

Patrick Moorhead: Chris, welcome to the Six Five Summit, 2021. And I just want to thank you for keynoting our day two, which is all about enterprise apps and collaboration.

Chris Wolf: Thanks Patrick. Really happy to be here and just happy to have a great conversation with you.

Patrick Moorhead: Yeah. So maybe a great place to start is there are a ton of things going on at VMware. You have a new CEO and a new president. Can you talk a little bit about, give us your perspective on these new leaders, and be honest. And what can customers expect from VMware's new leadership team?

Chris Wolf: Yeah. I'm really excited. Actually, I met Raghu in 2007 for the first time and actually had met Sumit around the very same time or same year, maybe within a year or two difference. But what do I find about them?

First, what I admire most about Raghu is I think he's a pragmatic innovator. It's easy to have big ideas, right? But more important is to take an idea and understand the timing for when to enter a market, and understand how to really connect that to customer or industry needs. Raghu has all of those insights and pragmatic foresight, as I've mentioned, which I find to be very rare in this industry. He's humble. He has high integrity. He really aligns well to the VMR culture.

I can say the same thing about Sumit Dhawan. Sumit is a fantastic executive, had always been a rising star. I had seen that very clearly when I first had worked with him when he was at Citrix. And just continue to see, again, meeting that same VMware bar for culture and what we look for in terms of integrity and humility, and just being a very capable, competent leader.

So I think the leadership future for the company is very strong and you're going to continue to see just really rich talent coming into VMware, I think, in response to this new change.

Patrick Moorhead: Yeah. I spent a lot of time with Pat Gelsinger and Sanjay Poonen, and I can't wait to spend more time with a new crew. So I wanted to jump in a little bit, you're part of the office of the CTO and you have something very unique in there. You actually have ESG inside of the office of the CTO. So environment, sustainability, and governance. Can you, first of all, tell us about the thinking of that. But also what's a key area where VMware is doing some great ESG stuff?

Chris Wolf: Wow. Yeah. I think it's really areas. For us in the CTO office, it's all about innovating and how we innovate. It's really important. And also doing work with a purpose. Making sure that we're not just having our own little sandboxes and doing things, but making sure any work we're doing is truly aligned to industry or our customer needs.

When you look at the ESG team and the office of the CTO, they've really been pushing the bar. I think in terms of really how far you can go for software companies. VMware software, since I think 2003, we've reduced about 1.3 billion metric tons of carbon, globally. In addition to that, we're an RE 100 company already. We've already met our goals in terms of being a hundred percent renewable energy powered across our global operations.

We've also done other areas of innovation that I think are pretty important. For example, through the CTO organization, we started a program called Nonprofit Connect where we're connecting nonprofits to the technical and engineering talent needed to really help them to be successful. So this is a service that we provide. In addition to that, and I can get into some details if you're interested, we've won as far as we now have a sustainability engineering team. So we are attracting engineering talent knowing their come to VMware. And they are just working on engineering and really new software elements or designs that are going to have a direct impact on sustainability going forward. And these are areas such as edge computing, machine learning, and lots of other areas that I think are really important to the industry.

So there's a lot happening there. And this is really just a very tiny slice, I would say, of what's happening with ESG in the CTO office at VMR.

Patrick Moorhead: Yeah. I thought it was unique. I thought it's interesting. And I have reviewed a lot of company's ESG plans. This the first one that's out of the office of the CTO. So I might posit, some of the greatest minds inside of VMware are working on that, and I think that's really cool.

So let's just dive right into applications here and the cloud. So VMware has really, I mean, you guys went all cloud. I don't know if it was six or seven years ago, but everything you're doing is in the spirit of the cloud and digital transformation, as we've all talked about it, as we've seen and experienced, has really sped up during the pandemic. And now we have this massive growth in modern apps that run in the cloud. And so for enterprises and organizations who are going all in on the public cloud, where does VMware provided provide value to that?

Chris Wolf: Yeah. That's a great question, Patrick. And it's a question I get quite often, actually, from different end-user organizations. Like, why am I talking to you? Aren't you a data center company? It's like, no. Yeah, we were 15 years ago, but we've really evolved much, much farther beyond that.

So when you think about what COVID has taught us, and what this global pandemic has meant, a few things. So first the fact that there's a complete difference now in the preference that employees have for how and where they work, where it's the majority of employees worldwide want to have that work from home option. But they want to make sure that the business itself is really providing the security and the capabilities to make them productive at home. It's becoming an expectation. So if you think about just the anywhere workplace

that VMware has been driving for more than the past decade, we're really well aligned to that today.

If you go further and you start thinking about, well, cloud and cloud applications, what does that mean? There's lots of areas where we're also complimenting. Like from the dawn of IT, if somebody has a problem with their computer, you know you can just blame DNS. And they're going to be like, oh yeah, can't access the application. Yeah, probably is that. Right? And it's going to buy you time to troubleshoot. While we can joke about that, at the end of the day, it's the network that can make or break how well your applications can perform.

So what are we doing? Through software defined LAN and SASI, we're bringing networking and security to anywhere an application can run, whether that's at a SAS provider, a native public cloud service, whether it's at an edge site or what have you. So that's an area. If you think about our Tanzu portfolio, what we're doing through Kubernetes and Cloud Foundry and other projects, Spring Brute, et cetera, is to give organizations a way where they can build applications and keep them in a way where they're maintaining flexibility and control of the IP that they're creating as a business.

And that's really important, because something else COVID has taught us is we don't know what tomorrow is going to bring. But odds are the apps you build today with one intention, you're going to have to run them somewhere else in the future. And through VMware and our ISV partner community, we're providing a way that you can build and run applications and operate them consistently in a way that's truly cloud agnostic. It's not to say that this is going to be for all your applications, but there's a lot of areas where you want that flexibility and control. You want to build a future-proof your investments in applications. And these are areas that we focus on, that we think is important. And it's very complimentary to what you're seeing in native public cloud services today.

Patrick Moorhead: Yeah. One area that I know VMware doesn't get enough credit for is its security portfolio on the edge. And I know you have security that that spans cloud to edge and everything in between, but the notion of all these workers going outside and having to get their work done, there was a lot of, many, VMware solutions out there loaded on those devices.

So let's go from the abstract to kind of definitive, and what VM-ware is doing at the company and the changes that you've experienced there with your company culture, and maybe talk about the new work model at VMware looking ahead. We talk about hybrid, but that can mean a hundred different things.

Chris Wolf: Yeah. For us, it's been pretty interesting that my organization in particular, we have engineering offices in five different countries. We've been global in nature. We've had a mantra in terms of looking to hire the best talent for a particular role, regardless of where they live.

So an example of that is we don't have a dedicated office in Mexico City, but the best candidate we had for a data science position happens to live in Mexico City. So we're like, okay, great. Let's make it work. So there had been some of that going in, I'd say, with the company. And continuing to expand in company culture that had held. And where we've gotten to now is we try to make it really simple. So you can be a fixed employee. You can have a flexible schedule, which means maybe you're going to the office a couple of days a week or you're full remote. And in many cases, the employee and the employee's manager can make the decision in terms of what's best for them and their lifestyle. And we can simply flex around that. And that's been really successful, especially as some of the offices are starting to open back up.

And I can tell you, even with our engineering offices in many different countries, the challenge that we had when we went to this full remote workforce wasn't getting access to applications or being able to continue to code. It was things like, well, all they had was a laptop. So we had to get monitorship and there was logistical and customs challenges. Those were far more difficult than simply gaining access to the applications.

Patrick Moorhead: Interesting. I love that. So over the past 12 months, VMware has gotten big into two areas, application development and, like I'd said, security. And I'm curious, I may know the answer, but I want to hear it in VMware's words here. What has driven the developments? And how does that security and app dev portfolio reflect what customers are really looking at it, and how's it different?

Chris Wolf: Yeah. That's a great question, Patrick. And it really is key today to be differentiated if you're going to have value, right? Especially when you look at the public cloud space, and organizations can get a lot of services natively from the public cloud providers. So you have to be, in some ways, you have to have a broad purview. But at the same time, you need to be surgical and decide what are the real problems that need to be solved and in a way that is cloud agnostic and important for our customers, right?

So when you start to look at the application space, as an example, one thing folks need is observability and being able to understand the behavior of all aspects of the application. And that application, parts of it could still run into VM, natively on VMware and EC-II. It could be leveraging lambda functions, could leverage some back and native services. So being able to have that end to end purview in aggregate is really important, right? To understand, well, if something's going wrong, or if I'm not meeting an application SLA, what do I do there?

I mentioned through our Tanzu portfolio, we're providing a flexible application platform that can run in any cloud today and can run on premises are at the edge site, or whatever might happen in the future. So our contributions upstream to the Kubernetes community are really important in that regard.

Another area in the cloud native computing foundation is Project Harbor. So the most prolific open source container registry today is Harbor, and it was founded at VM-ware. And it was actually founded by a team of engineers based in China that were part of the VMware office of the CTO.

Patrick Moorhead: Interesting.

Chris Wolf: So it's really, these contributions are important for us, but so if we back up, what is it? It's the management observability of the application. It's understanding costs and being able to optimize costs for the applications itself. So that gets into what we're doing to a degree in the app space. Then if you pivot towards security, wow. Right? Where do we begin?

Patrick Moorhead: Right.

Chris Wolf: Being able to secure the software supply chain is super important to every enterprise today. We continue to see this increase in ransomware attacks that organizations are being faced with. And the VMware philosophy here is to say, you know what? We want the application or the application container to be secure at the moment it is instantiated. And that's quite powerful if you think about that. And when you can put software outside of the application container, the moment that container is born, even if it's ephemeral, it can be secured by default.

We're doing that with technologies, such as Carbon Black, that had been acquired, and being able to really integrate through Carbon Black workload, those insights, not just for desktop applications, but server applications, as well. Taking advantage of a massive data lake to build out automation around that. Through our investments in SASI, we're able to provide a secure service edge environment that's within five milliseconds of every major public cloud data center today. So just the global points of presence that we have can provide a significant amount of reach there, as well.

And then if we take this even further, something that doesn't get enough attention, especially when you start talking about edge computing, is what we could call random or road workloads, where lines of business are, in many cases, directly procuring applications through a solution provider. That may be completely out of central IT organization's purview, but these things are happening. And historically, they've gotten ignored. But we've learned that we can't do that anymore. So we have technology that we call Edge Network Intelligence that can do dynamic discovery of these new workloads. And then we can start to wrap automation around that. So even though this isn't managed by IT, I can do things like virtual patching, as an example, to further secure these, leveraging even technologies like our service defined firewall for east-west fire walling. So there's a lot that can happen in there.

And then, I'm sorry, but I'm going to give you one more example. So I'm a little passionate about this, if you can't tell. So beyond that we have technology, we call Tanzu Service Mesh. So sometimes service mesh can be an abused term, and people are like, well, is it really ready for prime time? Right? But what we've done in this area is we've added native auto-scaling capabilities. So whether that's a container workload or traditional workload, we can auto-scale applications without having to rewrite application code.

More importantly, we've been able to create a global namespace for an application. So no matter where parts of that application runs, you can manage the policy for that application in the context of a single namespace, which is really powerful. So that allows IT now to attach policy, whether it's availability or security or otherwise, directly to the application independent of the application's locale.

So hope you're seeing here, there's a lot of innovation that we're driving here that's in support of both the app side and the ops side, in support of these new modern applications.

Patrick Moorhead: Yeah. You had brought up the edge, and I want to do the double click on that. The edge is becoming an attractive place to deliver the next generation of applications. But at the same time, you have to make it secure and have data protection. What use cases, some interesting use cases, have you seen?

Chris Wolf: Yeah, there's a lot that's been starting to pop up now. I'd say some of the more leading edge use cases are around localized influencing and doing more real-time decision-making based on sensor readouts, et cetera. And those IoT type use cases certainly get a lot of attention. But there's also more practical use cases that are happening today.

If we even take this back to some of our sustainability goals, there's a new opportunity to reduce the carbon footprint at the edge. A lot of cases today, if an organization is deploying a software and solutions at their edge sites, each of those solutions might land on their own piece of hardware. That increases the carbon footprint. It increases your power costs. It increases your op ex and maintenance costs, et cetera. Right? Plus complexity. It also means that if you're trying to do implement change at the edge, you're having to go through some type of procurement cycle. We don't think that that's the right path going forward.

We want that velocity at the edge to be defined as a software update. So if I need a new application delivery controller, it's a software update. I need a new app or data service. It's a software update. I think you get the idea here. And how does VMware differentiate? If you look at where the public cloud providers are going in terms of how they're looking to penetrate the edge, it's basically get an appliance that can run their cloud services.

What VMware is saying is if you're an AWS shop or you're an Azure shop, or Google or whoever, buy a single appliance from one of those VMware hardware partners. You put a VMware platform on there. If you want to start running Azure IoT edge out there, or you have a business partner that does, we can support that. If you want to run AWS Greengrass and some of those services, we can support that. You have some traditional and a containerized apps you're building, we can support that. And again, as you're starting to drive some of this change, it simply becomes a software update to add these new capabilities, which again, at the edge is important.

The last thing I'll mention to you is people often say, well, how am I going to modernize the edge? Because cost is a consideration. There's new technologies we're building in the CTO office that's going to be able to combine your network security services and your platform to run all of your modern applications and cloud services onto one piece of hardware. That's really important when you think about retail or manufacturing, where my edge solution has to be cost positive. And we think we're going to hit that. And that's going to be, I think, pretty game-changing for the industry.

Patrick Moorhead: There are some calling this, a DPU or an IPU. Is that the expression for that networking at the edge? Or am I thinking differently here?

Chris Wolf: Yeah. Well the data processing units, and there are more specialized devices that are coming at the edge, as well. And just to back up again, what I really like so far, Patrick, you keep throwing out areas, and it's like, hey, you know what? We're doing something pretty cool there.

So we also have some ways, when you start looking at whether it's TPU, DPU, there's lots of different types of ways to do a variety of hardware acceleration. And that becomes also important at the edge. But the challenge that, typically, enterprises will have is the ISV is only going to typically certify maybe one type of hardware accelerator. And if you're a hardware vendor, being able to crack into that and gain access to these different applications is really challenging.

So there's some new technology that we're building that's going to effectively democratize access of applications to a variety of hardware accelerators. We think that's huge for the ISV ecosystem and equally important for the hardware providers to be able to crack in and be able to really have a chance to compete in this space. So I think that's another model where everybody gets to be successful.

Patrick Moorhead: I have to drill into one area. We talked about the edge and new applications on the edge, which kind of flirts with the industrial IoT. But I think it all is dependent on what you call the edge. One thing that sometimes does get overlooked is the networking space. And you've made big investments and acquisitions in the networking space. What opportunity for innovation do you see with regards to networking that leverage is the edge, or actually even the data center, that can drive more applications?

Chris Wolf: Yeah. I think there's really so much, actually. So when you start to look at the area, there's a few areas that we're, I think even today, just starting to talk about. Which is from the edge taking advantage of localized points of presence and having intelligence to decide what part of the application needs to run where. So there is... Traditional thinking says there's the cloud and the edge, but there's really that in-between space or that gray area that we think is really important as well. And this is where the network plays I think a few key roles here.

First, it's making sure that the processing of network services and network policy is as close to the application as possible. These old architectures where we were hair pinning network traffic to be scrubbed by a firewall in a data center, or they simply don't scale. In many cases, when folks went full remote because of COVID, those architectures just completely fell down.

So first, at the edge, where do we see improvement? First off as SD-WAN. And that's super critical. I've as I mentioned to you earlier, Patrick, I had relocated. And where I had been staying at temporarily, it actually had a three megabit connection, which is laughable by today's standards. But putting a VMware VeloCloud appliance box in there, actually was able to get me through all of my Zoom meetings and kept me really productive without any types of hiccups. So that innovation and SD-Wan is important. And we think these boxes are going to continue to grow in terms of the types of things they can do beyond just some of your core network and security services.

Just the ability to do more automated discovery is important, but discovery is not the secret sauce. Things get really interesting when I can take that network and security intelligence and then tie it into automation, because the security threats we face are incredibly dynamic. They're constantly evolving. And that means that the technology that we're building to defend has to be more dynamic than the threats we face. That can only happen in software, right? When that security stack is fully programmatic.

Patrick Moorhead: Wow. Exciting stuff. Chris, we have come to an end here and I just want to thank you so much for kicking off day two of the Six Five Summit. You talk, essentially, you're talking about the ability to deliver next generation enterprise apps anywhere in the enterprise, and pretty much every way in the enterprise, in the most efficient and effective way possible, and secure. So I just want to appreciate your time, and thank you.

Chris Wolf: Thank you very much for the opportunity, Patrick. It's been a pleasure.

Patrick Moorhead: Totally. That's Chris Wolf, Vice President in the Advanced Technology Group office of the CTO at VMware. And this is Pat Moorhead, wishing you an awesome day two at the Six Five Summit, 2021.