Patrick Moorhead: Vittorio, it's great to see you and I'm so excited that we have VMware for the second year in a row at The Six Five Summit.

Vittorio Viarengo: It is our pleasure to be here.

Patrick Moorhead: Yeah so, you and I have met on multiple briefing calls. Hopefully, we'll meet at the next VMworld event face-to-face. So we know each other, but can you talk about what you do for VMware?

Vittorio Viarengo: Yes, I've been with the company on and off 14 years. In the first phase of our prestigious history, and then I came back to help the company as we entering what we call our third act of the company. Actually let's say in customer terms, to help our customers navigate the challenges of this multi-cloud world that we live in.

Patrick Moorhead: Yeah, it's great that we're here talking about multi-cloud, and it was just probably five years ago that the industry was debating hybrid cloud. But the good news is that's behind us, right? The whole industry is in on hybrid cloud and now we're really figuring out how to do multi-cloud. And probably a good place to start is, what is VMware's multi-cloud strategy?

Vittorio Viarengo: If you look at the evolution of IT, every few years there is a shift in the architecture. And in my experience, that shift in the architecture is driven by the application stack. Applications drive the business, right? We build new applications to accelerate our growth by providing our customers with new digital experiences, or we build applications to optimize workflow, to save money. And so every time the application architecture changes, the whole IT stack follows. And so over the last five years we've seen the emergence of cloud as the primary computing platform.

We see that there are 48% increase in applications in the cloud over the next few years, with a slight decline on Prem. And so if you look at these applications, where are they built? They're built in the public cloud because that's the path of least resistance.

Developers get a different machine on EC2 on AWS of Azure or kubernetes cluster more likely these days, and they go out and build applications. And when you look at that, it turns out that 75% of our customers use two or more clouds. And why? Because they want to use the different innovation for various applicators.

Now, of course the private cloud is not going away. That's where we run our mission critical applications, and then you see the emergence of Edge. So when we look at this over the last few years, we realize that while multi-cloud has all these advantages; you go fast, you get all these innovation and our developers develop application fast, but each of these stacks build their own developments environment, their own management environment, so it creates a lot of cost and complexity. And we believe this is the architecture of the future and the most heterogeneous environment that we have ever seen.

And this is where VMware comes in. If you think about what we do at our core, we have a DNA of making things that were not designed to work together, work together. And so last year we launched VMware across cloud services, which is a cloud making set of services that allow our

customers to leverage a new level of obstruction, to simplify how they build, run, manage, secure, and access any application natively across any cloud. And that's the core of our multi-cloud strategy.

Patrick Moorhead: Yeah. I've written this before in my research. I think your strategy is spot on and I do like where it emanated from, and that was from the application development environment. And I think your strategy's unique for what it's worth. I think it'd be good to start off with some challenges though, that are out there. I mean, multi-cloud is not mature. I feel like as an industry, we just got around to saying, "This is what we're going after." It took a lot to get here. We had to get to the point of transportable VMs, containers and things like this. But can you talk about some of the challenges that they're having and why they're having them?

Vittorio Viarengo: Yes. Let's take the very essence of what we're talking about, which is application development. Today's developers, 60% of companies have Kubernetes in production. Why? Because Kubernetes is the way... It's the new lingua franca. I mean, containers and Kubernete is a lingua franca of the native cloud. Everyone would think, "Oh, a Kubernetes is Kubernetes."

Well, the reality is that if you go on Azure, you have one Kubernetes distribution go, or AWS, or AKG, AKS, they're all slightly different. So if you are a company, a large bank, you end up with two or three of this environment out there, and it takes to build a microservice application and take it to production is around 50 steps. You multiply 50 steps by multiple stack? Forget it. So, as an example, one of our cross cloud services is Tanzu, and Tanzu allows our customers to quickly set up any Kubernete distribution. So we kind of hide the complexity and the differences between the stack. So they say, "I want to deploy Kubernetes." Great. We set up the environment. Now that the environment is set up, then the developers doesn't have to learn all this difference. They focus on what they do, which is writing code. Then you put that code on a single pipeline.

And then at the deployment time, you decide, "Oh, I want to deploy on AWS. Or I want to deploy on Azure." As an example, Cerner, one of our customers and partners, they went all in on AWS and their developers were work and using Tanzu. And later on, they wanted to move that applications to Azure. And literally within four hours, they switched the deployment environment, a couple of configuration steps. Boom, deployed. This is the type of advantages you get by creating this abstraction layer above all these differences in the cloud.

Patrick Moorhead: Yeah, it's funny. Sometimes people mistake that all containers can be transportable and can be taken everywhere, but that's, that's just not the case. So what you're bringing to the table is a kind of a higher level of portability that I know is valuable to people because nobody wants to get locked in to any certain infrastructure or any certain private cloud or public cloud orientation. So one of the biggest points of value for enterprises that are looking at really leaning into multi-cloud is, "Hey, who are other people, people who are successfully executing on a multi-cloud strategy?" Can you talk about some of the highlights of some of your customers who are doing this?

Vittorio Viarengo:	Yeah. There are many. To your point talking about multi-cloud, we just we're just at the beginning, right? So the way we're looking at it, if you have your private cloud and one public cloud, you are already in a multicloud world. We don't even call it hybrid anymore because if you are a company that wants to succeed in the future, you better transform your internal IT to a cloud operating environment to begin with. But we find that the customers like in financial services, especially, the customers that tend to push the envelope a little more, they're out there with multiple clouds in production. As an example, S&P Global, and it's a great example... SMP global, sorry, is a, is a great example of this, where they use Tanzu to accelerate their development across multiple cloud.
	Just like I said, similar to Cerner. But then there is another path that they took, which is basically, and this is such a great use case... Well, it's a bad use case. The circumstances are bad, but Tanzu got shut down. There's data center in Belarus, right? For obvious reason. And using VMware cloud, which is basically the idea of having our vSphere stack running on all the hyperscaler natively that they could literally move entire data center to another cloud within a couple of weekends. So think about the power of that, right? Because you're running the same environment in your power cloud and on AWS Azure, and Google, they could literally VMO their applications without disruption to another. So that's a great example of a customer using both our traditional stack. We have VMware cloud to move their data center around as well as using Tanzu as a way to accelerate their application development across modern application development natively using Tanzu.
	And let me, let me add something to that. So there is this misconception that our multi-cloud strategy hinges on our hypervisor. And we dropped that religion some times ago because we realized that to add value in the public cloud, we need to embrace the standards and the way that developers build applications today, which is native microservices and Kubernetes. So while VMware cloud is a great way to modernize your architecture, move to the cloud, have this environment for your traditional applications, we also have made investment and we embraced the native cloud for application development.
Patrick Moorhead:	Yeah, it was. I remember when you first got on stage and talked about your huge investments into containers and some of the acquisitions that you made, I almost fell off of my chair, given that you essentially invented the whole notion of virtual machines. I used to work for an infrastructure, a chip provider, when you did that. But to be able to take such a hard turn, I think was, was very admirable, but also very pragmatic and smart instead of digging in to virtualized machines, only you move forward. And I think that was good. Now, there are tens and literally millions of your virtual machines out there that are supporting applications. Where, where do those go? Do they get lifted and shifted to a different environment on bare metal? Do they get refactored into containers? I mean, I know some CIOs that I talk to have 5,000 applications that are sitting on VMware technology today.
Vittorio Viarengo:	Look, first of all, we're very proud of that, right? We run 90 million applications for our customers, which has shaped the enterprise pedigree that we, that we have. Right? And we bring that to everything we do. But what we see the lift and shift, it doesn't really add much value. Right? Sure, in the case of SMP global, they have to get out of the data center. Sure. Your

lift and shift you go there. There are use cases with that makes sense. But when we see our customers do and we help them with that, and our partners do as well, is to look at your applications and put them in one of these different categories. One is the legacy application still important? I'll give you a definition of legacy that a customer once told me. Legacy stuff that works.

That was funny and insightful. But so if you have a legacy application, you've optimized, it runs great, just keep it there. Right? You optimize it, you don't have to evolve it over time. It's great. You have another application that has components that are useful for new type of workflow. For example, you have something that gives you the average house price given by zip code that is embedded within application. Okay, let's take this application, turn it to microservices, and then put it in the cloud so that new workflows, new application can use it. So you're taking and refactoring it. The other one is being able to split it down to microservices. The other way is to modernize the application and bring it to the cloud so that you get better level of service. You know? So you're on your application.

Some applications will disappear, right? As you move to the cloud, you can say, "Okay, you know what, we're going to use a SA service." So really it's and one thing that we... Again, I've been here a long time and I've run engineering team here in this company. And I have a good sense of the DNA, right? We have a very pragmatic approach to things. We understand that customers are at different stages of the journey. And if you look at our multi-cloud strategy, it's designed so that we can catch them wherever they are, and have a differentiated approach. Because if you are a cloud provider, you don't make any money until you get one of these applications to run on your cloud.

Patrick Moorhead: Yes.

Vittorio Viarengo: Right? For us to say, "Look, keep those applications run well OnPrem, modernize the application, bring them to any cloud that makes sense for you and use whatever cloud makes sense for your business.

Patrick Moorhead: It sounds very pragmatic and customer centric, I have to say. And I know I don't use those words loosely because everybody says they're customer centric. But it seems like you're really giving your customers a good roadmap question for you, Vittorio. Can they find this kind of step-by-step procedure on your website? Is that something that you offer through consulting services? How do they do the double click on that?

Vittorio Viarengo: So we have a service and tools that allow that we used to engage with our customers. We basically run this crawl on their infrastructure and we build a map, a visual map, of their customers' applications and their dependencies. So then they have the data to say, "Okay, these are the applications that I want to move," and we give them advice around that. But also it makes sure that if you're moving an application, you also move all the pieces of the application that application relies on so you don't get stranded pieces of application out there. And then we sit down with them, we build the roadmap of how they're going to go to this multicloud journey, and we help them with tools and professional service as needed.

And then of course we have one of the things that has been talked about, and again, part of that DNA, our CEO likes to talk about it as we are the Switzerland of IT. Now we have relationship with all southbound, with all the hyperscaler. Right? Then we have northbound, we have a bunch of ISVs that build to our APIs so they don't have to build to each stack. They can build to our stack and we create that level of obstruction. And then we have MSP, managed service providers, and partners that implement these technology for our customers. And so we are very uniquely placed in the IT architecture to add that neutral value to our customers and our partners.

Patrick Moorhead: I saved the hardest question for last. You know, I usually, I like to spring it on you in the beginning. But there is this perception and talk that VMware solutions are too expensive to use in the cloud. How would you respond to that?

Vittorio Viarengo: It's a huge misconception. And I like to address it two ways. So this is when we talk about VMware cloud, right? When using our hypervisor and run it on multiple clouds to run those enterprise applications, and as you're moving to the cloud and refactoring and modernizing them. The first misconception is VMware cloud is a native service on AWS, Azure, IBM, all the clouds. It's a native server. Bare metal. Right? And then the thing that people don't realize is that when you are buying a basic public cloud service, you don't get memory over commit the share storage, enterprise storage, stretch cluster, and storage compression. There are a lot of enterprise levels services that you don't get in the basic service.

When you're buying VMware cloud, pretty much at the same price, you get all that. And then if you combine that with the fact that you don't have to refactor your applications you move into the cloud, that's in average, according to a study that we did with the IDC, a 58% better ROI than going native. So not only we're not more expensive, we are cheaper. Actually, I like to use that term. We have a much better and cost effective way of running enterprise class applications in the cloud.

Patrick Moorhead: Now I love it. And I'm going to do a little bit more research on that myself. Thankfully I was not one who wrote that or talked about that, but I really appreciate you addressing it. I thought we had to bring this up. So, Vittorio, I really appreciate you coming on and talking about multi-cloud and I'm sure this will inspire your customers or potential customers to check out VMware when it comes to multi-cloud. I do think you're in a unique position where you are between the OnPrem OEMs and the public cloud services and the development environments out there. And in one way, shape or form, customers have to bet on something, right? And you just have to bet on, based on what's portable, what has a future and what the cost is. And I think what you're offering is very provocative. And I am looking forward to learning more at VMware Explorer. Okay. Not VMware, not VMworld, but VMware Explorer. Are we going to hear some great new stuff there?

Vittorio Viarengo: Well, yeah, of course we always keep lots of goodies to announce and showcase our at our user conference. And the name change signal a new path for us as we embracing the public cloud, multi-cloud. And also this talking about unique position, I think what is very differentiated for us besides the fact that we have that enterprise credibility and pedigree of having run all this

application for so long. But if you think about the multicloud world, there are tons of great companies that are providing point solutions. You have snowflake, Atlassian, Azure code for management, you have security specialists. And so, providing multi-cloud solution, but point solution. Then you have hyperscalers that provide a platform approach with the application development management security, but for one stack. And so we believe that we are the only company out there that is looking at multicloud world with a platform approach. So end to end, but that works consistently across multiple cloud. And I think that requires a level of investment and DNA that only VMware has right now.

Patrick Moorhead: I'm just going to say it flat-out, if you're an enterprise who buys into multi-cloud, you have to bet on lingua franca, and there's literally only maybe a few companies that can offer this. And VMware is one of those. So very nice talking to you, Vittorio, thank you so much for educating folks here on the Six Five Summit. And hopefully we can meet up at Explore.

Vittorio Viarengo: Yeah. Can't wait to see you back in person. And thank you for having us. This was a true pleasure.