cruz;Commercial Account Manager**

Just haven't discovered the breach yet.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

Exactly. Exactly. It's challenging times for these customers. And I think it's interesting. I was reflecting this morning on my working day and how that had transformed over the last 30 years. And I think that's a metaphor for how challenging it is for small companies to secure themselves. So when I started working back in 1993, my alarm used to be set at 7:30 in the morning, I'd get up, have breakfast, read the paper, get into the car, go to work and turn on my computer. And the first time the security person in my company needed to worry about me was at 8:59 when I got into the office. Now what's the first thing that you do in the morning?

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**David dela Cruz;Commercial Account Manager**

You look at your phone.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

You get your phone out. And so immediately, the security teams have got to create policy that secures you as a user wherever you are, whatever time of the day you're accessing data, whatever application you're connecting to, whatever device you're on. And the device challenge itself is kind of crazy. We think there will be somewhere between 20 billion and 30 billion devices connected to the Internet this year. And simply, that's between 20 billion and 30 billion different ways that the bad guys can hack into our customers. So...

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**David dela Cruz;Commercial Account Manager**

It almost sounds easy.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

It's challenging. It's challenging.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Yes. And I think it's really important to understand that 72% breach, that could wipe out small businesses.

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**David dela Cruz;Commercial Account Manager**

Absolutely.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Right? In terms of cost, in terms of people, in terms of asset. So I think that breach is really important to think about how do we then help those customers secure because you want to make sure that they're doing what they're doing best, and we're kind of at the back end, trying to make sure and protect them.

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**David dela Cruz;Commercial Account Manager**

Doing what we do best.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Exactly. Right. I am going to try that because...

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

Go for it.

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**David dela Cruz;Commercial Account Manager**

She was quite successful...

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

You're right-handed, you see. This has been designed for right-handed people.

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**David dela Cruz;Commercial Account Manager**

Look at that.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Little hands, as well.

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**David dela Cruz;Commercial Account Manager**

Absolute expert.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

2017.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

So 2017 is -- I mean I think what's interesting about the last 2 or 3 years, quite frankly, is that the challenges are getting more sophisticated, it's getting more difficult for our customers to deal with these threats. And we talked about 72% being the number of customers that have been attacked. I mean quite frankly, the industry isn't doing a good enough job in protecting our customers right now.

So we're at Cisco Live this week. In a couple of weeks' time, we have RSA, which is the world's biggest cybersecurity conference. There will be 600 vendors exhibiting at that conference. There are over 1,000 vendors in the cybersecurity industry, and the level of fragmentation in this industry is kind of crazy. And the reality is that you could deploy every single one of those vendors and you are still going to get breached.

And again, if I think back to when I started working, and I was reflecting on the antivirus industry, which is an interesting, kind of again, metaphor for the complexity, there were probably 4 or 5 different antivirus vendors back in 1993. Now there are 50. And securing the end point, securing the laptop is still a really big priority for our small customers. When we think about securing the enterprise, we talk about application security and workload security and all these kind of big concepts. For the small customers, it's simply, I think, to secure my end point and my laptop, and how





do I do that when there are such a huge number of end point vendors out there. We have to make things simpler for our customers. And that's something that we're putting a huge amount of focus on inside Cisco.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Yes. Yes.

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**David dela Cruz;Commercial Account Manager**

Cool. We're moving on to the next duck then.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

We are.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

Let's try again. She just does a better job...

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

I'm going to be the hook-a-duck expert by the end of the day, right?

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**David dela Cruz;Commercial Account Manager**

What have we got there?

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Right, James, this is an interesting one. 69%.

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**David dela Cruz;Commercial Account Manager**

So this is from the Ponemon Institute report, right?

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Right.

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**David dela Cruz;Commercial Account Manager**

69% of respondents said that cyber techs were becoming more targeted. What are the top 2 cyber attacks that was -- were in the report? And how can Cisco technology help prevent these?



**James Lee;WW Commercial Mid-Market, Small Business Lead**

Yes. I think -- so what do we see? We see that, in most cases, when small customers are being breached, it's coming from a phishing e-mail. Right? And a phishing e-mail, I'm...

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

He's got it in there.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

And phishing e-mails are getting ever more sophisticated. So the concept of a phishing e-mail is it's an e-mail that's, in some cases, very sophisticated, very targeted, designed to get you to click on a link and share your credentials with a hacker, who then uses those to log in, steal your identity and do his nefarious stuff.

And we now talk a lot in the industry about the bad guys are no longer hacking into our customers, they're logging into them using stolen credentials. And one of the interesting things about phishing e-mails is that technology alone can't solve those problems, right? I'm a big Arsenal fan, right, and I can guarantee the end of the transfer window is coming up on tomorrow, Friday. And I can guarantee if someone sent me an e-mail saying Lionel Messi is about to sign for Arsenal, I would be clicking on that link. I wouldn't even hesitate.

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**David dela Cruz;Commercial Account Manager**

And you wouldn't even hesitate. I'm in your history.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

And so some of these e-mails are so sophisticated. So I think, increasingly, and I had this conversation with customers, it's not just about technology. We need to do a better job in educating our customers on being a little bit more suspicious and a little bit more savvy on how they deal with some of these challenges. But at the same time, we can then give our customers fantastic technology that even if the bad guys do happen to steal our customers' credentials, and we hope they don't do that, technology like Duo, which is multifactor authentication, means that even if someone logs into your account using your details, that app, Duo is going to push a message through to your phone to make sure that you authenticate whether that connection was indeed valid or not.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

Yes.

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**David dela Cruz;Commercial Account Manager**

Perfect. I think -- is there one more duck? How are we looking for ducks?

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

There is. Look at that.

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**David dela Cruz;Commercial Account Manager**

Look at that.

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

How did you do that?

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**David dela Cruz;Commercial Account Manager**

Were you cheating?

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**Hema Marshall;Director, Small Business and Inclusion and Diversity Officer**

We do need to apologize to the audience for James being an Arsenal fan. But when Liverpool -- I'm a Liverpool fan.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

So you can make an R&B record, I'll be [right here]. So 16%. This is really top of mind. Only 16% of customers are seeing an improvement in the time it takes for them to detect a breach. And this is a very simple challenge, but one that was really top of mind.

So picture this, right? So I'm on CNN. I see a news article and it talks -- and it says the new Hema virus has hit the world, and customers globally are being hit by this. So I'm going to call you up, Hema, I'm going to say, "Hema, I just read about the Hema virus on CNN. Have you been hit by it? Are you safe?" And the answer is you don't know.

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**David dela Cruz;Commercial Account Manager**

And why is it so difficult for them to detect these breeches?

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

Because I talked about the complexity of the products earlier. There are so many products. We have e-mail security products, we have firewalls, we have end point security solutions, and they just aren't the platforms in the industry that are aggregating these technologies together to allow customers to understand whether they have been breached. We have a beautiful product in Cisco called CTR, Cisco Threat Response. And it takes [thieves] from a number of products.

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**David dela Cruz;Commercial Account Manager**

From my laptop.

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**James Lee;WW Commercial Mid-Market, Small Business Lead**

Brilliant. And it allows customers very simply to find -- to go online and find what we call indicators or compromises, which are file hashes, post them into a browser, hit search, and it will tell you where our -- where is our advanced malware protection technology seeing that breach, where is our e-mail security technology seeing that breach, where have our proxies seen that breach, bringing it together in a central console.



And that's a very simple concept, but one that the industry historically has done a pretty lousy job in, in dealing with. So we're pretty excited about bringing CTR into the market, which is happening right now. And it's something that absolutely scales all the way down into some of our smaller customers. And that's relevant because with a big talent gap in the industry, so there are about 2 million vacancies globally in cybersecurity, so if we can give our customers simpler tools to understand when they've been breached, we're going to address some of those talent gaps that's -- that cause the market so many challenges right now.

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**Hema Marshall; Director, Small Business and Inclusion and Diversity Officer**

Yes. And it's got more sophisticated, right? Breaches, hackers have got more sophisticated. And I think that's what I mentioned earlier in the earlier segment, is around AI and machine learning and our Talos portfolio.

But for small businesses, we have everything from 2-factor authentication to Umbrella and Duo to AMP, in case somebody comes in and plugs in a USB. So we've got that portfolio end-to-end. It does get more sophisticated. And as things get more sophisticated from a hacker's point of view, we get more sophisticated with our AI and machine learning to ensure that we try and stop those breaches.

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**David dela Cruz; Commercial Account Manager**

Absolutely. And that's a great note to end on. Thank you so much for both of your time.

If you do want to learn more about this, we've had a lot of great sessions here at Cisco Live on security. You've heard it here, the bad guys are getting better at being bad. And -- but Cisco is catching up and delivering some great solutions for all sizes of businesses. We're now heading over to the AppDynamics Innovation Talk with Danny Winokur. Stick with us.

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## PRESENTATION

**Steve Multer; Chief Storytelling Officer**

Our next sponsor here during this particular segment is -- Cisco customer experience and Cisco CX has been right out of the gate. So it's a powerful, powerful conversation. Here at the show CX is delivering all those outcomes that business really demands in this hyper-connected digital world. It's all about the digital transformation. There's a lot of challenge and risk in it, but of course, what's happening with CX, it's a life cycle approach. It touches across so many different aspects of our Cisco portfolio, and we're really excited to talk about it right now. So I should introduce who I have with me, Phil Wolfenden here, our VP of Customer Experience Centers in EMEAR. And I'm especially excited to have Menna Ayad here with us, a consulting engineer for CX EMEAR. And also, I need to let all of you know, Menna is the youngest CCIE that we have in Africa. And that's really incredibly cool. And I wanted to make sure that we got that in. So welcome, guys. Thank you so much and glad to have you with us.

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**Phil Wolfenden; Vice President Customer Experience**

Thank you for having us.

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## QUESTIONS AND ANSWERS

**Steve Multer; Chief Storytelling Officer**

So Phil, let's talk about right out of the gate at the keynote yesterday, CX, a big part of the story. And maybe for the first time at one of our Cisco lives where CX takes such a front seat at the event. How exciting was that for you after all the years that you've put in to build this up?



**Phil Wolfenden;Vice President Customer Experience**

Yes. And you and I have talked most years about this exact thing, Steve. So in previous years, I remember coming and saying, yes, we're incrementally stepping forward. We're getting a little bit more famous in the company. We had to mention some time on the third day.

This year, it's taken a huge leap forward. It's like we have -- we're now part of the company strategy. And honestly, that's -- I've been here longer than I care to inform everybody. This is the very...

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**Steve Multer;Chief Storytelling Officer**

Twenty years by the way, I should say. Twenty years building this up.

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**Phil Wolfenden;Vice President Customer Experience**

Indeed, indeed. And it's the most traction, the most airtime and the most relevance we've had at a company level ever.

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**Steve Multer;Chief Storytelling Officer**

It's really incredibly exciting. Menna, you heard Alistair talking yesterday, that CX is really a people business. What does he mean by that? What do you mean by that when we talk about this as being a people-focused business?

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**Menna Ayad;Consulting Engineer**

Yes. So I totally agree with Alistair that CX is a people business. And I'm really happy to be part of this organization. As it shares the same value as what I value the most, which is caring about people. So I think that CX have a pool of diverse talent, which not only bring technical experience to the customers and partners, but also take them through the great customer experience, which aims at achieving the customer success. So what I personally do at CX, is that I am a consulting engineer. So I love to be part of the customer success journey, which starts from gathering the requirements and then putting the design based on this requirements and then implementing and testing this new design environment. At the end, I believe that CX -- that we built, [I would say] success portfolio based upon our customers and partner success.

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**Steve Multer;Chief Storytelling Officer**

Which is really so perfectly put. I don't think you could have encapsulated it any better. To me, and I always talk about this, this goes to the heart of who we are at Cisco. As much technologies we want to talk about is great, we've got the tech. Everybody can go and check it out for themselves. But it's sometimes very hard for people to understand who we are as a corporate culture? How we feel about our customers? Are they getting it? Do they understand what is available to them through the CX offering?

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**Phil Wolfenden;Vice President Customer Experience**

I don't know is the answer. I hope they do.

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**Steve Multer;Chief Storytelling Officer**

I mean, when you walk around the show floor like this, what are the responses that you get?



**Phil Wolfenden;Vice President Customer Experience**

Well, I heard some stats yesterday. So for those who haven't seen it, World of Solutions, you go in, there's a CX stand right there in front of you. And it's enormous.

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**Steve Multer;Chief Storytelling Officer**

It tells you, the fact that it's right upfront, that tells you all what you need to know.

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**Phil Wolfenden;Vice President Customer Experience**

There you go. So go visit that. I was told yesterday, unofficially, the CX stand was the second busiest in World of Solution where we were only beaten by Collaboration, but they cheated because they were giving away the device.

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**Steve Multer;Chief Storytelling Officer**

We didn't say that live on the air, never mind.

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**Phil Wolfenden;Vice President Customer Experience**

There we go. So if we're all playing fair, then the CX stand was the most popular in World Of Solutions, and that's amazing.

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**Steve Multer;Chief Storytelling Officer**

All right. So that does mean that people are starting to get the story. They know what's available. What about visits to the CX centers?

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**Phil Wolfenden;Vice President Customer Experience**

So the engagement levels that we have are just going off the chart. And the strategy we have now about managing people around that life cycle and delivering business value that they define, we don't define what they want from the solution. The customers define what they want from the solution. The impact we're having of escorting them a white glove service, escorting them around that life cycle to those objectives, is having tremendous impact. And we're so busy. We talked about it being a people business. Honestly, I can't hire people fast enough. There aren't that many talented people in the world right now for me to be able to hire them all. So it's going great.

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**Steve Multer;Chief Storytelling Officer**

What a wonderful problem to have. And then, I think that sort of puts you into rarified air. The fact that you are actually in the door. You're still fairly new to the team here at this point. What has the Cisco experience been like being a part of this particular organization and what it tries to accomplish?

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**Menna Ayad;Consulting Engineer**

Yes. So after graduation from the University, actually I started in one of the CX centers in Krakow, Poland for 6 months. And actually I started my (inaudible) journey from scratch in the CX center. And we started there to become (inaudible), in routing and switching. And then I wanted to understand things deeper. So I went for this CCMP, which is the professional level. And then the CCIE. And all of my studying materials was from the online learning platforms of Cisco. So I think as a graduate within 1.5 years to start from scratch at Cisco. And then using the CX Services Academy



programs and the online learning platform is a great example. And I really encourage every graduate to join this as the expedited program because you're not only learn the technical knowledge, but you will also like gain the connections and bonds will all of our new colleagues from the region, which will last along this career. And I believe at Cisco, if you like to learn, it's not only for young graduates, it's for everyone. And if you would want to learn and develop all of the -- like the -- everything is available for you.

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**Steve Multer;Chief Storytelling Officer**

Opportunity, opportunity. By the way, I don't want to miss mentioning that yesterday, CX posted out one of the coolest videos that I've seen in a while from New Castle. Their implementation of what was happening in CX. And I was just really impressed with it. For those of you who haven't seen it, it's again all about that digital transformation story. Finding better outcomes for local residents in New Castle, better cost savings, making sure that the area is known for tech innovation. And to me, that speaks to so much of what CX is trying to accomplish. So congratulations on that, and go check out that video again from the New Castle City Council. Phil, Menna, thank you. I'm really, really glad to have you guys in here with me. I'm glad to be able to hear this story. Thank you for the sponsorship. Congratulations on the success. I do hope we get a lot more opportunity to talk with one another.

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**Phil Wolfenden;Vice President Customer Experience**

Hopefully so. Thank you, Steve.

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**Menna Ayad;Consulting Engineer**

Thank you so much.

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**Steve Multer;Chief Storytelling Officer**

Thank you, guys. It's been a pleasure. All right. So now we have got a short video, very short video that we're going to play for you that helps sort of take you on that customer journey. Enjoy the video. We're going to see you back here in just a little over 20 seconds. We'll be back shortly.

(presentation)

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## PRESENTATION

**Nish Parkar;Cybersecurity Communications Manager**

Hi there. We're here at Cisco Live Barcelona 2020, and we're talking collaboration. The collaboration has had a massive feature right across the show, we saw it in the keynote. And for me, it's one of the favorite things and favorite topics to talk about. But this technology, you actually can get your hands on, touch and feel, and it changes the way that people work, live, pay and learn. So collaboration is specifically work pay transformation gets more and more focused all the time. And that's especially relevant now more than ever because there are 5 different generations of people in the workforce. So this means people who are -- solutions that are flexible, minimum constraints, smarter options and free from things like meetings, things like contact centers, especially with the focus on customer experience. And so with that, of course, we need IT to be secure, we need it to be reliable, we need it to be scalable. And that's why there are so many customers here at Cisco Live Barcelona, taking a look at some of the solutions and getting to understand some of the WebEx portfolio a little bit further. So to see this all in action, let's take a look at this really short video, all about collaboration and how it's helping transform the workplace in Singapore.

(presentation)



**David dela Cruz;Commercial Account Manager**

We just saw how Cisco is transforming our own workplaces with the example of the beautiful new office in Singapore. Let me tell you, our office in Düsseldorf was just transformed, and it is now a beautiful place to work. Transforming the workplace as a part of empowering teams to do the best work that they can, which is one of the ways that Cisco helps our customers and also a key pillar of Cisco's overall strategy. So we want to talk about this topic a little bit more. And I'm joined by a great guest Scott Edwards, who's a senior Director of Collaboration Solutions Marketing at Cisco. Hi, Scott, thank you for being on the show.

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**Scott Edwards;Sr. Director, Product Marketing**

Yes. Thanks, David. Thanks for having us. And I love that video that we just saw on the Singapore transformation. We're hearing that a lot from our customers that they need to transform, for sure.

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**QUESTIONS AND ANSWERS**

**David dela Cruz;Commercial Account Manager**

Absolutely. So talk to me about some of the new things that Cisco is doing to enable these frictionless work experiences.

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**Scott Edwards;Sr. Director, Product Marketing**

And just going back to the workplace transformation, and it's all about people. We're seeing more and more, the company's need to innovate, they feel that pressure to innovate. But they look at collaboration as the tool to enable that. And sometimes, the collaboration experiences between those employees as well as the customers aren't very good. You have to be able to empower the employees to have a fantastic, frictionless experience when they communicate with each other. And that's what you see as part of that Cisco Singapore office. They look at the work styles, they looked at the workspaces and then how they integrate -- how they work with the tool sets they work with to make sure that they can transform and be stronger and better at what they do.

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**David dela Cruz;Commercial Account Manager**

Well, I hope I get the chance to check it out in person. Unfortunately, we don't get over to Singapore that often. Just a couple of months ago, Cisco introduced this concept of a single collaboration platform. And the benefits that brings to IT and the users. Can you tell us a little bit more about what that looks like? And how it works? And why it's important for customers to know?

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**Scott Edwards;Sr. Director, Product Marketing**

Yes, we talked about the single platform advantage, and why that's important. Again, how people communicate, and how they work with the tools and work with each other. It used to be that IT had to stitch together a variety of different applications, right? Calling and messaging and meeting applications. That's friction. That's a hard thing, and they had a hard and not a very good experience when they would interact with those tools. With this idea and the concept of the single platform advantage, we're stitching together all that technology. So it's a seamless experience for the users. So no matter where I work throughout the day, right? If I start my day in the coffee shop, if I move to a home office, if I go into work, this should be the exact same experience. And you think about it from an IT perspective, they want to be able to manage everything from a single spot and a single location. That's critical. Now what we do with the WebEx control hub is we enable that.

And I'd like to show you exactly kind of how that works in the control hub of managing it all together. So here's an overview of our control hub. And what you see here is, as I mentioned, you get to see messaging, I get to see team collaboration, I get to see calling, I get to see my hybrid



services, whether I'm on-prem or in the cloud and the integration between that. I get to see all the different devices. It's all right here in the collaboration -- in the Cisco WebEx control hub. So I can see it all in one place. I can dive in to understand and get a better sense of, if there's an issue, what's wrong. I can troubleshoot and identify what the issue is with the devices or the users all right here in the control hub.

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**David dela Cruz;Commercial Account Manager**

Amazing. So thanks, great insight on what WebEx Controller can do. It looks like there's a lot of green check marks on there. So...

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**Scott Edwards;Sr. Director, Product Marketing**

It's all going well, yes.

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**David dela Cruz;Commercial Account Manager**

Everything going well. Awesome. So earlier, you talked about the importance of security at the collaboration. I think security, a lot -- in the past, it was much a silo topic, but it's definitely not pervasive across all types of technology that you deploy. Compliance and security, a huge topics have been big topics this week as well. How do you ensure that in this open world where everyone needs to be able to collaborate with each other?

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**Scott Edwards;Sr. Director, Product Marketing**

I mean, everyone know Cisco is built for security. From the ground up, security is our #1 focus point. And we have to make sure that happens. We call it collaboration without compromise. We don't compromise simplicity or ease of use, just to make that happen. We have to have security as a single point. You see this right here in the control hub, where I can come into settings, and I can ensure all my security policies right here, how I want to have every collaboration with my team, outside my team, if I'm doing external communications, how I can white list certain domains. So I can accept communications from those. All the different devices, I mean, it just goes on and on. All my cognitive intelligence, AI collaboration, I can set policy for those right here.

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**David dela Cruz;Commercial Account Manager**

Perfect and cognitive great key word because we do want to move on to that topic now. Let's wander over here because I think we've got another demo that you want to show.

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**Scott Edwards;Sr. Director, Product Marketing**

We do. We do. So we're going to wander, right?

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**David dela Cruz;Commercial Account Manager**

So as Cisco has been investing heavily in this area, cognitive collaboration, how does it fit within this unified platform that we're offering?

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**Scott Edwards;Sr. Director, Product Marketing**

It fits big, right? So we look at this as part of a key differentiator for us. Cognitive collaboration is something that brings intelligence into the platform. So let's walk around right here. We're going to go over into this booth. It's busy, it's a busy booth here. So that's what happens when you're on live TV. And I'm going to ask [Maurine], we're going to start this right now. So let's talk about cognitive collaboration. It is something that we want to

provide insights into every element of the platform that I talked about before. And we can then pull a bunch of insight and intelligence into that -- from that, and understand how we deliver the right information to the right people at the right time.

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**David dela Cruz;Commercial Account Manager**

And I hear there's some new things that you guys have announced in cognitive collaboration. Can you tell us a bit more about what those are? And maybe if you've got something to show us, that'd be awesome as well.

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**Scott Edwards;Sr. Director, Product Marketing**

Yes. So that's why we wanted to walk over here, right? So here we are at the WebEx meetings booth. And one of the things that we've announced this week is the integration of Voicea into our WebEx platform. Notice I set platform, it's not just into Webex meetings, it's into a variety of elements into our platform, including the contact center. What Voicea does is extremely powerful, okay? So here I am, I'm in a meeting, right? And I'm going to be talking -- you and I are going to be talking. I'm going to pretend like I'm on a phone in that meeting. And here, we're having a conversation. And what you see on the screen, right over here.

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**David dela Cruz;Commercial Account Manager**

Wow, it's writing down what you're saying.

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**Scott Edwards;Sr. Director, Product Marketing**

It's writing down. It's real-life, real-time transcription that is happening right here on our Webex meetings. Now that sounds cool, and that sounds impressive, and it is but there might be things like, I want to take an action item. So I'll say, okay, Webex, and you see our little icon will wake up. Okay, Webex, take an action item to send David the presentation, okay? So captures all this. And that's rich details. And what you can see, this is happening in real-time right here. And then I could go over and I can see the highlights of the meetings. I can see action items that have happened and so forth. Then after the meeting, I can come over into my personal meeting room. And here, I can see all the different highlights that happened, the different action items, and then I can share that with the people afterwards. So it's a pretty powerful tool.

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**David dela Cruz;Commercial Account Manager**

Amazing. It looks like we need that kind of thing for our broadcast. So a lot of people here can join in as well. I think that's all we've got time for mostly, but thank you so much for being on the show. And I think we're heading back over to the studio with Nish. Nish, are you there for us?

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**Nish Parkar;Cybersecurity Communications Manager**

I'm here for you, David. Thank you so much, that was this really interesting. So many things stood out to me. I noted one single platform for collaboration. And collaboration without compromise. That was really great to hear. And do you know what I find really funny actually, is I'm here with a lot of my different teammates. We work in a virtual team. So we are based in all different countries. My manager's in Spain, my colleagues are in the U.S. and Switzerland. We see each other here at Cisco live a couple of times every year, and it feels like we're always working together we're ever apart. So I love that. The collaboration is that great, but then you realize that you're collaborating with technology. It feels like you're there in person. Zane, now you're out in the World of Solutions. You're going to talk a little bit more about contact center, right?



**Zane Powell;Associate Sales Representative**

I'm indeed, Nish. Thanks very much. We're back here in the collaboration center, but now we're speaking all about contact center. And I'm here with Kurt Mey. Kurt is going to tell us a little about contact center. By first Kurt, introduce yourself.

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**Kurt Mey;Business Development Manager;Cisco Contact Center**

I'm Kurt Mey. I'm a Business Development Manager with the contact center business unit. Welcome to Barcelona.

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**Zane Powell;Associate Sales Representative**

Fantastic, Kurt. So Kurt, look, we know that's an exciting space for Cisco. What's happening in around contact center at the moment? Can you give us a low down?

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**Kurt Mey;Business Development Manager;Cisco Contact Center**

Sure, yes. Really a great exciting time with contact center for Cisco. Made a couple of announcements this week. Probably the biggest thing is there's been an enormous amount of investments with Cisco fairly recently. Two major announcements around Cloud Cherry or what's being called Webex Experience Management, kind of bridging the gap between customer experience and customer servicing. And then, of course, you've probably heard some other things earlier about Voicea. So where it was a Webex Teams application, there's an enormous amount of applicability in the contact center, that ability to get transcripts, leverage that information, make contact centers more efficient, has been absolutely excited. We haven't seen some investments in a while. So we're seeing it now. It's all about the cloud, cloud-delivered services, and it's all about business outcomes and the customer experience. So it's really, really exciting.

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**Zane Powell;Associate Sales Representative**

I say exciting. Now have you mentioned the cloud there. Tell us more about how at Cisco, do we helping our customers move to the cloud? What are we doing in this area?

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**Kurt Mey;Business Development Manager;Cisco Contact Center**

And that's great. So another announcement this week that we made, of course, we have a multi-tenant public cloud offering, WebEx Contact Center. This week, we announced WebEx Contact Center Enterprise. So this is a solution designed for our largest customers that have very complex, high security, highly scalable, require an enormous amount of flexibility. It's foundationally the same as our premise-based product contact center enterprise, but it's basically being brought into the cloud, inside of Cisco data centers that we own, we operate it for them. So we've taken all the drudgery associated with racking and stacking servers, building applications, building the information itself. And then really putting the power back into the customers, into our partner communities around delivering on applications, business outcomes and really meeting the requirements that we're being told on a regular basis. They want to be out of the infrastructure business. So it's about moving to the cloud. And then with programs like Flex, we make it extremely easy for customers to start on-premise, move to the cloud. It's absolutely fantastic.

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**Zane Powell;Associate Sales Representative**

Fantastic, Kurt. And look, it's really, really exciting. I'm super excited to see what's going to happen next in that space. Last thing before we go, what are you doing tonight? I heard there is party on.

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**Kurt Mey;Business Development Manager;Cisco Contact Center**

I heard there's a party going on. So I'm going to get my finest on and ready to go. So that should be a lot of fun. I have no idea who's performing, but that's half the fun.

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**Zane Powell;Associate Sales Representative**

I think he's looking good already. What do you think? Thank you very much for your time, Kurt.

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**Kurt Mey;Business Development Manager;Cisco Contact Center**

Thanks, Zane.

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**Zane Powell;Associate Sales Representative**

So guys, look, we're going to head back into the studio where Nish is waiting on us.

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**Nish Parker;Cybersecurity Communications Manager**

Thanks, Zane. That was really interested to hear from you and from David and the people you were speaking to. Sounds like a really great platform that we've launched. Obviously, we're talking about, it will be in one single platform, but it's great to see actually in the World of Solutions, see all the demos and see people wandering around actually touching our technology, trying it out. Loved seeing the live transcription that we had. And I actually can't wait to go home because I'm excited to try out some of these features myself. So even I'm learning things at the show where I'm here, speaking to people and seeing them, seeing all the demos, it's just great.

So this morning, actually, Zane and I, we ran over and snuck into the World of Solutions a little bit early with our staff badges, and we were speaking to [Jack O'Brian]. And he was showing us the Panorama endpoint. So actually getting to experience that, I think it's one of only a few in the world as we decide to roll them out. And so actually getting the experience, I know Zane has got some really good selfies. I'm sure he's going to be sharing those with CLEUR. Remember, #CLEUR. So now enjoy the workplace transformation innovation talk. Stay right there. We'll be back.

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## PRESENTATION

**Unidentified Company Representative**

Hello, everyone. Good afternoon, and welcome to the Innovation Talks Theater. My name is Toby, and I have pleasure being your host today. A big warm welcome to Cisco Live 2020. It's great seeing everyone here. There's a lot of us. But together, we're going to build the bridge to get you where you need to go. So you can accomplish anything. Now here at Cisco Live, you're going to learn new things, be inspired and create a path to endless opportunities. We have 14 innovation talks here in this theater, where we will share with you our latest solutions, innovations and, of course, best practices. .

Today, we are looking into workplace transformation. And it's my pleasure to welcome 2 get -- great speakers. Now Sandeep Mehra, truly is a global citizen currently located in Oslo, Norway, and is the Vice President and General Manager of WebEx Rooms and Telepresence. In his current role, Sandeep is responsible for the global strategy and business growth for the WebEx devices business unit. And joining him today is Amit Barave, the Senior Director and Head of Product Management for WebEx meetings. Please give a warm welcome to Sandeep and Amit.

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**Sandeep Mehra; Vice President & General Manager; Webex Devices & Telepresence; Cisco Systems**

Good afternoon, everybody, and thank you very much for being here. My name is Sandeep.

**Amit Barave; Senior Director, Head of Product Management for WebEx Meetings**

My name is Amit.

**Sandeep Mehra; Vice President & General Manager; Webex Devices & Telepresence; Cisco Systems**

And in the next 30 minutes, we're going to take you through a little journey of workplace transformation, and how we believe this is going to be a massive shift that you can drive in each of your workplaces. So if I can grab the clicker. Now it goes without saying that the future of work, and you've been hearing about it the last couple of days at this event. Well, the future of work isn't out in the future, it is now. And this requires your attention. This requires action right now. And why is that? Well, very simply, the way we work and the workplace has gone through a massive change. Let's think about some of the key careabouts of every leader out there, including your CEO. The first and important one is, agility is the new currency.

Does your company, does your office, does the workplace have a culture of innovation? And being able to drive great ideation and innovation across all the ways that they do things? A key care about for every CEO is about talent retention. Can I attract talent? And can I make sure that we retain that talent? And to that point, is the workplace that you have, does it really inspire folks, including millennials? Or all the other types of folks in your organization? Is it driving a culture where they get things done? A key area that many of you have been involved with is building these buildings, but are you able to unlock the value of this real estate? How many of you have seen this where you build these beautiful rooms for actually 8 people but typically used by one person? Yes?

And the fact that we also live in an environment where we use so many tools. In fact, in Cisco, we did a survey ourselves. On a daily basis, every Cisco employee touches about 34-plus tools. So think about the friction that, that creates. So your teams, really what they need is they want to work from anywhere, they want to get things done. And they want to be able to have that innovation culture and do things at light speed.

So let's think of the challenges that we've seen. And let's consider a beautiful room like this. I'm sure it's quite familiar. Many of you have a beautiful space like this or also think about the complexity in that space. To just start a simple meeting, the user probably would have had to use 3 remotes. There's no memory, there's no persistence and it just created so much friction. So over the last decade, we at Cisco have been very hard at work to really reimagine how you think about the modern workplace, making it at a core team centric. It has to be intelligent, invisible, where magic and magic moments just happen on the fly.

It has to be integrated with how you do things, which is workflows. And most importantly, your customers, your partners and you have made choices, technology choices. Cisco and all of these technology partners need to come together and provide an open platform, and this is what we've been driving towards. But if you really think to the next level. So it's not just a physical space. Teams need workplaces built for speed and innovation along the physical, the virtual, too. I mean, just by show of hands, how many of you, every morning, the first thing which you do when you wake up is reach for the mobile phone? Well, I do that, too. In fact, you probably saw that even in the keynote, 64% of us, every -- the first thing that we do is reach for that mobile phone. So our journeys start with that. And lastly, I spoke about the 34-plus tools.

You probably have in your environment, a similar number, which your users are going through. And this is what Cisco has been very hard at work to see how we can really bring all of this together and drive innovation at speed. And then what we're doing is really taking this to the next level. Just by a show of hands again, how many of you over here drive a self-driving car? Or a smart car? Okay, many of you. The reason I put this up here is the fact that the same technologies that you find in a device like this, in this beautiful car, is what we've embedded also at the platform. What that means then is you're having invisible super intelligent moments in every part of how you think about the collaboration journey.

Whether it is as you're starting the meeting, whether it is the fact that when you are in the meeting or as you exit the meeting, how can you have these magical invisible moments, which drive aha for all your users. So let me take you through a few examples. Let's take a simple example. Your

users walk into a meeting space, and what is the first thing they do? They're looking for cables, dongles, things to connect and share content. What if that became just so simple. I didn't need to do even lift a finger, one click, and I'm able to share that content seamlessly from any device and be able to pair and share. What about the fact that your users, a lot of times, even have friction, what button do I press?

We spent a lot of time bringing the big green button to every one of your experiences in terms of starting meetings. We're now taking it to the next level where the user doesn't even need to press the button, he can just speak to the device and say, "Hey, WebEx, can you start my meeting?" Easy?

What about the fact that every meeting that you join, typically there's 15 to 20 minutes of conversation happening where folks are just going around introducing themselves. What if that just went away, where your name -- your name label, your title and even getting inside of who you are is just visually available to everybody. That took 20 minutes of that meeting. But think across your company, the productivity gain that you could have.

What about the fact that in every meeting, we always have the angry typer. Somebody's just banging away. I have one, Jason from my team is very -- he does this all the time, where he would just bang away at his keyboard. Eight seconds later, he is muted. How good is that?

What about the fact that many of you at times will work from home. And you have next door, your neighbor's dog, who is barking away. What if the platform was intelligent where it knew what was the human voice and the dog voice and just suppressed the dog voice. And yes, this is happening.

And lastly, as you close out of that meeting, having meeting notes, we always are scrambling around, asking each other, "Hey, did you take notes, can we compare?" What if this happened invisibly recording, translation and transcription. All happening on the fly.

And lastly, many of you have built these beautiful rooms and beautiful spaces. How do you get analytics? How do you drive business decisions? How do you start thinking about utilization of these spaces? Again, all something that we've spent a lot of time super powering through that platform and delivering to your users. So should I show you what the new WebEx is all about? Let's roll the video.

(presentation)

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#### **Amit Barave; Senior Director, Head of Product Management for WebEx Meetings**

Thank you, Sandeep. So what you just saw, this is WebEx here and now. If you went to WebEx today and started using it, this is how it looks like. And every single month, it's going to keep getting better from here on in.

So I'm going to touch upon some of the key updates that are coming in, in the next 2 to 4 months, starting with that first meeting of the day. The meeting that we are driving in, we're on our mobile. That has to be way simpler than it is. Fumbling for, is my video on, with the mute button? Available now, is the simple mode or the car mode. You get in, you just swipe right, a simple mute, unmute, your video is already off. You get out, swipe left and the normal mode is back.

Your second meeting of the day could be even more interesting with what we have as the dual camera support. So we've been keeping up with Apple and iOS, the dual cameras. What this is going to allow people to do is, as you see me as a meeting participant, you are also able to see what the other camera is seeing. So see what I'm seeing. And the kind of use cases this can enable, we haven't even scratched the surface. iOS introduced this, so we've incorporated in the WebEx meetings.

So these were quick mobile enhancements. But by far, the most significant thing that we have launched this week is the WebEx Assistant for WebEx Meetings. Think of this assistant as -- it's going to grow, get smarter and get more and more skills over time. But at the get-go, the 4 things it's going to be able to do is: live transcriptions, closed captioning, meeting summaries and highlights.



The transcriptions are natively supported in English at the get-go, Spanish, French and German are the next in line. Same thing with translation. I think we're working on Spanish, the other languages will follow in the coming months.

The transcription itself, you might say, is not new news, right? Have any of you used it before in your meetings? No? There's always been third-party options available. So whichever meeting conferencing solution you use, you could use a third-party integration, get close captioning and transcriptions. But that has always been an experiment. People have toyed with it, but never embraced it really. And the reason for that has been the privacy concerns. Every single CIO that we've had conversations with, has said, "It's my meeting and my intellectual property, my company's intellectual property." And if that's going to go over to a third-party somewhere, with data centers, God knows where, on top of that, bringing their AI, they're not going to be comfortable about it. So for them, the baseline has to be that the transcription, the extraction of language or summaries from there has to be under a vendor like Cisco, where we have the privacy, data governance, e-discovery, all of that infrastructure already built in and ready. And this, by far, is going to unblock a bunch of use cases where people have just been testing this and never really jumped into it.

As we save all of these transcripts within our data centers or our data lakes, there's another little use case that it opens up, search and recall. We always go back to our mail clients, search for e-mails, search for old messages, what was said, when and all of that. But we were never able to do that about our meetings. Are we like, the meetings I had, all the meetings I had, leading up to this event here [prep], whom did I meet with, what did we discuss, what were the key topics? The follow-ons from there. It was never available. With this, people are able to extract highlights, then edit the key points captured by WebEx Assistant, and then share with others, and then search, search for the history. So this almost makes all of our meetings as meetings in the Evernote. If you -- if any of you use Evernote.

The skills keep going -- growing. And as I said, the interesting skill, Sandeep alluded to it, is the conference room booking problem. How many of you were in open floor plan environments over here? More and more of us are doing that. And the most common scenario, 3 or 4 of us get together, we're walking about, can we find a room? Can we find a room? And you find one unoccupied one, and you want to lock it down. You want to get it, right? There is no easy way today to get it -- you are then going to fumble in your outlook and try to see the availability and all of that. As opposed to that, talk to the endpoint over there, reserve this room for the next 60 minutes.

After you reserve it for 60 minutes, sure enough there are going to be times when you're running over. You see that you're not wrapping up, tell the WebEx device to say, extend the booking by another 30 minutes. All of these skills that we're talking about, the one common theme you'll notice going forward is, whether it's our mobile apps, desktop apps, or the devices, all of these things are showing up concurrently. We're not solving problems differently in all of these different things. And the reason for that is, finally all of our infrastructure, whether it's meetings, calling, messaging, intelligence, it ties together in a single WebEx platform.

The way the picture describes, it's very clear. On the one hand, you have the experience centers, the same experience delivered, whether it's web, mobile, desktop, Cisco devices, third-party devices, the same flexibility of deployment. It could be in the cloud. There are cases when it makes sense to go hybrid, or it could be on-prem. And then on the other hand, it's as open as open can be. Every single software tool your workforce might be using, be it Microsoft, Google, Salesforce and thousands of workflow apps, we integrate with them at a platform level. What that means is, if you're using WebEx Meetings, you'll benefit there. If you're using WebEx Teams, you'll benefit over there. And this has been fairly involved work for the past 12 to 18 months. We've really, really been conscious about pulling it together as a platform.

But the endeavor for 2020 is the unified client. And there's a very good reasoning behind that. Having a single platform only solves half the problem. So many times, Cisco and others have tried to solve this as, we're going to build that one Uber client, which you're going to use for doing everything. But the problem with that is nobody is going to embrace that one client for doing everything, when you've got a platform chosen for messaging, some other platform chosen for maybe calling. And that kind of makes the getting started or adoption difficult. And that's why it's not really unified. Actually, the keyword here is modular. The app is becoming modular, in that the same WebEx app, could be used in the messaging-only mode, in the meetings-only mode, calling-only mode, and we won't stop there, even in a device-companion mode. And the reason for that is, everything you do in your apps and you're walking about in your open offices, it only comes to life when you pair it with an intelligent WebEx device. More on that, Sandeep?

**Sandeep Mehra; Vice President & General Manager; Webex Devices & Telepresence; Cisco Systems**

Thank you very much, Amit. That was fantastic. And you know, no event at Cisco Live will go without us making some incredible announcements off our device portfolio. And I want to talk to you now through one of the devices, which is my favorite. I call it the instant office. Because it transforms how you think about the modern workplace, bringing intelligence absolutely across every part of how you think about experiences.

So let's go ahead and roll with a little video. Can we roll with the video, please?

(presentation)

The WebEx Pro, 27-inch, 4k amazing display, intelligence built into every part of the experiences that you have from this device, supports whiteboarding, applications, games, USB-C. It is the most intelligent device that we have built.

By the way, who wants to take one of these back with them? Okay, you're in for a surprise. We are actually giving these away. We call it spin it to win it. Go to the World of Solutions, spin one of the wheels, and you could actually win one of these and take it back with you. The instant office.

Next, I want to talk to you about something that you have been pushing us very hard. Thank you very much for really adopting huddle in your workplace. The Room Kit Mini, it's been a fantastic success. We provide incredible manageability, but you told us you want us to even help you go into those smaller spaces, start small and then start thinking about going really big. Well, introducing for the first time is the WebEx Room USB. Incredible device because you bring in your laptop, plug it in, and now with any meeting client have rich, very engaging video. It has a premium sound, wireless sharing, yes. You can share content, and it also has a remote. So really making it super simple to bring it across, start small and bring it across all those different spaces. And here's the other thing, we are the first in industry to also allow for an upgrade path. So as you start thinking then of bringing it into all the other spaces and have manageability, very important.

When you've got 100 of these devices across your different floor plan, you want to manage them at scale from a single pane of glass, yes? With the Room Kit Mini and the entire portfolio that we have, we will help you manage it at scale. So industry-first in terms of providing this easy upgrade path and making this transition.

I also want to talk about something that you've been with us on this journey, the last couple of years. I'm so pleased to talk to you about the WebEx Board. Because we started this journey a few years ago. It is something we are truly delivering in terms of the tablet on the wall. It is for business. It is incredible for communication for video, whiteboarding, but the same device can have applications, Fellow, O365, JIRA, and yes, even games. So drive engagement on this particular device across the entire workplace. And in recognition of all the great efforts that we've done. We've had industry analysts. Wayne House has published a report as of yesterday, just talking about the fact that the WebEx Board is the most sophisticated, complete solution in terms of driving engagement across the workplace. So I really want you to try the WebEx Board, get familiar with it. It is going to drive engagement across your workplace.

Lastly, you have been pounding the table and telling us to think -- rethink and reimagine immersive in the new age. How many of you had a chance to take a look at WebEx Room Panorama, our new immersive for the modern C-Suite? This is going to win hearts and minds of every C-suite and every Boardroom. Please take a look at it at the World of Solutions. We've got an incredible demo. And I believe that this will really drive some amazing moments with all these different boardrooms and C-suite.

For that matter, we've also provided incredible flexibility, which allows you to start thinking about other types of ways to scale this. And let me go ahead and ask them to play the video.

(presentation)

So go visit the Panorama at the World of Solutions.

So moving forward, we've also been very hard at work to help drive manageability of all these assets across your platform.

To give you more, Amit?

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**Amit Barave;Senior Director, Head of Product Management for WebEx Meetings**

Thank you. So Sandeep, all these devices, you're going to ship, the hundreds and thousands of them, they're going to create more and more complicated IT challenges. And along everything, right? Management, diagnostics, analytics, all of those aspects. About a year ago, this time, last year, we didn't really have much of a game in terms of diagnostics or analytics. But we've really, really taken big strides in here.

I think the key improvements you will see are the live or real-time diagnostics for all of the meetings that might be active at any given point. And to the level at which we are able to manifest that data every single participant, doesn't matter mobile devices, apps right down to the packet loss jitter, all kinds of data that are a typical IT support desk would need handy when someone is complaining that a meeting is not going right. This is live, and this actually sets the foundation for how AI will help it get better going forward. Because in the coming months, we're going to have tons and tons of data collected about everywhere, of course, anonymized. But for a given customer or a partner, they now a sense -- have a sense for -- is there a particular location that was running into more reds than others? Is there a particular user or a group of users that is experiencing poor quality than others? And they could build quick correlations to actually get to some proactive steps, as in, even avoid that trouble ticket call.

In terms of management, the device management in terms of cloud or even the on-prem devices, we didn't talk about WebEx as -- for devices, but we've also created a way for on-prem devices to get their management and analytics into the control hub. And all of these are foundations of building blocks, ultimately, for the control hub to be IT's best trend, right? If you can avoid the trouble tickets, if -- get one, diagnose those. And more importantly, do cool stuff to optimize your real estate resources. Because the tons of data that we are going to have with the room, in-room analytics, what was the occupancy? Was it an 8% room typically occupied by 2 people? All of that's now available, and it's going to be mined proactively.

Sandeep, if you want to add something here?

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**Sandeep Mehra;Vice President & General Manager;Webex Devices & Telepresence;Cisco Systems**

No, this is absolutely something which I believe will help drive decision-making, analytics and optimization as you're thinking about the next-generation of your workplace.

So Amit, what does that look like?

We spent time hopefully taking you through a journey of winning hearts and minds for your users. We've also been very focused about winning hearts and minds for IT. But is this all real? And I want to take you through a little journey within Cisco ourselves. We ourselves have actually taken this same playbook and applied it internally. So I want to show you a little video of our office in Singapore. And this is very dear to me because, actually, about a year ago, I moved to Oslo. And prior to that, I used to be based out of this office in Singapore. And when I went there to Singapore about 4 years ago, it wasn't the most inspiring office. It was one which was unengaging. We found that folks didn't want to come back into the office because they just didn't drive engagement. We did certain very unique things to bring back that engagement.

Let's go ahead and play the video, please.

(presentation)

And folks, that is all real. And you know what, here's how we started tracking engagement. We now have things like we look at badge-in rates, 40% increase in badge-ins. The people in that office, they love coming into work. We're, in fact, also finding that while talent retention in the past used to be a challenge, we're now getting a flurry of resumes from companies, even our competitors. They want to come and work for Cisco.



And lastly, this big exercise that was done, it actually gave a massive cost saving to -- for the company, \$12.5 million over 5 years. And that actually gave the opportunity to go transform that office. So a hugely powerful story. I'd love to have you also join in that journey to think about how you can modernize that experience and win hearts and minds across the workplace.

So as I end, along with Amit. Whether your users are working from home, on their mobile phone, in huddle spaces, large spaces, the Boardroom, we at Cisco have you covered with the most incredible capabilities to drive engagement and win hearts and minds of all of those users.

So with that, thank you so much for being here.

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**Amit Barave;Senior Director, Head of Product Management for WebEx Meetings**

And begin the journey by going to the booth, spin to win at Desk Pro.

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**Sandeep Mehra;Vice President & General Manager;Webex Devices & Telepresence;Cisco Systems**

World of Solutions. Thank you very much for being here.

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**Amit Barave;Senior Director, Head of Product Management for WebEx Meetings**

Thank you.

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**Nish Parkar;Cybersecurity Communications Manager**

What a great innovation talk about collaboration. And let's keep talking collaboration now. So this show, what I find is always a -- get -- attract a lot of the techies. And so the people that want to learn more and more about the technology. But it's also at the end of the day about our people. And that's what collaboration is all about. WebEx Teams and WebEx Desk or WebEx platform is all about humanizing technology. And so David's out in the Word of Solutions, in the collaboration booth, and you're going to talk a little bit more about the collaboration platform. Here, you've got, David.

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**David dela Cruz;Commercial Account Manager**

Yes. Hi, Nish. Thanks. I'm in the collaboration booth, and it's a very busy outside. But luckily, we've managed to snag the, I think the only quiet room at Cisco Live. So it's a bit of a luxury. We can talk a little bit quieter than we've had to in the past couple of days.

I'm here with [Andez] (inaudible), who's a Senior Product Manager for Cisco; and Andy Johnson, Product Marketing Manager for Cisco. Thanks for being on the show, guys. Now we're talking here about collaboration, and I just spied on the desk there, that is a really cool looking piece of kit that you've got there, Andez. What are we looking at?

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## QUESTIONS AND ANSWERS

### Unidentified Company Representative

So this is our brand-new WebEx Desk Pro. It's an all-in-one device with everything you need. It's designed to be on the desk in your office or in a kind of a junk room, it's more huddle room, where it could be 2 or 3 people sitting together and using this. There's a lot of really nice features on this system. It's a 4K screen that allow you to use this as your PC monitor. You connect your laptop only with one cable, known as USB-C. That also gives you power to charge a laptop, perfect for the whole spaces and the shared environments.

And of course, it's a super nice video conferencing device as well, with an automatic camera, in-built microphones that will really create this bubble around you to move out all the noise in the background. And it's also a fantastic audio system, which is actually -- it's more than just in front of here where it goes inside the system as well and use the whole volume of the system. So the team has done a fantastic job. And the feedback we've had this week has been tremendous, and customers are lining up to see it.

And the feedback, as I said, has been fantastic.

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**David dela Cruz;Commercial Account Manager**

And this is our first look that we're getting at these devices, correct?

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**Unidentified Company Representative**

Yes.

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**David dela Cruz;Commercial Account Manager**

Absolutely. So you've got to hear an exclusive from Cisco Live in Barcelona. And just as you were speaking, I spied this headset that you've got on the side of the Desk Pro there. Great new looking things. As the workplace is transforming, is it sort of a growing requirement for headsets, Andy?

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**Unidentified Company Representative**

Yes. Absolutely. As employees are becoming more mobile, so they need to use their headsets with their smartphones, their PCs, their MACs and with their desktop systems, particularly as some of the modern workplaces. They're more of an open office environment. There's a lot of background noise. So we set out really to design a headset that is designed for business use, for personal use and the journey between. And the guys have done a great job. We think they're fantastic-looking.

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**David dela Cruz;Commercial Account Manager**

Yes. Perfect. And obviously, Cisco may not be as well-known as other headset manufacturers, why would Cisco pick -- sorry, why would a customer pick a Cisco headset over one from an established competitor or even from a consumer headset?

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**Unidentified Company Representative**

Well, there are 2 main reasons. First of all, it focuses on the user experience. As you can see, it's a really convenient and comfortable boomless design. And we put a lot of work into the audio systems here with a fantastic, high-quality form, 2-millimeter speakers and a lot of voice honing, noise canceling and background noise suppression in the microphone arrays on both sides here. So that you as the user of these headsets gets an amazing audio experience, but also the person you're speaking to gets crystal clear audio on the other end of the call as well.

The second thing is our benefits for the IT team. So first of all, we've done some quite unique things in terms of hardware and software protection for Bluetooth devices. But we've also -- because we don't see these as an accessory, because they're part of our overall collaboration system, we can make it easy for IT managers to provision, maintain, deploy and troubleshoot.

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**David dela Cruz;Commercial Account Manager**

Perfect. And this is all very good for the individual worker, but what have we got for the Boardroom?



**Unidentified Company Representative**

Yes. The good thing is that we have some fantastic news from -- for the Boardroom as well. So we're in this WebEx Room, Panorama Room here, which is actually a meeting room for the executives. It's actually solving the meeting room, allowing the people sitting here in the room to have a really good dialogue in between themselves. I mean, great local meeting. But at the same time, be able to speak to any location around the world and get the feeling of actually being in the same room. And in the past, these kind of experiences have been kind of locked in to, you have to build a dedicated studio, it's dedicated furniture.

So the new thing about this is that we're now bringing this super experience into the actual meeting room where people meet and sit and work. And you can have your local meeting, you can have your video meeting or you can have your immersive video, seeing all the participants on the other side at any given time, at the same time, and also have the presentation there. So feedback on this product here as well has been fantastic, and our existing customers just love it.

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**David dela Cruz;Commercial Account Manager**

Perfect. So you heard it here, a couple of great new -- brand-new devices to enable some really amazing new collaboration experiences from the collaboration team here. Unfortunately, it's hard to describe what these look like of a video, but definitely have to try and get down to a Cisco Live to see them in-person. Or alternatively, get in touch with your Cisco account management team, organize a demo or a tour in one of our centers.

And I think we're heading back to the studio with Nish.

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**Nish Parkar;Cybersecurity Communications Manager**

(inaudible), David. Thank you, David. So I was taking a look at the #CLEUR on Twitter, and I saw as well the collaboration booth are giving away WebEx Pros at Desk Pros if you do take a look. So make sure you go down to the collaboration booth.

But I'm here in the studio at the moment. I'm with Johan. Johan, you are our Collaboration Technology Leader here at Cisco in EMEA, how are you doing?

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**Johan Van Puymbrouck;Collaboration Technology Lead**

That's right. Thank you very much for having us. I'm doing fine. Thank you.

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**Nish Parkar;Cybersecurity Communications Manager**

Thank you for joining us. So obviously, collaboration seems to have a lot of excitement around the show. We saw it in the keynote, we saw some demos as well. And we've heard about some of the very exciting things that are coming up here. Obviously, from Sandeep and from Amit as well in the innovation showcase. So how much are you seeing customers trying to transform and change their workplace? What are you seeing when you meet customers?

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**Johan Van Puymbrouck;Collaboration Technology Lead**

We see a tremendous amount of requests coming in. Many of the companies, the budgets are not going up, they're rather going down, and people are trying to look to productivity. How can we do more efficient operation in the business we're in? So we do see the era of "knowledge is power" has gone away. It's now sharing is caring. So if you want to do sharing is carrying, obviously, you need the right tools to be able to do that, to work together, either remotely or in the same office. So we see a lot of this. I'd say, modernize the workforce is a good theme to summarize it in. So we

see that in the offices, we see that in team tools. And I think the technology that we've brought out is facilitating that. It's making all the cognitive stuff. It's making that all much easier for people to start working together, even with visuals or texting or persistent messaging or just easy to use.

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**Nish Parkar;Cybersecurity Communications Manager**

Absolutely. And so here at the show, you've been meeting with the customers, you've been meeting with Cisco partners as well. So what would you say are some of your key takeaways from the show so far because I know we've got a little bit of time left?

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**Johan Van Puymbrouck;Collaboration Technology Lead**

Yes. We see a lot of customers. I've been doing executive tours in the booth, and many of the things -- there's actually a few topics that keep on coming back. So I'd say the #1 request is like, hey, this modernize -- help me modernize the workforce experience, right? So with the new launch of the endpoints, the products, the Room Panorama, the Desk Pro, the Room Kit USB, that's my -- the #1 topic I'm been asked for. And then #2, obviously, is our announcements of Microsoft and the CVI, the cloud's interoperability, the validation with Microsoft. Because pretty much every one of our customers has got some way, a form of Microsoft in their workforce.

And then the third one is very specific to Europe. And it's really down to privacy, compliance. We're a U.S.-based company, obviously, but we do have a lot of data centers and there's Brexit, and there's a few other things happening. So people just ask questions, like, hey, how is this working with privacy compliance? Where are your data centers? And how is the operation actually running?

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**Nish Parkar;Cybersecurity Communications Manager**

And I heard a phrase earlier with collaboration without compromise, right? And I love that phrase, specifically around legal security piece that there's no compromise when you get this great single meeting platform.

So talking about the single collaboration platform, we're talking about calling, meeting and device management as well. What value do customers see in all of this coming together into the single WebEx platform?

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**Johan Van Puymbrouck;Collaboration Technology Lead**

So when I talk to the multinational customers, many of them go like, listen, we're global. So we need to have a platform, one single platform that allows us to see everything. So that's the #1 ask. That's one of the main advantages of having one platform. Obviously, having all of the workloads on this platform allows you to migrate seamlessly, and we have this mantra, it goes like this: cloud first, but not cloud only. So it allows us to migrate from on-prem into the cloud. So like the typical hybrid solutions. Obviously, as I mentioned it before, the security is crucial. We cannot afford to be nonsecure as a cloud vendor. And the interoperability key is obviously a key.

Now the last one, and that is really the ace card is, is you -- if you have one platform, you obviously have a lot of data. So we have -- we collect about more than 200 million QoS, quality of service data endpoints, per day on all the meetings. Imagine you could start linking that into other solutions, like, hey, there's something wrong with your flow where there's some delay or some jitter, something not right. How about automating that into your LAN, into your WAN and making sure there's no IT ticket opened? Well, that's what the single platform allows you to do that.

It's coming in phases, obviously, but that's the promise of the single platform.

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**Nish Parkar;Cybersecurity Communications Manager**

Yes. And also, the leverage of the power of all that data that's collecting, right?





So we've talked a little bit about small business here at the show as well. And then obviously, Cisco has launched design for business. So obviously, I think, I mean, you told us a little bit more maybe about how that collaboration platform is difficult for small businesses as well, right, with the WebEx platform?

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**Johan Van Puymbrouck;Collaboration Technology Lead**

So we want to make a platform and a product and a service that is very intuitive and is going to be optimized from the biggest enterprise as well down to the small and medium business. So we try and make it very intuitive, very easy to sign up and then very easy to use, obviously. So it's right there from the top enterprise, with all their compliance and data privacy, data loss prevention, all their systems and demands as well as down to the individual user, where they can actually easily sign up and get things done.

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**Nish Parkar;Cybersecurity Communications Manager**

So it really is a one for all for the customization as well.

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**Johan Van Puymbrouck;Collaboration Technology Lead**

That's the goal.

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**Nish Parkar;Cybersecurity Communications Manager**

So for those customers that are here at the show or maybe they're taking a look and joining us online, what's the first step that they can take towards really kind of trying to learn more about the Cisco Collaboration Platform?

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**Johan Van Puymbrouck;Collaboration Technology Lead**

Yes. Thank you for that question. I love that question. Because I get a lot, like, yes, I'm sold, where...

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**Nish Parkar;Cybersecurity Communications Manager**

Now what?

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**Johan Van Puymbrouck;Collaboration Technology Lead**

Now what? Where do we go? So it's just super easy. Go on webex.com and sign up for WebEx Teams account. It comes with a lot of free, we call this, the premium model, a lot of features. You don't need to pay for anything. It's just there for you to use. And you can download it on your smartphone. The moment you walk into a collaboration enabled room, these devices will start talking to each other. And there you have it. That's your remote control. Your meetings, your information is already on your smartphone. One click or one tap in this case, and your meeting happens. That's the magic of Collaboration.

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**Nish Parkar;Cybersecurity Communications Manager**

I know, and I can say I've experienced that firsthand, right? Because being at Cisco, we're using our own technology. We're collaborating with each other. We're a big enough company as it is. But it feels like the world can be a very small place when you have some of the great technology that we have.



**Johan Van Puymbrouck; Collaboration Technology Lead**

Absolutely.

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**Nish Parkar; Cybersecurity Communications Manager**

So thank you very much for joining me, Johan.

So we're now going to switch gears a little bit. We're going to wrap up the Collaboration session, and we're moving into the AdvoChat for security. So this is a customer speaking opportunity. It's hosted in a talk-show format, taking place at the gateway booth, just along behind me here at Cisco Live Europe 2020. And this time, we're going to be speaking -- focused specifically around security.

So we're going to have with us, Michael Jenkins. He joined us in the studio earlier this week, talking about Brunel University and some of the challenges and experiences that he as a CISO there.

Enjoy the AdvoChat for security, and don't go anywhere. Stay right there. Thanks.

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## PRESENTATION

**Unidentified Participant**

Hello, and welcome to AdvoChat. So AdvoChat is the area within Cisco Live, where you can kick back, you can relax and you can hear Cisco customers share their stories about how Cisco technologies have helped them tackle challenges that they found in their organizations and also help them to achieve their business goals. And so it's very relaxed and chatty, and we want to hear from you as well. So when we've finished our AdvoChat, we'll be opening up for questions from the floor. So please do feel free to interact with everyone up here. And so we're going to be talking about security in this AdvoChat and how it is possible to maximize operational efficiency, secure IoT and ensure effective threat mitigation. And I'm joined, in these very lovely armchairs, by Mick Jenkins, Chief of Information Security Officer of Brunel University, London; and Vincent Campfens, Digital Strategy Manager of the Port of Rotterdam; and Cisco's very own James McNab, Director of Cybersecurity Marketing of Europe, Middle East, Africa and Asia Pacific. So please join me in giving them a warm welcome.

Hello. Hi, everyone.

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**Vincent Campfens; Port of Rotterdam; Digital Strategy Manager**

Hello.

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**Mick Jenkins; BrickTech; Chief Security Officer**

Hello.

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## QUESTIONS AND ANSWERS

### Unidentified Participant

So James, you've work with these chaps for a while now. You know them pretty well. So perhaps you could introduce yourself in your role within Cisco and perhaps introduce these gentlemen, if you please?

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### James McNab;Director, Cybersecurity Marketing, Europe, Middle-East, Africa, Asia Pacific

Yes, I'd be very happy to do that. So Vincent and Mick, Vincent's at the Port of Rotterdam. Vincent is responsible for digital strategy at the Port of Rotterdam. And Mick is the CISO, the Chief Information Security Officer at Brunel. And essentially, the only reason I'm sitting here is as an enabler, and that's really how we see Cisco's role in a partnership with our customers. And I'm sure that we'll talk about how Vincent and Mick think of that partnership. But what we want our customers to achieve is a successful implementation that enables them to achieve their business outcomes. And the way that both Vincent and Mick think about security is not as a tax, not as something that should get away in -- get in the way of the business, but a little bit like the brakes of your car, right? Your business should be able to drive at the speed of innovation that you wish to achieve your own customers' goals and cybersecurity is there to allow you to achieve those goals.

So our role in the way that we interact with our customers is helping them achieve their outcomes and developing a partnership that goes way beyond any single product or solution that may help them achieve a particular objective, but to ensure that their projects are successful and ensure that we can help them at every stage of their cybersecurity journey because cybersecurity implementation is a journey, it's not a project, it doesn't have a beginning and an end. It's a bit like staying fit. You can't get fit, and then think, oh, that you've achieved it, you've got to move on to the next stage.

So I'm sure that we'll hear a lot of that coming out in the conversation.

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### Unidentified Participant

Yes, I'm sure we will be. And Mick, could you tell us a little bit more about Brunel University as an organization?

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### Mick Jenkins;BrickTech;Chief Security Officer

Yes, delighted to. And thank you very much for inviting me here today. I mean I'm the CISO of Brunel University, 18,000 students, 4,000 staff, a lot of academics, single campus, wonderful place in West London to actually live and work, great community. But importantly, it generates huge amounts of data that we have to protect. And of course, it's not just a community that wants to protect that data, it's the nation as well. So we have some high-end research being undertaken in collaboration with commercial partners, consortiums, and, of course, there are people out there who wish to steal that intellectual property. And it's our job to work together in partnership, I think, to protect that data. And of course, it's an expectation these days from parents and from students themselves that we will look after their own personal data. And that's certainly more prevalent nowadays than it was, say, 5 years ago.

So I think when I arrived at the university, it was a case of, well, I kind of need to future-proof where this is going because the threat is kind of exponentially increasing year-on-year. And I can't do this by myself. So I need to build some strategic partners. But I didn't want 20 strategic partners. I wanted 3 or 4 core partners that I could work with to build capability. And that's how we met James, [Peter] and Cisco.

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### Unidentified Participant

Oh, nice. Wonderful. And Vincent, perhaps you could tell us a little bit about the Port of Rotterdam as an organization?

**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

Yes. And then let me detail a bit. I'm from the Port of Rotterdam Authority, so not the whole Port of Rotterdam. And as the Port of Rotterdam Authority, we are responsible for the social and economic value of the whole place. We're really busy with developing the port in a sustainable way. And actually making sure that the shipping process, transportation processes, industries can do business in our area, safe, reliable, efficient and also sustainable.

And from that perspective, our customers from the Port of Rotterdam Authority, they are mainly shipping lines or container terminals or industries or the inter-land transportation companies. So we are like a hub in between, but we do not transport the cargo ourselves, we make sure our customers can do that. And we've been doing that for over 400 years, almost 500 years. So that's a long...

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**Unidentified Participant**

Not long.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

No, that's quite a long time. I don't think there's that many companies that can say that.

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**Unidentified Participant**

No.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

So for us, what's important is always safety in our port. And lately, safety goes hand-in-hand with security. And a lot is coming towards us. Supply chains are digitizing, industries are digitizing inside our ports, and we want to play a role in that and facilitate it. And also as an authority, we're responsible for specific task in that. So it's a really nice job for me as a digital strategy manager to look at the outside world, what's coming towards us and where do we focus on, where do we focus our time and money on, when it comes to all these new technologies, based on our company with only 1,500 people working there. We cannot do everything.

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**Unidentified Participant**

No.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

So we also have to choose our partners right, we cannot have 50 partners, indeed.

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**Unidentified Participant**

Yes, absolutely. So Mick, I love your -- in the past, you getting to this role, you're an author of spy and forensic thrillers, amazing. And you've also worked as an intelligence officer within defense intelligence, so risk assessment has obviously been quite a key part of your world. How do these experiences help you to measure risk, in your life now as a CISO?



**Mick Jenkins;BrickTech;Chief Security Officer**

Well, thank you for that. I kind of think risk, excitement, adventure, adrenalin, it was kind of built into my DNA. It came from my mother and father. And I think for all of my career, it started at 16 years of age, by the way. I was meant to go one route, into the Royal Navy. But as you'll all be aware, certain things happen in your life where you've got to have a fail-safe or a back plan or a bit of flexibility. And I passed all the tests to get into the Royal Navy, absolutely no problem at all. The last test was for color blindness. And I failed, to the horror of my mother, who was -- the whole family comes from merchants, seamen, mariners and Royal Navy, and I was the first to join the Army. And I'm kind of proud of that in a sense because I kind of led the way.

But I mean, at 16, what I realized straight away is that you need a backup plan. You definitely -- you've got to have a bit of flexibility. And then as you go through life, and my life was full of risk, travel, adventure, you kind of think, wow, you've got to really measure and understand risk as you go. And with my exploration, climbing into the mountains, doing the work in counterterrorism, it was very fast risk assessment, dynamic risk assessment. And that's in-built into us. It's a natural kind of way of dealing with fear, vulnerability, risk threats, bad stuff that's coming at you. And you kind of get good at that, but you also need a lot of luck and a lot of good timing. And I think for me, when I moved from counterterrorism into cybersecurity, actually, there's not much difference. There are bad people in both, they're adversaries. You've got to understand the adversary.

You've got to get into their mindsets, their psyche, what are they trying to do, what are the targets they're after. And for me, it's the target assets, intellectual property, it's personal data. And therefore, for me, the risk is, well, actually, how are they going to get there. Understanding their tactics, techniques and procedures, figuring out how we can stop that in a sense of monitoring it, detecting it, containing it, mitigating it and stopping the lateral movement. So that's how I kind of brought risk into the world of cybersecurity.

But again, I kind of knew what I wanted to achieve around safe data havens, for example. But I wasn't familiar with what tech and technology existed in the industry. And therefore, I went out to all of industry to find out what they had. So I knew what I wanted.

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**Unidentified Participant**

Yes.

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**Mick Jenkins;BrickTech;Chief Security Officer**

But I had to find the right partner to put the risk, sort of like, bring the risk exposure down.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

So how many companies did you visit before you've found the right one?

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**Mick Jenkins;BrickTech;Chief Security Officer**

I didn't visit a huge amount, Vincent. But I kind of had around about 12 that I was looking at, visited 5, 6 maybe. And of course, really, for me, a slightly different view with Rotterdam Port as well, we've got different businesses. What I needed to convince the Executive Board was that actually my idea of buying technology and instrumentation was balanced and proportionate to the business that we have. We're not a bank, we're not a high government department. I couldn't lock down all the academics, doing all of their work. So it had to be balanced and proportionate to the business that we've got.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

And then do you work together -- sorry, I'm taking over it.



**Unidentified Participant**

No. No. It's lovely to hear.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

But you were also talking about the national government finding it really important. So how do you work together with other universities then?

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**Mick Jenkins;BrickTech;Chief Security Officer**

Yes. And I think collaboration is very important within sectors, but also outside of your own sector. So you can see the good practice across other sectors. So I'd be delighted to come and visit Rotterdam.

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**James McNab;Director, Cybersecurity Marketing, Europe, Middle-East, Africa, Asia Pacific**

There was an interesting comment that Mick, you made yesterday. Yesterday, we had a CISO Day, a dedicated event for Chief Information Security Officers precisely so that professionals like Mick and Vincent can learn from each other and share experiences. And I thought, Mick, a comment that you made was -- Vincent was asked about talking to other educational establishments to see what they're doing and learn from them and Mick made a comment to say, "Yes, of course, we're interested in what other educational establishments are doing, but actually, we want to be the very best. So we may look at what other organizations that are similar to us are doing, but we don't want that to be good enough. We actually want to be the driver of innovation and effective approach within our university."

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**Mick Jenkins;BrickTech;Chief Security Officer**

And interestingly, I think this is the fascination for me because people were saying, "Mick, hang on a minute, you're building this model, this unified platform, you're taking a bit of risk here." Because everybody else was doing it in a particular way. And I kind of thought about this for a long time. And in a way, I wanted, in a sense to be the path finder and the route finder for bringing technology together building a unified [performing] model that might suit small, medium enterprises, universities, different sectors.

So people were saying, "Why aren't you going with that company because the rest of the sector does?" And I kind of said, "Well, I'm taking the risk, but I think it's a risk that I've got right. And fingers crossed."

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**Unidentified Participant**

I'd say it's a journey that's ever-evolving.

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**Mick Jenkins;BrickTech;Chief Security Officer**

Still a journey.

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**Unidentified Participant**

Yes. Absolutely.

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**James McNab;Director, Cybersecurity Marketing, Europe, Middle-East, Africa, Asia Pacific**

That shows quite an innovative attitude, quite a mature attitude on the part of the university because, I mean, your background, listening to the way that you describe it, there are a lot of similarities between the world of counterterrorism and counterintelligence and cybersecurity, but one can imagine that some educational establishments would be quite conservative. How did it actually end up that they were willing to go for somebody with quite an unusual background as opposed to somebody who'd come up through more of a traditional technical route? That must have been an interesting series of conversations.

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**Mick Jenkins;BrickTech;Chief Security Officer**

Well, I mean, a lot of it was by accident, to be fair. But actually, when you boil down the role of Chief Information Security Officer, you're effectively a counterintelligence officer. And that's about knowing what the adversary is doing, understanding their tactics, techniques and procedures and being -- looking at the counterintelligence. And the other core elements of a CISO is quite simple. We exist to deliver the business strategy. So I've got 5 years at Brunel. Because this strategy was a 5-year strategy. And my goal is to deliver that with the help of partners. And I'm very pleased to say, again fingers crossed, that we're on target. We're beyond halfway. And I'm delighted because it means I can ramp down my work life and ramp up by other writing life because I'm not far away from retiring so...

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**James McNab;Director, Cybersecurity Marketing, Europe, Middle-East, Africa, Asia Pacific**

That's an important aspect of what we were discussing yesterday in terms of key priorities. And the topic of the human talent came up, finding the right talent, but also being able to hold on to talent, right? Vincent, is that a challenge for you and the security team at the Port of Rotterdam, finding the right people to be able to ensure that your cybersecurity posture is effective and managed day-to-day.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

Of course, of course. The market for security experts is pretty tight also in our country. And well, in Holland, the Port of Rotterdam is maybe less known than in the rest of the world that people take it for granted. So when the real talents come from the university, they naturally, well, don't come to us. So that's when we also look in what do we have to do ourselves and what do we leave with expert partners. So we have -- I think our IT organization is up to 80 people, of which, 8 are now in the security team, and they are really in that security experts. We have CISO also. And the CISO is actually a combined role of our Chief Harbormaster, so who's responsible for the safe operations of the vessels going in and out of port. (inaudible).

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**Mick Jenkins;BrickTech;Chief Security Officer**

When does he retire? I fancy that job.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

I'll give you a call. It's a nice combination. But we have to choose in what we do ourselves and what we leave up to other companies. So a big part of the security of IT that we have in the port is actually done by Cisco as a managed service, keeping things up to date, knowing which technology to put where and of course, our security experts check it with our harbor and our guidelines if that's in check, but we can leave its -- the operational side to our partners because we want to innovate too, and if we have too many people working on this topic within our company, we lack the innovation power.

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**Unidentified Participant**

And speaking of innovation, on your journey to become the smartest port in the world, what are your priorities in order of the journey?



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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

Well, Brunel University wants to be the best university, we want to be smartest port.

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**Unidentified Participant**

Yes. Aim high.

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**Mick Jenkins;BrickTech;Chief Security Officer**

Aim for excellence.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

We're quite ambitious over here.

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**James McNab;Director, Cybersecurity Marketing, Europe, Middle-East, Africa, Asia Pacific**

Any plans for any writing, Vincent?

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

Sorry.

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**James McNab;Director, Cybersecurity Marketing, Europe, Middle-East, Africa, Asia Pacific**

Any plans for any writing?

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

Not yet. Not yet. Not a whole book, not a whole book, let's start small. The smartest port for me, it's just a little bit of a vague term. You can put anything in it. But for me, you can only see if you're smart, if you make the right decisions. And as I said, the port exists for a long time, and we also have to think far ahead. So if we are the smartest port, maybe ask me again in 10 years. And then I know for sure. But what we're doing is that we know what to do. There's 2 major challenges coming towards the Port of Rotterdam. One is the energy transition. So a lot of our port area has carbon-related industry that we hope will be gone in 50 years, for example.

There's the Paris agreement. We have to reduce our greenhouse emissions by 95% in 2050. So that's a big, big challenge that we have to put our brightest minds in to get that to work and actually get there in 2050. On the other side, there's digitization. And well, that's more my topic. And being smart and digital, for ports, it's really about connecting, connecting with your customers, connecting with your stakeholders around the port, like the municipality of Rotterdam, the government but especially with what's going on in our port. So as I said, we do not touch the cargo, but the cargo goes through our infrastructure, it goes through our rules and regulations, and we are responsible for the safe passage of ships. So if they are digitizing our customers, how do we keep up with them. They have needs for information. They have needs for data. And I believe that's where the real thing about being smart is to keep connected with our customers as a port and our stakeholders.



And we have all these projects for that, that I -- I have a great job. I can pick the nicest ones and say we focus on there and that. And one of them is, for example, we're working on to digitize our infrastructure. So normally, we have waterways. We have key walls. We have roads. We have jetties, but they are not digitally available for our customers that they exist in the physical world. But I believe that when you can build a surface really on top of those objects, you can be a smart port, and you can connect with the new innovation from our customers, like smart trucks, smart chips. And well, smart is everywhere. But it's -- please ask me again in 10 years if we are the smartest port.

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**James McNab;Director, Cybersecurity Marketing, Europe, Middle-East, Africa, Asia Pacific**

As you become smarter, so cybersecurity needs to be such an in-built pervasive element of your success, right? Because smart can also mean opportunity for adversaries, right? So how does the interaction between the digitization team, and really driving to be the ultimate smart port, how do you work as a team with the cybersecurity -- with your cybersecurity colleagues to ensure that, that partnership is pervasive?

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

Well, it's an integral part of our work. For example, like that -- you gave the example in digitizing our infrastructure and what you see right now is that when we build a new key wall or we build a new route, from scratch, we're actually already thinking not about, is it safe? Is it reliable? Because we build routes and key walls for over 50 years. But they're also connected now. They have sensors in them. So from scratch, we also have to think about our civil engineering must also be cybersecure. And that's a huge change of mindset, and it takes also a lot of effort within our company to spread that awareness, but just that it gets the attention. For me it's a really, really good example of how it lives that civil engineers also have to deal with cybersecurity in their designs. It's -- yes, it's going everywhere.

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**Mick Jenkins;BrickTech;Chief Security Officer**

I find the conversation of smart cities, smart ports, smart campuses, is fascinating because you've really got to get ahead of the game in the way that you can manage new tank coming in. And I'm very interested to see how that operates in your environment. But interestingly, in one of my novels, I took down a port through a cyber-attack and everything just went blank, all hard drives wiped and the rest of it. And of course, we know that's happened for real.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

Yes.

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**Mick Jenkins;BrickTech;Chief Security Officer**

In the past, with (inaudible). In the novel, I hit Istanbul ports. And it was fun to write about it but frightening to recognize the damage and the impact that, that kind of thinking have. So we know that whilst we sit here, we go into work, you go into Rotterdam Port every day, I go into Brunel, there are people out there, the adversaries are out there, they're going to work every day, trying to defeat us and trying to figure out their ways in to take down our systems. And they might not just do it next week or the next month, the geopolitical situation of the world is kind of a little bit fractured at the moment, it's a little bit concerning, volatile. And I was talking this morning, for example, about the impact on us as communities where the attackers are actually targeting cities.

And for example, New Orleans in December 2019 declared a state of emergency in the city because of a cyber-attack based upon ransomware. But wasn't it interesting, it didn't really make massive news globally. But they were 1 of 8 cities that were attacked in 2019, but the only one that declared a state of emergency. So I think we exist in a world of very interesting threats.

**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

And now I want to add to that, that, of course, I said on digital, and being a smart port, there's also connecting with everyone, but that's also a risk, of course.

**Mick Jenkins;BrickTech;Chief Security Officer**

Yes.

**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

The more connections we have with different parties on a digital level, the more risk there is, and the impact of something happening is great.

**Mick Jenkins;BrickTech;Chief Security Officer**

One of the audience members this morning, he said, Mick, "You will be able to go back to reversionary mode because you're old enough, you can get a pen and paper out and you can do all of this and stick it on a container and the rest of it." And he brought out quite an interesting point, actually, because, of course, we're all brought up nowadays by children and everybody else is that they rarely write and go back to reversionary mode. But certainly, with some of the [not patriot] attacks and some of the city attacks, everybody was going back to pen and paper, staggering. And you've got to have a plan around that and I'm sure you have, Vincent, for the port.

**James McNab;Director, Cybersecurity Marketing, Europe, Middle-East, Africa, Asia Pacific**

I think there's an opportunity. Vincent, you might be sending Mick an invitation to come visit the Port of Rotterdam and make sure that there's no chance that the Port of Rotterdam would ever feature in any of Mick's novels.

**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

You can feature it in a good way.

**Mick Jenkins;BrickTech;Chief Security Officer**

Yes, well let's have a look.

**Unidentified Participant**

You can be the hero. And so Vincent, how does Cisco play a part in your cybersecurity strategy then?

**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

Well, part of our strategy is digitizing our objects in the port, like key walls, jetties like I explained. That means that they need to be connected. Right now, it's pretty much spread out. But we need to have one platform to connect our physical assets. And we've chosen the Cisco Edge Intelligence platform for that. And it means that we can manage those objects remotely, we can manage the data streams, and Cisco is responsible for keeping everything up to date, both on the hardware but also on the -- and the software side for the coming many years. So that is our strategy. So as I just said, I don't have to think about it anymore. When we build something new in the port, and we need to connect it, we don't have to



think about how we're going to do that? Or is it secure? We made a decision on that, and it really eases my mind to not think about that the coming 5 years, at least.

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**Unidentified Participant**

And Mick, how do you find having kind of platform approach to all things security?

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**Mick Jenkins;BrickTech;Chief Security Officer**

Yes. I mean, that was very much my vision when I first came to the university. I didn't want 20 different vendors. I mean we've got a whole heap of different software and different tech. But we wanted -- my vision was, what I term, a unified interoperable cybersecurity platform. And the aim of that was what we call effect-based, which is we wanted to produce effects, and those effects of detection, mitigation, denial. All of those kind of effects we wanted the instrumentation to bring. And also, we wanted us -- it to bring us visibility because once you've got command control in your networks from the adversary, quite often, if they're in there persistently, there's a time between them being in there and then quite a lag between the time that they will act, it will wake up and it will go and hit the target assets or take something down.

So Cisco were wonderful when we were brainstorming this in a room, some wonderful individuals who contributed to my vision. And I guess, what I loved about them all was they didn't tell me how to do it, they kind of coached me gently into the right area, and it's because they had thought about this before, they thought about what customers would be coming to them for, which is that kind of single platform. And then really, to finish that off, we've got 2 other partners, Exabeam, again, another fabulous set of people, great approach, great company. They do my next-generation SIEM, which is an event management system. And then (inaudible), a British company. I outsource all of the monitoring -- well, not all of the monitoring, but some of the monitoring to them so that actually I've got an extension of my team that makes sense in terms of balance, proportionality, costs and investment and it's in place now.

The team of analysts are getting used to the instrumentation. They're finding stuff. We're closing down stuff quicker because of the instrumentation, but we are still in the operationalization mode. Very hard to say that, but it's -- it does take a year or 2 to really mature all of that into a very effective cyber defense. And sorry, the last one, it's not just about defense, of course. We have a doctrinal approach to not just defending, but getting into the network and finding out where the persistence is in doing threat hunting. So it's very important with the adversary to get on the front foot as much as the defensive foot. And that's kind of the journey we're taking at the moment.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

Mick, can I ask you a question, how are the students involved in your side?

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**Mick Jenkins;BrickTech;Chief Security Officer**

Yes, that's a very good question. So I have 2 interns, student interns who asked -- I love them. I think they come with lots of energy and vibrancy. And they're keen to go into the world of cybersecurity. And we're able to show them the different pathways and different career routes. And I really enjoy coaching and mentoring them because I think I'd like to see them have a pathway to get to my position. So we have 2 interns, and we do bring in some of the students to show them the tech, not in any great detail, but to show them that they can come and talk to us. We have a surgery every Friday, when if they've got a problem with the -- they think they've been hacked or there's been some fraud, cyber-enabled fraud or they've been a target, they can come in to IT and we have a surgery to help them out, make friends with them.

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**James McNab;Director, Cybersecurity Marketing, Europe, Middle-East, Africa, Asia Pacific**

Tremendous unique opportunity for them to be able to get the right balance of the academic educational experience but also the practical exposure to a real life cybersecurity environment.

**Mick Jenkins;BrickTech;Chief Security Officer**

And I think we need to do much more in fusing academia and industry. So that, for example, I also have some cyber researchers who use the data that we collect to do cyber analytics. And that fusion between industry, academia and research could, with the right thinking, can develop new ideas and innovation that government need, communities need, businesses need. So I'm very keen to explore that. As part of the next stages actually.

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**Unidentified Participant**

And Mick, could you tell me how you get on yesterday at the CISO day. Did you enjoy that? You were speaking, weren't you?

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**Mick Jenkins;BrickTech;Chief Security Officer**

Fabulous day. Yes, I [did a] chats yesterday at the CISO day. Fabulous day. Some very, very interesting individuals who were briefing across different sectors. And for me, I was hearing a lot of innovation from people much younger than me, of course. And it was wonderful to hear their energy, positivity and actually trying to innovate, to do things in a smarter quicker way and the one that came out for me was DevSecOps, where actually, developers have got to develop a pace to get the commercial advantage, but they don't like cybersecurity people stopping that pace and slowing it all down.

And there's some marvelous innovation that was brought to us, not just in that particular world, but from Cisco individuals. They have a great CISO advisory team as well, which are great for CISOs to bounce ideas off of because I want to see who's leading, who's got the new idea, who's got the innovation. So I took away a lot away from that yesterday. It was very good. Well, put together by -- I have to say, first-class by [Christina], did a wonderful job.

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**Unidentified Participant**

Bravo. And James, what are Cisco's priority when it comes to security now?

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**James McNab;Director, Cybersecurity Marketing, Europe, Middle-East, Africa, Asia Pacific**

Well, we want to help our customers a lot, some of the areas that we've touched on this afternoon. A lot of the challenges that our customers face are associated with complexity. I mean Mick was talking about dealing with a small number of partners, and Vince touched on that as well. We have customers that are dealing with dozens and dozens of cybersecurity solutions from different vendors. And those solutions were not in -- were not necessarily invented or developed in a way that makes it easy for them to work together. So the way that we can help our customers is in a very practical way. By ensuring that all of the elements of their solution that come from Cisco, we take away a lot of the complexity of that integration by ensuring that if the threat is detected in one part of the infrastructure that detection will apply to the whole environment.

So a threat can't find a way in through the back door if it's been blocked at the front door. So reducing the complexity, facilitating visibility across the entire cybersecurity infrastructure to make it easier for the operations teams to be able to have a much more manageable environment. And developing a partnership with our customers that goes way beyond any particular project that they've got, but ensuring that their outcomes are achieved over a longer period. So very much in line with what Mick's been talking about a partnership. We want a partnership with our customers where we can help them achieve their business goals and achieve success in their own businesses.

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**Peter Jones;Cisco;Distinguished Engineer**

So Peter Jones from Cisco, it's great. And thank you very much for investing in Cisco and committing to Cisco, that's wonderful. But I sense that we have a responsibility to you now. So what would you like to see from Cisco in terms of sort of value to you over the next sort of coming period?

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**Mick Jenkins;BrickTech;Chief Security Officer**

Do you want to go first or...

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

Was this for both of us?

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**Mick Jenkins;BrickTech;Chief Security Officer**

Yes. I mean -- and I think for me, I need to keep pace with the adversary. So I think I've mentioned this morning in one of my talks, you've got to keep pace with what the adversary is doing, developing what's their innovation so that hopefully, your teams and R&D, research and development, Talos are getting ahead of the game. So I want to know what you're developing that I can bring into the platform and future-proof and get ahead of the game. And I think we've got a bit of work to be done there, but I know that the sort of intent exists to keep coalesce that partnership so that we keep journey going. And we're always looking ahead dynamically. And I think that's my answer.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

Yes. Well, for the Port of Rotterdam, it's really looking in the long term. We're really making a shift from being just the physical port, also a digital port. But in a physical world, we are really known for the reliability for safety, for also physical security. So when we make this journey with digitization, we really need Cisco to offer the same kind of core values like reliability, certainty for our customers, our users of the port so they can invest in our port also for the coming years and be sure that they can do their business. Because we are introducing new functionalities, new connections in the port.

But still, the physical things still have to work. And because it gets so entwined with each other, we really want our partners to look at it the same way that it's a long-term journey. And our company will still be here in 100 years. I don't know if Cisco will be here in 100 years.

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**James McNab;Director, Cybersecurity Marketing, Europe, Middle-East, Africa, Asia Pacific**

We sincerely hope so. If we are continuing to be effective in [delivering] value to you and developing our partnerships, we'll be right there with you, Vincent. We will be looking a little bit old by then, but we'll stay with you.

I think that's -- certainly, we see that as being absolutely key to the most successful relationships that we have with our customers is where our long-term vision and our strategy for cybersecurity is aligned with your business objectives. And that's where you get the strongest partnership where our successes actually become intertwined. We will only be successful if organizations like the University and like the Port of Rotterdam, if we can actually help you achieve your goals. So that's really important to us as well.

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**Vincent Campfens;Port of Rotterdam;Digital Strategy Manager**

And do you -- because sometimes, I think about it, that maybe it's a wrong talk, but how cybersecurity organization, if that can be a differentiating factor, that people choose for university or people choose for our ports because we're the most cyber secure. I don't know. I'm just thinking about it?

**Mick Jenkins;BrickTech;Chief Security Officer**

No. And again, it's something I talked about yesterday is that one of my visions was not just to become a -- an able business, but to become a business winner. And that was part of the vision when we started with Cisco. And I'm delighted to say that we've won a contract of late, where they did due diligence on us as a university that was highly rigorous in the space of protecting data, cybersecurity, information security, privacy and data protection and we won the contracts because we had developed something that was maturer. So in a way, businesses can, not just enable, but win business through good thought leadership really.

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**Unidentified Participant**

And if you do want to find out a bit more on the Cisco website that just launched as an upshot story of Mick and the University and you've got video that Vincent's done for us. And if you want to find out a bit more about joining the Gateway community and do find one of the people in the navy blue Polo shirts, and they'll tell you all about how can get first access and use and help build your personal brand. Otherwise, please join me in giving a warm round of applause, and thank you so much for joining us Mick, Vincent and James. Thank you very much.

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## PRESENTATION

**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Hello, and welcome to AdvoChat. So AdvoChat is the area within Cisco Live where you can kick back and relax and here all about customers of Cisco sharing their experiences about how Cisco Technologies help them tackle challenges within their organizations and also help them achieve their business goals.

Now it's relaxed and chatty, and we want to hear from you too. So we make sure that we've got time for a Q&A session with the AdvoChat panel at the end. So we will certainly be wanting to hear your question.

So this AdvoChat is all about how technology has been enabling some of our Cisco customers to respond to transitions in styles of work, market trends and customer demands. So joining me on the armchairs are John Nield, Head of Operations and Engineering of the National Trust; Adan Munoz, Head of Digital Transformation of MasMovil; Franz Hillebrand, CIO of Signa; and Cisco's Aruna Ravichandran, VP, CMO of Webex and Collaborations. So join me in welcoming them to AdvoChat. Welcome.

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## QUESTIONS AND ANSWERS

**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

So let's get to know each other a little bit. I'd love to hear a little bit about your organization and your role within it, and perhaps we could start with you, Franz, please?

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**Franz Hillebrand;SIGNA;CIO**

Thank you. Well, Signa, Signa is a company based in Austria. We started 2 -- 20 years ago. We have 2 divisions, 2 big ones. We have a retail division, and we have a real estate division. In the retail division, we have about 45,000 people in Germany space. And then in the real estate business, we have around 500 people. And the holding structure is the real estate business too.



With Signa in Germany, Germany is a big market for us. We have (inaudible) there. We have Signa Sports United there. This is called [Foreign Language] something of the sports stuff. We are owner of the Chrysler Building now in U.S.A. We bought this a half year ago. We have a [massive] [response in the print media. And yes, that's Signa.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Okay, wonderful. And Adan?

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Yes. I'm from MasMovil, as you said. MasMovil is the fourth telecommunication operator in Spain. We are pretty small compared to our other 3 competitors. We have 1,100 employees, more or less, and we have around 5 offices all across Spain. And we just acquired a new company in Portugal. So we are expanding a little bit in Iberia.

We are -- well, as a telecommunication operator, we are just trying to smooth less, give our customers as many services as possible, all related to the network.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

And your role is Head of Digital Transformation.

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Yes. Sorry. Yes. My role -- yes, I'm Deputy CIO, and I'm in charge of methodology in general. And now we are in this huge digital transformation journey, and I'm part of the leading team.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Wonderful. And John?

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**John Nield;National Trust;Head Of Operations and Engineering**

Yes. So I'm head of IT Operations and Engineering at the National Trust. The National Trust is the biggest conservation charity in Europe. We are the second biggest landowner in the U.K. We have over 14,000 employees, 70,000 volunteers and over 350 properties. We were founded 125 years ago by 3 people that believed that we need to protect places of natural beauty and historical interest. So yes, that's National Trust.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Brilliant. And what about your role within it?

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**John Nield;National Trust;Head Of Operations and Engineering**

Yes. So I'm Head of Operations and Engineering. So I'm responsible for implementation of new technologies into the trust, but then also supporting those new technologies.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

Wonderful. And Aruna, perhaps you can tell us it about your role within Cisco?

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

Hi, Aruna Ravichandran. I'm the CMO, VP of Marketing for the collaboration business at Cisco. My interest in this space -- because I'm not a traditional CMO, I would say, I'm more of a technology CMO, and I'm very, very passionate about the workplace transformation our customers are actually going through, more from a technology perspective, but not just from a technology perspective. When you're going through a workplace transformation and you're changing your workplace, it's about going through a cultural transformation. And how do you basically do the change management? How do you basically work through the quad-generational workforce because currently, in the market today, you have to deal with the quad-generation workforce. You have the baby boomers, Gen-X, Gen-Y and Gen-Z, and how is all of that coming together from a people, process and technology perspective is what I'm actually very interested about.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

And Aruna, the workplace is changing rapidly. So why do you think that is?

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

Like -- I think there are like 5 key trends, which are playing a big impact in the marketplace today. The first one, like I said, it's -- there is an evolving landscape of the quad-generational workplace. So if you look at Forrester, they say that by 2025, 75% of the workforce is going to be the millennial population. And if you think about the 4 generations, the baby boomers have mostly retired or are about to retire, then you have the Gen-X. The Gen-Y is also called the millennials, and then there is the Gen-Z.

So the millennials and the Gen-Z their care abouts is very, very different. When you think about the baby boomers. For baby boomers, it's all about the face-to-face interaction because they were not born in the digital era. And if you think about the Gen-Z, as well as the Gen-Y population, they were born in the digital era. Everything is about the cell phone, it's about mobile, it's about video. And they don't want to even have the face-to-face interaction. Think about if you all have kids who are Gen-Z or even the millennials, most of the time, they'll text message you. They won't even pick up the phone and you actually call them.

And so they are entering the workforce, the millennials, so how can you basically -- how can the technology, basically enable for all of the 4 generations to actually work in the workplace is trend #1.

And then the trend #2 is the work style is also changing because there is a huge increase in a concept which is called gig economy where more and more people are actually going into contract work, like agency work, contractors. Why is that? It's because people don't -- they want to work in their own time. They want to be able to work anytime, anywhere. And again, you have to now -- given that this is called the gig economy, and you have to be able to have those people come into your workplace, it's not just the millennials and the Gens-X, but you also have to think about how do you basically enable it with the technology, so that you can have the gig economy workers come in to your workplace because security becomes an important aspect at that particular time.

And then the third one is all about the technology disruptions. So when I think about technology, AI is playing an amazing role when you think about the technology disruption, especially when you think about manufacturing use case or a telemedicine use case or even in terms of education use case. More and more people are actually using AR/VR technologies in order to basically make that communication actually happen. And so -- and AI is, again, playing a big role in terms of voice assistance, in terms of facial recognition, which is further enabling all of the transformation happening in the workplace.



**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

And John, what were you -- what were the challenges, the National Trust was facing that led you to workplace transformation?

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**John Nield;National Trust;Head Of Operations and Engineering**

Yes. So there are a key couple of changes that we have -- because we're so dispersed across the U.K. We had 300 sites, all looking to meeting local hub offices. So there's a lot of travel, a lot of expense as well. But then as well within our central offices, we've grown as an organization, our staff base have grown and our head office was overcapacity. So we didn't want to be in a position where we were constructing extension on our buildings, looking at new offices so we took that decision to actually make better use of the space that we've got, but then also look towards a more flexible working model. So yes, they were the 2 key challenges.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

Mr. John, but did you have any of the challenges with respect to multiple different tool sets in terms -- because you said you had 300 different sites across the board?

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**John Nield;National Trust;Head Of Operations and Engineering**

Yes, that's right. We're very heavy e-mail usage at the time. We had Skype for business, but predominantly only for instant message and Cool Link. But then again, some people weren't using digital. We weren't communicating in the tool out there. The quality wasn't great as well with some of the calls. So yes, we have multiple tools. Slack is another one that we use within IT. But nothing -- one single platform across the trust. So ...

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

And again, what role has Cisco had in your workplace transformation?

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Well, we are really excited at MasMovil because right now, we are just starting up with this. I mean, we've been working and changing the way we work for years now, a couple of years maybe. We are going into a more agile structure. And we have -- as well, we have a lot of different tools in place that we can use, but we don't have clear guidelines. So people are sometimes confused. They don't know exactly from which channel is better to contact someone. These kind of things. They are happening constantly.

And because of our growth -- we are growing a lot. We have a very, very exciting opportunity right now because we are moving. We're moving in a couple of months. We've been working on this for a long time as well. So right now, we can do both. We can change the workplace environment, the physical workplace, but also the virtual workplace.

So for that, we've chosen Cisco to just to dress up our rooms with a lot of new toys with video conference rooms, with boards, with everything. And we are setting up rooms with different functionalities. Right now, we are in an office that has -- they have a -- they are useful rooms with projector and monitor, cables around, these kind of things. But we don't have specific feature rooms. So we are moving into that using your -- I mean, using Cisco solutions.

And also, we are giving our employees the opportunity to use Webex Teams. And we will try and create a smooth journey. So everything will embrace this new digital, and we will go into that.

**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

But you currently have other tools, right?

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Yes, we have the whole package. We have the Skype, we have Slack, we have Microsoft teams, we have everything. And people are using a lot of the corporate phones, so they just phone each other or they use WhatsApp or -- so we have the whole package. Yes.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

So the primary goal is to standardize on a platform to give that common user experience across the board?

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Yes, the main goal right now is, yes, to change the way we use the meetings. I mean, the physical space and also the tools and to give the -- all of the employees this unified tool and then just put it inside workflows that are already in place in the company, putting them into Webex Teams. Yes.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

And then -- and Franz, what role does Cisco have in the Signa workplace transformation?

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**Franz Hillebrand;SIGNA;CIO**

We started this transformation years ago, and we have a very clear strategy, and we have not this tool problem in the Signa because years ago, we started with an implementation plan, with user adoption plan, and we tell the user in the onboarding sessions. They stay in the Signa at the first days and we tell them how to use the tools, why we want to use this tools. So one day session, we explain sharepoint and everything there, but it's one method of saying of how they should use our collaboration tools.

And we have a seamless integration. We can have the phone calls with the video on their phones. We can have a video conference with the big systems. We have the Webex Teams inside, we can collaborate with the room systems or with the phones. So we have a seamless integration from all these tools. Now we have small problems with Microsoft teams versus Webex Teams. It's the name that's sometimes confused. But Cisco knows this thing.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

So I tell you this too, right? Like -- yes, I've heard that from a lot of customers between Microsoft teams and Webex Teams. Then Sri Srinivasan, our GM, actually spoke at the key note yesterday. One of the key things he talked about is that we are bringing to market this concept called unified client. So there is not going to be Webex Teams, there is not going to be Webex Meetings, there is not going to be WebEx Calling. There is only going to be one, and that is Webex. So whether you want to join a meeting, whether you want to basically do a call or you want to do message someone, all you have to do is to bring that single Webex app, and it will allow you to do call, message and meet across the board. So we've taken away the problem.

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**John Nield;National Trust;Head Of Operations and Engineering**

Mind changing.

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**Adan Munoz;MasMovil;Head of Digital Transformation**

So how did you manage -- I mean, I don't know if your company asked this, but when you do an acquisition of another company, how do you bring them into your culture because one of the problems that we have is that our CIO -- I mean, our CEO wants to -- I mean likes to go around and purchase companies. And they were -- and then he comes to us and says, okay, now integrate. And integrating is not that easy. I mean you can integrate from a technical perspective but the main thing is a cultural point of view. We have many cultures within our company. So we have different people that work in a different way. How do you manage to change that?

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**Franz Hillebrand;SIGNA;CIO**

[Capital work.] We come and bring our systems in. So that's the only way, yes.

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**Adan Munoz;MasMovil;Head of Digital Transformation**

So that's ...

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**Franz Hillebrand;SIGNA;CIO**

The only way. Yes.

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**Adan Munoz;MasMovil;Head of Digital Transformation**

[So for today] ...

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**Franz Hillebrand;SIGNA;CIO**

Not for today. Well normally, we have a transition phase from about 6 months, but then we stop the old systems and transform it to the new system.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

So from a change management perspective, like what they're doing is like spot on. So employees across the board, they'll probably (expletive) and moan. They're not going to be happy because the new company, they have the tools of choice. And nobody wants to change. But if you go at it with a mentality that, hey, we are able to provide an amazing experience, and this is what you actually have from day 1. And people will adapt and change. But again, it has to come from the top and your CEO has to be able to support you in that initiative.

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Yes. But the thing is when you acquire a company, you acquire it because of mainly 2 things, because they have market share, and you want their market share or because they do something better than you do, and you want to improve, right? So wouldn't you will lose that second gain if you just force them to work as you work instead of learning from them?

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

So it depends upon the company. So most of the startups, when you acquire them, they're going to have a lot of the tools, which they're used to -- and especially with startups, if you think about messaging platform, they probably have Slack -- a lot. And so again, it is change management.

And so you acquired them because you saw a value and a benefit, and they have to become a part of your culture. And so you define the culture, which they'll probably have to embrace.

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**Franz Hillebrand;SIGNA;CIO**

And you must integrate them in your communication structure.

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Yes, yes.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

Yes.

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**Franz Hillebrand;SIGNA;CIO**

That's the same here.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

In fact I saw that -- like one of the companies who was there at the Workplace Transformation Summit we ran in London last month, and the moderator of the panel there was Broadcom. I don't know how many of you know actually Broadcom. They are a \$22 billion chip company in the world, and they have been on an acquisition spree. Each acquisition is \$20 billion, \$10 billion. And they're a chip company, and they're transforming their model into a software company. And so they acquired Symantec, they acquired CA Technologies, they acquired Broadcom, and we asked the VP of Collaboration, how do they handle their acquisitions? They did say exactly the same thing Franz actually said. Day 1 after the acquisition completes, they are basically -- are shipped a Room Kit Mini and they're given the standardized platform, which they have with Webex, and people actually come on board. Initially, people are upset about it, but they basically embrace the journey.

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**Franz Hillebrand;SIGNA;CIO**

And from the support perspective, it's very -- it's better for you. You know how to support all the things, yes? So if you try to support all these different stuff, no chance, I think, sure?

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**John Nield;National Trust;Head Of Operations and Engineering**

Yes, yes, correct. I think that's -- looking at it back now because we had to do a whole network refresh. It was new switches, routers, access points. And when we were looking at different collaboration technologies, actually, to go with Webex Teams the natural fit because it's built on Cisco technology.

So we've got one vendor who is supporting our network and our collaboration and telephony. So yes, certainly makes sense.



**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

And the other thing we also have with our Webex portfolio is that our platform with Webex, whether you do call, message and meet, it's an open platform. And so even if you want -- so you have standardized on Microsoft for the productivity tools with Office 365. Like Sri talked about it yesterday is that we interoperate. We interoperate with Office 365, we interoperate with salesforce tools, we interoperate with ServiceNow, we interoperate with (inaudible).

So we have a huge ecosystem across the board. So again, that will be another way to basically bring people along because we have the interoperability.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

And Aruna, what are the outcomes that customers are seeing with a successful workplace transformation?

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

So when you -- this is -- I want these gentlemen to actually validate it. And as I've talked to a lot of the CIOs, who come to San Francisco, which is where I'm actually based and I ask them, like, what does a successful workplace transformation look like to you? And there are 4 areas people have actually mentioned to me, and you guys let me know whether you agree or not. Or if there are some -- if there is something new, I would love to know that as well.

One is, it's about being able to increase the employee engagement and productivity, right? So when you want to basically provide that amazing experience, your employees, if they experience that amazing experience, which means that they'll be able to bring new innovations to market much more in an agile manner. And if they are able to bring innovations to market, then you have an opportunity to basically have a huge influence on your top line as well as your bottom line. And so employee engagement increases the agility, which in turn increases your revenues and your profit. That's number one.

Number two is about winning the war of talent because, like I said, companies who are born digital, it's very easy for them to basically get the millennials as well as the Gen-Z to come work for them. But companies who are transforming digital, who were not born in the digital era, but they still need to employ the younger generation who is coming into the workforce, if you do not provide that kind of an environment, you won't be able to attract the younger generation. So winning the war of the talent is a second metric a lot of the companies are actually focused on.

Number three is cost. Like the real estate costs are increasing worldwide, and you have to do with -- you have -- you are given only a pool of budget. How can you basically stretch the budget and while delivering what the business actually needs. And so reducing your cost while still delivering that experience is absolutely important. And last, but not the least, customer experience...

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**Franz Hillebrand;SIGNA;CIO**

Sorry, point three I can't agree as a real estate company.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

You can't agree?

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**Franz Hillebrand;SIGNA;CIO**

No, you must have [much] floor.





**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

That I agree given that you are a real estate company. So what do you guys think about those 4: customer satisfaction, reducing the cost, winning the war of talent, employee engagement and productivity?

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**John Nield;National Trust;Head Of Operations and Engineering**

So I would agree with everything that you just said there. I think the things which I would add is well-being for our staff as well. That's been a real positive point and people were seeing actually, they don't have to travel as much now. And they've got time back with their family to do more things in their life. So, yes.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

And -- so talk about that, right? Like you actually -- some -- last month when you and I chatted, I loved the KPI. You actually shared in terms of the outcome. I'm sure the audience would love to hear that.

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**John Nield;National Trust;Head Of Operations and Engineering**

Yes. So one of our execs posted on our Internet, who's a big fan of the technology, and he's adopting it now, and he's -- he posted on the Internet that he just had a meeting with 9 different people across the country. It saved a 1,000 miles of travel for the organization, 34 hours of time for everyone who was on that call. So that was time back and ties back to that well-being piece.

But then finally, the bit which ties in with our mission statement of being carbon net neutral by 2030 was actually that saved one tree, just in that one meeting, 2,000 meetings a month, a year, then that's a small forest.

So it really does just help quantify that this is helping the environment as well. So yes.

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**Franz Hillebrand;SIGNA;CIO**

But we have a new chapter we've created or we've prided for futures. So everything is talking about not flying, staying, don't go, more [PO], everything. And this technology will help us. Years ago, flying was sexy for employees. At the moment, the feeling of flying is not sexy anymore.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

So what -- for you, Franz, were you guys able to actually measure in terms of cost? Or you know that there has been a tremendous reduction in costs across the board from a cost savings perspective?

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**Franz Hillebrand;SIGNA;CIO**

We have not the cost saving perspective for this because we have -- make many mergers and acquisitions. So we have the time is the cost saving. If we are faster in meetings, if we are more efficient in meetings, we are -- the cost savings for us because a deal, if we make the merger one week before we planned, it's better for us, yes?

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**Adan Munoz;MasMovil;Head of Digital Transformation**

So I agree with everything you've said, of course, and I would like to go deeper into the fourth one, the NPS, right?

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

Yes.

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Because I truly believe that the only way that companies can really provide our clients our customers with great experiences, with great services is if we really speak the same language that they speak, and we are also customers. So we already know this language. The only thing is that we haven't switched our mind yet to realize that we can work in a different way. We can truly work in a different way today. This is not about the future. This is not -- it's something that can happen from one day to the next one.

So in the end, I agree completely with you when you said before that this is a matter of culture. This is not about technology because technology ...

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

Is an enabler.

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Yes. Becomes obsolete very fast. Today, we're talking about videoconference, tomorrow, we will talk about, I don't know. I was going to say teleporting, but maybe that's too much. But all around us -- so yes, the important thing is the mindset. That the people, the only way that we can create cool things and cool services and great new value-added services to our customers is if we learn how to speak these new languages.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

And then, Adan, so following Cisco's announcement of the cognitive collaboration. What are your thoughts around how AI is empowering the collaborative and connected workspaces of the future?

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Well, the future is unknown for sure. I don't have a crystal ball. And I embrace the uncertainty. That's really cool. I mean, the best use of the technology that exists today is not yet created, I think. So for this technology, maybe tomorrow, someone will come out with a new way of using it, and that's awesome.

And we have to enable our employees to have this liberty, the [experience] to really play with the technology and find new ways. But yet, for example, the cool things that you already have presented here in Barcelona. I'm really looking forward to see the transcripts and the real translation and to have caption cases. All of this, I think, is going to be amazing.

In the end, I think it's all about letting the employees really focus on the value-added tasks and not spending time into taking notes or I don't know, processing notes later to put in a PowerPoint. So really trying to make everyone just spend time on what really matters.

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**Franz Hillebrand;SIGNA;CIO**

But what we see is the skepsis about this technology, AI and it's my name under my hat and some -- it's a little bit spooky for the end user at the moment, right?

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Yes, it is.

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**Franz Hillebrand;SIGNA;CIO**

We try at the moment, something different that we have one room enabled with this technology and bring in our employees and say, okay, this is the future. This is -- there you can test it. I don't see at the moment that we can bring it live in all our employees. It's too spooky and GDPR and all those things, you have surround.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

So you're talking about the facial recognition and the People Insights? Okay.

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**Franz Hillebrand;SIGNA;CIO**

Face recognition, if I talk about transcription and all the things. It's a little bit creepy.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

The transcription, I would say, is -- doesn't hit any of your data privacy issues because it's going to stay in the cloud, and it's managed within the Webex data centers.

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**Franz Hillebrand;SIGNA;CIO**

We know this.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

Yes. Yes, but I think.

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**Franz Hillebrand;SIGNA;CIO**

But tell that to employees, right?

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Yes.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

Yes. So with the People Insights part, I definitely get that because people don't want to expose their private information and they feel that they're exposed. Totally understand that, yes.

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**John Nield;National Trust;Head Of Operations and Engineering**

Yes. I think the mindset needs to change in respect to actually, when you've got someone sat there, taking actions, minutes and doing that transcribing, it gets sent on e-mail anyway. So it's just changing people's mindsets, like you said, I think. Isn't it?

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**Franz Hillebrand;SIGNA;CIO**

The feeling of lost control.

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**John Nield;National Trust;Head Of Operations and Engineering**

Yes, yes.

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

And, I think it's also change management there, right? So recordings -- you can record a meeting forever. But how many times you go listen to your recording. I would say, one, let's say, 50 people attended the meeting and there were 80 people who were invited, and the 30 people didn't join the meeting. I bet one person would not listen to the recording, unless it's an absolutely important thing.

But what are the chances, people will actually read the transcription? Very high. Because you can actually put a search to see whether the meeting actually focused on your area of interest, right? So that part actually helps the employees, if they were even not able to join the meeting and takes away the challenges you actually have with the recording.

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**John Nield;National Trust;Head Of Operations and Engineering**

Yes.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

And Aruna, could you share a little bit more about Cisco's recent announcements in the collaboration offering?

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**Aruna Ravichandran;VP, CMO of Webex and Collaborations**

So I think you talked about it. So we had some amazing innovations where Sri actually launched yesterday during the keynote. One is around AI. So we basically announced the integration of Voicea which we acquired a couple of months ago into our Webex platform.

So before a meeting, during a meeting, after a meeting, you'll now have access to your entire meeting notes. You can enable that using voice. So you can say, hey, Webex, take an action item, hey, Webex, take meeting notes and Webex will basically transcribe everything. And when you basically call out those particular keywords, everything will be highlighted and makes it much more easier if you are a Chief of Staff or you're in operations, or -- you don't even have to take any more notes across the board.



The second thing is that we announced that the transcription is going to be available in Spanish, but we'll also support other languages soon. We didn't announce which languages, but more to come about a lot of the languages, especially here in the EMEA region.

In addition to that, we are taking that transcription into our contact center. I'm not sure how many of you leverage our contact center part of our portfolio. With the agent experience, it's tremendously going to be amplified because all of the conversations are now going to be transcribed. It'll help with the agent training, it'll further help with the AI part of their conversation with the IVR. If you want to have a conversation with an IVR agent, it'll help you over there as well.

In addition to that, we also launched a brand-new SMB device, which is called the Webex USB. So we had launched the room-kit device. It's an expensive device and for our customers who don't want to pay the whole thing, there is a reduced version of that where you won't get all of the capabilities, but you also have the ability to basically move into the room-kit mini if you choose to do so.

We also launched -- we basically came up with the data privacy value part, where you now basically have the ability -- we had that, but we further amplified it with the data privacy issues where all of your keys, all of your data, which is being exchanged to Webex Teams is now going to be local. And it's especially important in the EMEA region, given the GDPR regulations, you guys actually have.

And so these were some of the big innovations, which we launched and brought to market.

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**Ella Williamson;Gadget Girl;Presenter, Speaker and Writer**

I have 3 quick messages. So firstly, this has been streamed to the Twitter, which is @CiscoGateway. We are in the gateway here within Cisco Live. If you want to find out a bit more about how you become a gatewayer to joining the Cisco networking community. Just find someone in the navy-blue polo shirts, and they'll tell you more about it, how you get first access to news, still with your personal brand and then thirdly, there -- if you are a gatewayer and you want to earn around 450 gateway points, then there's somebody here that can talk you through. Her name is Danny. To answer a couple of questions on video. So go and find her.

But meanwhile, all that remains is to me to thank the amazing AdvoChat panel. So thank you so much to all of you. Thank you to Franz, to Adan, to John and to Aruna. So thank you ever so much.

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**Adan Munoz;MasMovil;Head of Digital Transformation**

Thank you.

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## PRESENTATION

**Nish Parkar;Cybersecurity Communications Manager**

Barcelona 2020, and we come to the end of the first day so it's time for our next daily show. So lots of people are kind of heading towards the Keynote, we're going to be bringing you that very soon, but just before that, we're going to be chatting a little bit about the start of the day. And we'll be building it into that Keynote and taking you there. 17,000 people here in Barcelona are here at the show are also getting very tonight's party. But we'll have Nile Rogers & Chic. So very excited for that myself as well. But just before we get to the Keynote, we get to the party, I'm thrilled to be joined by Charaka. So hey, Charaka, how are you?

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**Charaka Goonatilake - Panaseer Limited - CTO**

Yes, really good, thanks. Thanks for having me.

## QUESTIONS AND ANSWERS

### **Nish Parkar;Cybersecurity Communications Manager**

Thank you for joining us in the studio. So you are the Chief Technology Officer of Panaseer. So tell us a little bit about Panaseer?

### **Charaka Goonatilake - Panaseer Limited - CTO**

Yes. So Panaseer is the leading product in continuous controls monitoring for cybersecurity. Basically, we help security leaders and security teams get visibility into the organization security posture. So we help them construct complete inventories of all the assets they need to protect. We assess whether the controls are deployed everywhere where they need to be to protect all those assets. And then we measure the performance of all those security controls to make sure that they are performing optimally.

### **Nish Parkar;Cybersecurity Communications Manager**

And we've had a huge focus cybersecurity here at Cisco Live Barcelona 2020. So what would you say is really kind of the customer needs or what's the challenges that you're trying to solve with Panaseer?

### **Charaka Goonatilake - Panaseer Limited - CTO**

Yes. So we see a couple of different scenarios. We see customers who have no visibility into their security. They're really quite early in their maturity curve. And they don't have the insights they need to make security decisions. And then on the other end of the spectrum, we see customers who are spending a lot of resources trying to get their visibility manually. And the reason why it's so hard to get that visibility is first of all, you've got all these security tools that are out there, some customers that we're working with have over 50 different security tools that they need to manage. It's impossible to get visibility across that amount of security tooling. And then on the other hand, you've also got the IT infrastructure landscape that's evolving quite rapidly with everything leaving the data center, everything is moving into the cloud, into mobile environments, into IoT environments. So all this complexity in the technology landscape is making it really hard to get that unified view that the security team needs.

### **Nish Parkar;Cybersecurity Communications Manager**

And that's sounds really difficult with kind of skills gap that we've got in cybersecurity right? And the lack of resources that a lot of organizations have these days?

### **Charaka Goonatilake - Panaseer Limited - CTO**

Yes. I mean, we see some security teams are spending 30% of their time creating reports to get this visibility. So that's 30% of their time that they're not spending doing security. We need security teams to actually be doing security and protecting their businesses.

### **Nish Parkar;Cybersecurity Communications Manager**

Yes, definitely. So, obviously, you mentioned cybersecurity key focus and some of the challenges. So how does Panaseer actually work?



**Charaka Goonatilake** - *Panaseer Limited - CTO*

Yes. So it's all a data-driven approach, really. So we have a connect to catalog over 70 different connectors, a whole load of Cisco integrations as well, which allows us to reach into all of these IT and security systems. And collect the data that we need to mine to get the visibility. And then essentially, what we do is we construct dashboards that present reports of this visibility to different stakeholders.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. And so obviously, we talked about some of the challenges. But why is this so hard to do? What's unique about Panaseer? What are you bringing to the table for customers?

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**Charaka Goonatilake** - *Panaseer Limited - CTO*

So again, it really comes down to the data. There's the volume of the data. There's the distribution of the data. It's really spread across so many different data silos and also, there is a diversity in the data as well. You've got every system is talking about the same security artifacts. So they're using different formats and different languages to do that. So what we do is bring all that data together in one place and unify it, standardize it so that you can do consistent and accurate analysis on that data.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. And obviously, here in Barcelona, as already mentioned, we've got around 17,000 people here at the show. So what brings you as an individual here to Cisco Live? And what are you bringing to Cisco Live community with Panaseer?

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**Charaka Goonatilake** - *Panaseer Limited - CTO*

Yes. I mean, we're huge fans of Cisco Live. I mean, this is the third event that we've been to. We've got a whole range of relationships with Cisco. So Cisco is, first of all, an investor in Panaseer. We're also -- we've also provided the product to Cisco. So Cisco is a customer of ours. And we're also a close partner of Cisco. As I mentioned, we're deeply embedded in the Cisco ecosystem with our integrations. And we can provide visibility on top of all of the security products out there, Cisco as well as non-Cisco products.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. And obviously, with Cisco strategy, we're always investing in startups. So we think have really great potential and are aligned to where we're trying to go, obviously, with our own security approach as well. So what is it that -- how -- tell us a bit about your journey with Cisco? What's that been like? Obviously being quite a small startup and -- but you kind of see it here at the show the kind of scale of Cisco, right? So what's that journey in that?

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**Charaka Goonatilake** - *Panaseer Limited - CTO*

Yes. I mean, it's been quite overwhelming actually at times. There's so many different strands, many different people to meet and so many different opportunities that are available to us now that we're part of the Cisco ecosystem. And really, it's all about how do we focus our resources to get the most out of those opportunities that you guys have made available to us.

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**Nish Parkar;Cybersecurity Communications Manager**

Got it. And just one last question because obviously we're coming towards the end of the show here. So what's been your highlight of the show this week?





**Charaka Goonatilake - Panaseer Limited - CTO**

So I've made a whole range of different potential customers, potential partners and what I'll be taking away is trying to figure out what the next steps are with those customers and prospects. And seeing how we can capitalize on those opportunities for Panaseer.

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**Nish Parkar;Cybersecurity Communications Manager**

Amazing. Well, thank you so much, Charaka, for joining me in the studio. We're going to take a look at this 1-minute Cisco video. It was another event that happened this week, take a look and stay tuned.

(presentation)

Wow. What an inspiring video. I love that and I really wish I could make it down to the event, but there's so much going on this week, I didn't get a chance. I'm definitely going to make sure I do that on my next Cisco Live. So Steve and Zane are out in the Keynote space, so I'm really excited to check in with you guys, how's it going over there?

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

Hello Nish -- my Nishi, we're going to call her Nishi here for the whole -- for the time. Look how cool this is. All right, so they've opened up the main doors. We've got the band jamming back over here on this side. They keep putting the NetVets up on the main screen. And as I said to Zane earlier, my name is never up there in NetVets, what's the deal?

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**Zane Powell;Associate Sales Representative**

I don't know, Steve. Why is Steve name not up there?

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**Steve Multer;Chief Storytelling Officer**

I don't know. This is my first time out here.

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**Zane Powell;Associate Sales Representative**

My name is up there.

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**Steve Multer;Chief Storytelling Officer**

What? Your name is up in NetVets already? All right, I'm going to talk to somebody. I'm talking to Bonnie. We're getting this thing taken care of. All right, so let's talk about what's going on. We're about to move into this closing Keynote, Richard Browning, pretty amazing dude, right? So I mean, he's the rocket man. He's the guy, he's actually, I believe, we're going to see something at the beginning. I'm not going to give it away here right now. But what's so cool about his company that he built up, started in 2017, right? They did a huge amount of events right out of the gate, first 18 months, 60 different events in 20 countries in just 1.5 years and it's built up the name of this organization so quickly, and he made such a name for himself. And what's really cool, it's education based. And so much of what Cisco Live is all about is what? Education, bringing people along get them hyped up, right?



**Zane Powell;Associate Sales Representative**

Totally. That's what we're here for. Listen, Steve, I have learned so much this week. This is my first ever Cisco Live, I feel like my brain has literally grown, I guess, grown? What do you think?

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**Steve Multer;Chief Storytelling Officer**

Absolutely. By the way, you decided not to do it. All right. So here's what we were going to do. We have this idea of having Lucy, our spectacular makeup person who's been with us all week. We're going to actually do #CLEUR, which is our social media post, right -- wait, is it there?

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**Zane Powell;Associate Sales Representative**

No, no.

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**Steve Multer;Chief Storytelling Officer**

It's not there. You were going to put it in there. I wanted to put it across Zane's forehead. I thought that would be the most fun thing to do.

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**Zane Powell;Associate Sales Representative**

I think so.

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**Steve Multer;Chief Storytelling Officer**

You backed out on the whole thing?

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**Zane Powell;Associate Sales Representative**

Well, no, no, no. So listen, we're going to put #CLEUR on that side of my face, just wait. So it's -- oh, oh, it's on the screen.

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**Steve Multer;Chief Storytelling Officer**

It's on the top of the screen. We just found out.

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**Zane Powell;Associate Sales Representative**

There we go.

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**Steve Multer;Chief Storytelling Officer**

Something to argue. So I'm just going to let you guys know in the back. Are you actually superimposing it over Zane's forehead like we asked. You can tell me, you can be honest with me. Okay, great, it's right across your forehead. Just so you know right now, #CLEUR, right up to the very end. 6:15 is when we're going to be wrapping up here. But then you and I, along with Nish and David back in the studio. We're going to come back. We're going to put a little button on the end of the week here. We've had such an incredible time, but we're going to recap some of our favorite

moments of the event for all of you. And again, invite you guys to continue commenting in using #CLEUR but be a part of the event, there's really nothing like being right here in the room, right, Zane?

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**Zane Powell;Associate Sales Representative**

I sense same, Steve. I sense same. Listen, if you're watching from home this time, next time, you need to get yourself here. Just look at this. Feel the energy, man. We were dancing earlier on.

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**Steve Multer;Chief Storytelling Officer**

Sorry, we have to do one more thing. Follow me over here, Steve. Come here. So these things here, by the way, I just wanted to let everybody know. This is how cool. So Richard is -- all right, I'll go ahead and let you guys know. He's going to be flying in here, in the suit, which is pretty cool. If you've ever seen him do that before. They've given these really awesome headphones to everybody because those jets on his jetpack are ridiculously loud. So you think it's loud in here right now. Everybody is going to need to be wearing these things. So they're hanging over the back of each of the chairs, which I think is really, really cool. Again, where else do you get to come to an event and enjoy this kind of crazy stuff. The dude is just going to fly in on a jet suit.

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**Zane Powell;Associate Sales Representative**

I don't know, Steve, I don't know.

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**Steve Multer;Chief Storytelling Officer**

All right, should we -- why don't we go find some friends to talk to like back over there on that side, in fact, we'll get some of our champions. David we're going to go back up to you in the studio for now, but please come back to us, okay?

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**David dela Cruz;Commercial Account Manager**

I certainly will, Steve, thanks for all that intro. And I'm joined by our final guest for the week. And I think it's -- we've scored an absolute great interview for the last session of the week, just before the closing Keynote, a prime spot. I'm honored to be joined by our SVP and CIO for Cisco's IT worldwide. She comes from my neighboring Australia. We're pretty much neighbors anyway. Many people forget that Cisco itself is a large customer, a large IT user. And I think our guest has a particularly difficult job because our users, our engineers tend to try and break stuffs all the time. So I don't envy that aspect of the work. Jacqui Guichelaar, thank you so much for being on the show today.

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**Jacqueline Guichelaar - Cisco Systems, Inc. - Group Chief Information Officer**

Sure. Pleasure.

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## QUESTIONS AND ANSWERS

**David dela Cruz;Commercial Account Manager**

You were telling me backstage just now that you've only been at Cisco for 10 months. And I guess that means, this is your first Cisco Live.

**Jacqueline Guichelaar** - Cisco Systems, Inc. - Group Chief Information Officer

11 months.

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**David dela Cruz;Commercial Account Manager**

Eleven months. Your first Cisco Live in Europe? How have you found it? How is it different to Cisco Live in other parts of the world?

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**Jacqueline Guichelaar** - Cisco Systems, Inc. - Group Chief Information Officer

Yes. So yes, first one in Barcelona. I mean, it has been absolutely incredible. I definitely grew up in Australia, as you know, but I was born in Uruguay. So I'm actually Latina as well. So I've been practicing my Spanish. I've been eating lots of tapas, I really love the culture of the people here, I mean, in Barcelona. And honestly, that whole European flavor that we get into our sessions here has been great to watch.

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**David dela Cruz;Commercial Account Manager**

Well, I'm glad you're using the opportunity to flex your Spanish skills there. Where have you been spending most of your time this week?

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**Jacqueline Guichelaar** - Cisco Systems, Inc. - Group Chief Information Officer

Good question. Everywhere, everywhere. I kicked off the IT management program, where we had 1,000 of our customers actually sign up for that specific program that my team and I basically organize, share what we're doing, whether it's what we're doing with WebEx solutions, what we're doing with DNAC, what we're doing to transform Cisco IT and actually help Cisco transform so that's one part. I've been walking the floor, talking to the companies that we're investing with and partnering with, just to see what solutions are coming out in the security space, in particular. And yes, and just customers, customers, customers, customers.

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**David dela Cruz;Commercial Account Manager**

And I'm glad you mentioned the IT management program because for some people that might be a new topic, what were the sort of key themes or takeaways from IT management and where can people sort of find out a bit more?

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**Jacqueline Guichelaar** - Cisco Systems, Inc. - Group Chief Information Officer

Yes, sure. So this year, what we did was we focused on technology and people, technology and teams. And what was interesting was many of the participants took away a couple of things, which is technology is changing at a pace we have never seen before in the industry. But what is equally important, I think, as the complexity gets higher, is the leadership challenge around that. The cultural challenge around that, how do you rally thousands of people in IT, engineers, how you said earlier, how do rally them behind a vision that can help transform Cisco IT and Cisco as fast as we can go. Because actually, speed is probably going to count more than it has ever counted before. So everything from talking about security challenges, data at the center of everything we do, how do we move things to the cloud in a multi-cloud environment, while securing it. All the challenges that you can imagine, we have covered all of them in the last couple of days.

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**David dela Cruz;Commercial Account Manager**

Absolutely. And I think your point on speed and agility, I think that's not going away anytime soon. If anything, the pace of innovation, the pace of change and also the pace of the new challenges that are coming towards us and our customers is only going to get more and more as we go along.

**Jacqueline Guichelaar** - Cisco Systems, Inc. - Group Chief Information Officer

Absolutely.

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**David dela Cruz;Commercial Account Manager**

And you being the first-time attendee, always keen to understand what were your personal takeaways, your personal highlights from the week? I don't know if you managed to escape the IT management program at all?

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**Jacqueline Guichelaar** - Cisco Systems, Inc. - Group Chief Information Officer

I did, I did.

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**David dela Cruz;Commercial Account Manager**

What did you take away from the show overall?

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**Jacqueline Guichelaar** - Cisco Systems, Inc. - Group Chief Information Officer

Well, I think, look, I mean, what's clear is, I mean, even being inside Cisco now for 11 months, I was a customer for decades before, a customer of Cisco. I'm now inside Cisco. I've spent the last 11 months learning Cisco, the products, the solutions, our partners, and I still have a lot to learn. So my big takeaway is how do I ramp up and continue that learning process, while I mobilize the team to start really attacking the areas of the transformation that we have to do in Cisco IT. So learning, partnering with others in the industry, I think, is key. And then figuring out as a leadership team, how do we lead Cisco IT through the transformation that we need to do for the company and for our customers.

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**David dela Cruz;Commercial Account Manager**

Yes, great. And all that time as a customer, you never made it to Cisco Live Europe before then?

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**Jacqueline Guichelaar** - Cisco Systems, Inc. - Group Chief Information Officer

I know. Isn't that bad? I mean, my team went, my team went. It wasn't anything personal. I was waiting for the invitation from Chuck it never came.

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**David dela Cruz;Commercial Account Manager**

Unbelievable.

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**Jacqueline Guichelaar** - Cisco Systems, Inc. - Group Chief Information Officer

But I we've got a better invitation now, right?

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**David dela Cruz;Commercial Account Manager**

Yes, that's right. We'll take it up with Chuck later. Now obviously, the show is primarily directed at people that can't make it to Cisco Live in person. So what would you say to the viewers at home, what are they missing out on by not being here in person live in Cisco Live Europe?

**Jacqueline Guichelaar** - Cisco Systems, Inc. - Group Chief Information Officer

Wow, I mean, great question. I just don't had to answer it in the amount of time we have. I mean, I would say the first thing is the relationships that you build here, and I've built many with customers and partners and other Cisco colleagues in the last 3 days in a way that I can't do in my -- at my desk, in my job. So you have to come here for relationships. Everything is about what's happening in the industry and how quickly you can adapt to it and understand it and learn it. So that's the first thing. Secondly, the amount of products and solutions that we have here to share and experiences that customers are going through. So you said it before, I am a customer. As other CIOs and their teams are here, I'm learning from them, they're learning from me. And I think from my perspective, learn, partnership, keep up with technology, keep up with solutions. I mean, if you don't come, you absolutely should come.

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**David dela Cruz;Commercial Account Manager**

Absolutely perfect note to end on. Thank you so much for your time, Jacqui. You've heard it here, you've got to get down to the show, just to feel the atmosphere, get the networking done. And I think we're going to head out to Steve and Zane, who are out on the show floor, trying to get a bit of an idea of what it's like out there.

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**Jacqueline Guichelaar** - Cisco Systems, Inc. - Group Chief Information Officer

They're getting excited.

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

Talk about feeling the atmosphere. We couldn't have any more atmosphere than this group. These guys are Cisco champions give it up everybody. All right. So for those of you who have not been to a Cisco Live before, if you do not know what a Cisco champion is or why these people are so amazing and important in what we do here at the event. This is Lauren Friedman. Lauren heads up the Cisco Champion program. Talk to us about what it is and what these crazy luncheads all around here are actually doing at the show?

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**Lauren Friedman;Influencer Marketing**

So these are our technical influencers. They have to play every year, they're under NDA for a full year. And we do all the stuff we do: pre briefings, message testing, beta testing. And then we try to do lots of fun stuff with them. So at Cisco Live we record podcasts, Cisco Champion Radio. We give them behind the scenes tours. We have them meet with executives. It's a lot of fun, a lot of running around.

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**Steve Multer;Chief Storytelling Officer**

And you've got a very busy job. Now by the way, how much time is actually spent in training people like [Yetel] to hold the Cisco champion sign exactly correctly?

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**Lauren Friedman;Influencer Marketing**

It's about 30 hours.

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**Steve Multer;Chief Storytelling Officer**

30 hours.

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**Lauren Friedman;Influencer Marketing**

But they can do learning credits for holding.

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**Steve Multer;Chief Storytelling Officer**

He's still dropping it. Clearly, you're going to need 40 hours. You're going to need...

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**Unidentified Participant**

I am going to need more time to hold it.

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**Steve Multer;Chief Storytelling Officer**

We're going to keep working with you. You're totally fine. Hey Zane, talk to some of our crazy crew over here.

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**Zane Powell;Associate Sales Representative**

Guess what? I have a Cisco champion. GJ.

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**Steve Multer;Chief Storytelling Officer**

GJ.

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**Unidentified Participant**

Yes.

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**Zane Powell;Associate Sales Representative**

How is your Cisco Live going?

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**Unidentified Participant**

Yes, pretty good. Yes. And a lot of [freshians,] start with a lot of people. So yes.

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**Zane Powell;Associate Sales Representative**

Fantastic, GJ. And listen tell us how did you become a Cisco Champion? What did you do?

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**Unidentified Participant**

Well, I applied, and you have to fill in all sorts of information about yourself, and then you go through a strict...

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**Unidentified Participant**

We spend hours, reviewing an application, like, many, many hours.

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**Zane Powell;Associate Sales Representative**

The main thing is he's a Cisco Champion.

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**Steve Multer;Chief Storytelling Officer**

Let's go over this way. Hey, Steve, follow me around. I want to get to these guys. I am going to climb into the middle of you. Oh, we're going back over here on this side. All right. So [Nier, Pavo]. So [Nier], first of all tell us where are you from.

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**Unidentified Participant**

I'm from Hungary.

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**Steve Multer;Chief Storytelling Officer**

You're from Hungary, great, great, excellent, fantastic.

How many Cisco Lives have you been to?

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**Unidentified Participant**

This is my first time.

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**Steve Multer;Chief Storytelling Officer**

Wait a minute. This is your very first Cisco Live? I should let you talking to Zane, his first Cisco live as well.

Isn't that crazy?

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**Zane Powell;Associate Sales Representative**

Yes, this is my first time.

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## QUESTIONS AND ANSWERS

### Steve Multer;Chief Storytelling Officer

First time out, rocks. Tell us what your experience has been? What have you seen, while you've been here at the show? What's gotten you particularly excited? Stay in here with me guys, you are too far away. I'm going to climb back here and leave it to...

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### Unidentified Participant

Wonderful event. I mean, I am just speechless. This is the coolest event I have ever been to. From 0 to 100, everything is so cool, everything is so organized and everybody is friendly. Even the distinguished engineers are down to earth, and they just talk to us, we communicate, we share knowledge, experience and wow, just wow.

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### Steve Multer;Chief Storytelling Officer

I'm telling you, you could not put it better than that when we try to talk to people about what makes this particular event so special. And again, why all of you should make sure that you get here to the show. It's that everybody is not only available to you, but they are accessible. That's exactly what it is. Everybody likes to put the executives and the engineers up on this high plateau, like, they're untouchable, they're amazing. You come to this show. They're friends. That's what it's kind of all about. Can you guys stay with me for a couple of minutes, we're going to go back to the studio. Can we come back and talk to more of you, are you good with that? All right, cool. So Nish, let's go back to you in the studio for now, but don't forget about us. I want to keep talking with these great guys.

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## PRESENTATION

### Nish Parkar;Cybersecurity Communications Manager

Steve, we're definitely not going to forget about you. I loved what someone said there about the -- them feeling like they're complete speechless and I've got just it -- even thinking about it, right? So David, you're joining me here back in the studio.

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### David dela Cruz;Commercial Account Manager

I am.

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### Nish Parkar;Cybersecurity Communications Manager

What a great opportunity to talk to Jacqui just now. We had Steve just talking about how our executives are available, the whole week through the show to be meeting with attendees, with customers, with partners. I mean, do you get any other opportunities to do that here at Cisco. I mean, this is a pretty special event, right?

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### David dela Cruz;Commercial Account Manager

No, absolutely. I think that's what's amazing about Cisco Live is that you've got just such a concentration of not only technical experts, but also executives, and it's the greatest, greatest opportunity for a customer to get that feedback, get that information direct from the source. And yes, you just saw it here, I mean, Jacqui Guichelaar, what a coup to get for our last interview and she was an amazing lady to talk to, really great fun. We were having a great laugh backstage as well beforehand. But yes, totally, we are specialists.

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**Nish Parkar;Cybersecurity Communications Manager**

And I heard you say that you've got some personal questions for Jacqui. So I've got one for you, David.

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**David dela Cruz;Commercial Account Manager**

Yes.

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**Nish Parkar;Cybersecurity Communications Manager**

So your heart is probably going to start beating because you don't know what I am going to come out with. What has your experience been like as a first-time host here at Cisco Live?

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**David dela Cruz;Commercial Account Manager**

Honestly, I've been blown away. Like it's Zane and I, I think I speak for both of us. We've had such an amazing week. And I've got to say a massive thanks as well to the entire backstage crew, the floor crew, all the camera guys because they have made our experience here, so easy. They've been so accommodating. So patient with us, with all our questions and silly little mistakes and things like that. So I really got to say a big, big thank you to everyone behind the cameras.

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**Nish Parkar;Cybersecurity Communications Manager**

They are an awesome team. One of the things that I take away. Every time I come to the show is, obviously, we have our day job, and we are such a big company, so we have certainly different parts of the business, different architectures, different functions, but when you come here to Cisco Live, you really see the width, right, like that. The variety of what everyone at Cisco is working on all in one place. You get all the high level of kind of insights with all the new launches that we're making here at Cisco Live, all the fun that we have, all the demos, like to seeing our technology, getting our hands on our technology and that makes it so amazing. So what would you say has been your highlight just from today because I know we're going to spend some time together talking later. But just from today, obviously, it's been another full-on day. What's been your highlight?

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**David dela Cruz;Commercial Account Manager**

I think a great highlight was from the World of Solutions today, being able to show off the -- yes, the Desk Pro and The Room Panorama for the first time, I think, in a public forum and being able to chat with [Anders,] who's I don't know, people may not know, [Anders] is one of the guys that's sort of involved in developing those products, is a spokesman I suppose for the WebEx hardware and great having to be able to chat with him. I'd never met him personally before but it was an awesome opportunity. But I'm just seeing in my monitor actually that Zane is standing there with our Chief Stroopwafel Officer. Zane, who have you got there for us?

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**Zane Powell;Associate Sales Representative**

David, you're absolutely correct. I'm here with Cisco's very own Stroopwafel Officer, Nicole, introduce yourself.

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**Nicole Wajer;Technical Solutions Architect**

As you said, right? I'm the CSO of Cisco, Chief Stroopwafel Officer. By day job, actually it's a technical solution architect in the worldwide enterprise sales organization.



## QUESTIONS AND ANSWERS

### **Zane Powell;Associate Sales Representative**

Fantastic. So look -- tell us more about your Stroopwafel. I mean this is you -- look, everyone, this is Nicole on the Stroopwafel. You're famous.

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### **Nicole Wajer;Technical Solutions Architect**

So literally what I've decided is that I'm from The Netherlands. The Netherlands has these lovely cookie and to have people remember me, I thought, I'd give them something sweet and sugar-rush and when giving this out, I mean, people will never forget me.

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### **Zane Powell;Associate Sales Representative**

Fantastic, I'll never forget you. Listen, thanks very much for your time. Everyone, remember Nicole she is Stroopwafel Officer. Now we're going to head over to Steve. I think Steve's over here.

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### **Steve Multer;Chief Storytelling Officer**

Come on over. We're going to take a really quick hit over here with Jody, Sergei and Amer again 3 more of our Cisco champions. So guys, hoping you can hear me, but if you can't hear me give me like one really quick highlight of your week, here at the show.

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### **Unidentified Participant**

Quick highlight of the week, there's so many to choose from. And it's kind of hard. But I would say, bringing all the people together. One of the things that makes the -- the thing that makes the Cisco Champions program, what it is, bringing people from all over the world together and united in one gestalt, if you will. I crossed the pond for this, I'm from Canada, I came over to Europe. Not just because I could get a European vacation out of the deal, but because I get to hang out with these guys, and I don't get to do that all the time.

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### **Steve Multer;Chief Storytelling Officer**

Absolutely. So yes, let me ask you the same thing, Wendy, by the way, Wendy Mars would love to hear what you just said.

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### **Unidentified Participant**

Yes, that's the same for me. It's networking the most important part of this conference is networking with people. I get to know this gentleman from all over the world, which I've never met before, personally, and we're having great time, we exchange ideas. We energize, I've been here last year. And since then, I was looking forward to coming back here, and it delivers 100% to all my expectations.

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### **Steve Multer;Chief Storytelling Officer**

That's just perfect, perfect. And Amer how about you? Quick get here.

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**Unidentified Participant**

Yes, it's all about the experience and dedication. It's only once a year that we manage to get all together, all the Cisco champions and meet everyone here. It's really nice being here.

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**Steve Multer;Chief Storytelling Officer**

Perfect guys. Thank you. I appreciate it. We're going to go back to the studio briefly. And hopefully, we'll see you right back down here as well. Enjoy, we can barely hear a thing. We're just having too much fun.

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**David dela Cruz;Commercial Account Manager**

Thanks, Steve. It's great to see just all the passionate customers that are having really good time here at Cisco Live this whole week. Obviously, we've tried our best to get as much content as we can across to you. But I think it you've heard it now a few times, the big, big part of Cisco Live that you're missing out all by not being here in person is the networking aspect. Nish, wouldn't you agree that, that's the biggest part of Cisco Live?

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**Nish Parkar;Cybersecurity Communications Manager**

Absolutely, I feel like we're [trying] -- we're maybe getting bit of [formal] out here to this audience, right? Because if I was sitting there at home I would have been like I want to be there. The energy around here is like everyone is jumping around, they're getting in place for the Keynote, they're getting in place for the party. You also don't get all the Spanish food and drinks, if you're still at home.

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**David dela Cruz;Commercial Account Manager**

That is 100% correct. Okay. And we're going to head back to Steve because he's managed to snag Wendy Mars for an interview?

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## PRESENTATION

**Steve Multer;Chief Storytelling Officer**

Absolutely. Wendy was kind enough and generous enough. Here at the end of everything else that you've done this week to talk to us, we're going to keep it really short. You've got to be so thrilled at this particular moment we've arrived, an incredible week, everybody has had an amazing time. And here we are at the closing Keynote?

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**Wendy Mars - Cisco Systems, Inc. - President of EMEAR**

I know. It's fantastic, and I can't wait for all we are going to do in this Keynote, it's going to be amazing.

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## QUESTIONS AND ANSWERS

**Steve Multer;Chief Storytelling Officer**

Okay. So did you get a chance to meet Richard or really did kind of deep research him and see what it is that he brings. He's all about education and that's what -- so much what I love because that's what Cisco Live is. It's a learning and an education experience. And he does that as well.



**Wendy Mars** - *Cisco Systems, Inc. - President of EMEAR*

He does, he does. It's going to be incredible.

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**Steve Multer;Chief Storytelling Officer**

So cool, you have a great time.

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**Wendy Mars** - *Cisco Systems, Inc. - President of EMEAR*

Watch this space.

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**Steve Multer;Chief Storytelling Officer**

Absolutely. We're going to watch this space, everybody is going to keep a close eye on it. You've got like the best seat in the room here. Thank you for taking a moment to talk with us. Again, this is what the show is all, Wendy Mars is unbelievable President, EMEAR. This is her first Cisco Live that she has been fully in charge of, here in the Europe space, and she's done an absolutely spectacular job. All right. So do me a favor follow me around. Steve, if you can follow me. I just want people to get an idea, look at Carissa scrambling away here. She's like a cockroach in the sunlight. All right. So in case you don't know back at home, exactly how things are laid out, a massive space, the band is set up back over here.

Again, like I said, I can barely hear anything other than what's happening back in the studio, we've got the huge screens Richard is going to be flying up here in just a minute. But as we continue to load in the seats, you can't even see the back of the hall. It's like a football field from here. So this is why you need to actually be live here in this space with us. It's really cool to watch it on the screen, I think it's fantastic. But Zane, I was just telling everybody, there's really nothing like seeing it for yourself, being here in the room experiencing that energy.

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## PRESENTATION

**Zane Powell;Associate Sales Representative**

You need to be here to see it for yourself, honestly, I can't describe that. It's absolutely, amazing Steve.

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**Steve Multer;Chief Storytelling Officer**

Do me a favor. Trade with me, because I can't hear on this side. There we go, now I'll be able to hear a lot better. Only now you can't hear me. All right. So you had a chance to talk with Nicole. Nicole is one of our NetVets who's up here on the screen. She is one of those advocates for Cisco. And one of the things that I really love is that this event brings together, the people who have the deepest passion for Cisco. Again, you talked to Nish who's back in the studio right now. You're going to be hard-pressed to find somebody who has more passion for it. She's been around with us for almost 6 years. You've been around with Cisco about 6 months and your passion is already so palpable. And I love that about you because you've already become such a great storyteller for Cisco.

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**Zane Powell;Associate Sales Representative**

Steve, I couldn't agree more. Listen I love this company. I've been here for 7 months. The opportunities, energy everything. I am here at Cisco Live, it's absolutely fantastic. Steve, I just wish everyone could be here to feel how we feel.

**Steve Multer;Chief Storytelling Officer**

So cool. All right. So we're going to keep playing down here in finding people. Nish, why don't we go back to you in the studio, and maybe we'll see you again before this whole thing kicks off?

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**Nish Parkar;Cybersecurity Communications Manager**

Sure. I think Zane and I might be competing against each other on who is more passionate about Cisco. David, you want to join in the game.

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**David dela Cruz;Commercial Account Manager**

I don't know if I can even play with you guys because you are at a whole other level to me.

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**Nish Parkar;Cybersecurity Communications Manager**

I mean, we're like skipping around the show, people are like who are these guys, they're starting to recognize us from being host of the show. Now I just thought -- talking about passion and what we're excited about. The impact zone, right, that we've got there. We have things like build a bike, we have the IoT maker space, there's lots of exciting things. I'm curious to get down and see how people have been doing because actually at the show, as well as learning about technology as well as all the networking and meeting all the experts, we've actually had a huge great impact. That's pretty exciting.

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**David dela Cruz;Commercial Account Manager**

Absolutely. And honestly, that's probably one of my favorite things about working at Cisco. It's one of the things that makes me the most proud of working at Cisco is the social impact that we're able to have across our various programs, across things like networking academy, all the different CSR initiatives and being able to bring our customers and partners into that, when we are all together on a show like this, it just makes it even a lot sweeter even than it ever is.

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**Nish Parkar;Cybersecurity Communications Manager**

Absolutely. I can see from Zane and Steve there on the monitor, that's a full house. It's getting very, very full, people are getting very excited for Keynote. I'm getting a bit of a fear of missing out myself because when I heard that Rich Browning is actually coming in in his jet suit, I'm realizing that we're not there to experience that.

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**David dela Cruz;Commercial Account Manager**

Yes so it's like viewers at home. We're going to be watching this just the same way you are sitting behind the video monitor, because unfortunately, we're about 800 meters away from where Richard Browning is going to be flying in with his jet pack.

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**Nish Parkar;Cybersecurity Communications Manager**

Absolutely.

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**David dela Cruz;Commercial Account Manager**

But it's going to be really exciting. I have heard he is going to fly up onto the stage and land right next to some of our executives, so he must be very confident in how good he is at flying that thing.

**Nish Parkar;Cybersecurity Communications Manager**

Yes, absolutely. So let's talk a bit about the party tonight. So I know that a lot of people here are going to head to the Keynote and then everyone's going to flood straight out of the Keynote and go to the party, further networking. Just really celebrating the week here. I'm excited to see lots of pictures with #CLEUR.

**David dela Cruz;Commercial Account Manager**

#CLEUR. If you are at the party, please say the hashtag, we'd love to see your photos, the social media team. Love retweeting photos of people having a great time at Cisco Live.

**Nish Parkar;Cybersecurity Communications Manager**

Yes. And I love the variety. Every year, we get different music cast, there's always different things to do. I know last year we had bumper cars. I wonder what's going to go on this year. I think it's like a surprise every year, I mean, I'm not very clued up. I know we have obviously Niles Rogers & Chic I had to google. And actually, I knew pretty much all their songs, I was pretty amazed.

**David dela Cruz;Commercial Account Manager**

Did you? I didn't get a chance to Google them yet. The name also didn't really ring a bell with me. Maybe we're a little bit of a younger demographic than they might be used to. But I think the thing people that aren't here, obviously, don't know about the party. But I think especially if you don't like dancing, there's fun stuff for everyone, there's normally like arcades, there's pool tables, there's food. And I think I'm just hearing that they're ready to go in the Keynote space. So we're going to go straight there to not miss a thing.

**Nish Parkar;Cybersecurity Communications Manager**

Enjoy the keynote guys. Thank you.

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