



The Deloitte On Cloud Podcast

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Title: Cloud 2022: growing pains, new tech, and solving the complexity conundrum

Description: Despite—or maybe because of—growing adoption across all industries, cloud is still experiencing growing pains, but the future is bright. In this podcast, David Linthicum talks with Converge Technology’s Steve Worthington about cloud trends for 2022 and beyond. Steve’s take is that technologies such as AIOps will bolster cloud success, but the trend toward multicloud and hybrid cloud architectures has introduced serious cloud complexity issues that will require a human touch to solve.

Duration: 00:22:01

David Linthicum:

Welcome back to the On Cloud Podcast. Today on the show I am joined by Steve Worthington, a cloud computing architect at Converge Technology Solutions. Steve, thanks for coming on the show today.

Steve Worthington:

Oh, thank you for having me.

David Linthicum:

So, Steve is in Minnesota, by way of Massachusetts, and appreciate him being here. Like a lot of people, we have on the podcast, we met at some point in time. We think it was the '90s. We narrowed it down to decade. But I'm sure we're going to be starting, meeting more often now that he's been a guest on the podcast. So, Steve is a consulting architect with Converge Technology Solutions, specializing in applying cloud and emerging technology to business problems. With over 30 years of IT experience, Steve has worked with many technologies over the years but has spent his last ten years or so concentrating on cloud, public, private, and hybrid, and associated technology. Specializing in the enterprise market, Fortune 1,000, Steve has worked in a wide variety of vertical and horizontal markets including insurance, financial services, marketing, healthcare, retail, food services, manufacturing, distribution, and has experience in migrating and natively designing for all major cloud hyperscalers. Boy! Fill in the—well, I guess you've got a lot of experience --

Steve Worthington:

Yeah, I sort of—I got into this cloud stuff in oh, let's say about ten years ago, and of course it's changed a lot since there. And some of the early cloud stuff, it was more hosting, right? But now in the last few years, I've got much more into the cloud-native technologies and making sure that that works in terms of what people are trying to do. And I suppose the point that I just sort of said there is that I'm on that cusp between business and technology. I mean, most of what I am trying to do is ensure that business is driving technology and not the other way around, right? And I think everybody is looking at cloud, right, one way or another, so it's a fun and interesting time.

David Linthicum:

It's a fun and interesting time. And speaking of that what are the three things that occurred in cloud computing last year, 2021, that you found to be more important than others?

Steve Worthington:

It's difficult to pick three, but you know what? I think the main one is that cloud isn't infallible. I mean, the outages I think were a big thing last year, right? So, I think that was an important lesson to learn, and I think we're seeing some fallout from that and maybe we can talk about that a little bit later.

What else? I think it's interesting that GCP is getting more exposure. We're talking more and more to people about GCP. I think it's becoming much, much more of a force in terms of the hyperscalers and what they're doing and where that's going. And I suppose the other thing is the rise of serverless, particularly containers in serverless, although I think that is also causing confusion. We talk about ECS and whether we'll go with EC2 or Fargate on AWS, is Fargate better than Lambda? Where do we go with some of those things? So, I think those are the—kind of like the three things that I would talk about, not to mention the containers—the aspects of Kubernetes as people are looking more and more to get into that. I think ROSA appearing on AWS was sort of a big thing from that point of view, too, OpenShift on AWS.

David Linthicum:

Yeah, I think the outages are certainly something that occurred last year, but the thing is I never thought it should be a surprise. I mean, nothing's infallible, and clouds are going to have an outage, and certainly when you look at cloud computing and their uptime record compared to enterprise computing, your typical proprietary systems, it's going to be far superior. Also, you have a huge group of people that are maintaining the systems, and normally if there's a problem it goes away pretty quick. But that doesn't mean it doesn't impact the business, and certainly has some questions, and people kind of understand the risks. So, we're going to have outages from time to time—it's not going to stop—just because it's technology. Technology doesn't work infallibly, whether it's cloud-based or infrastructure based.

On the serverless stuff, I agree, and I think the big caveat there is that we need to kind of figure out when we're going to leverage that technology correctly. I think people have a tendency to go for it and go for containers and serverless technology much more for the wrong reasons. In other words, it's more hyped, resumé-enhancing kind of thing, versus is it really technology that's needed for the solution. What are your thoughts on those?

Steve Worthington:

Yeah. I mean, I think that's exactly right. There are lots of different scenarios where I think containers do make a lot of sense, but you're right. I think there are people trying to push stuff into containerization just because they want to be able to say, "Well, we've got all this stuff sitting in Kubernetes somewhere." I still think that some of the problems around that—we might touch on later as well—are things like people are talking a lot about—in storage around containers and needing certain things and the containers are getting bigger, and then they don't work, and they don't do what they need to do. And, so, that's—I'd agree with you, right?

David Linthicum:

Yeah, it's really a matter of picking the right weapons for the battles, and I think that's going to become more of a focus in 2022, this year and next year. I think that people are a little bit more pragmatic in how they leverage this stuff. Optimization, the ability to leverage the right technology for the right purposes, for the right reasons.

So, speaking of moving forward in 2022 and looking back at 2021, what do you think are the vertical markets—finance, banking, insurance in the finance area, and also retail and healthcare and things like that—and who's consuming more cloud than others and how is that likely to change moving forward, or will it change?

Steve Worthington:

Well, I think financial continues to grow, right? But I think what's really happening is a lot of the more traditional industries out there and verticals, particularly anybody that's consumer-facing, right, so hospitality—and that includes not just hotels but restaurants as well. I mean, we're doing a lot of work right now with bigger restaurant chains, particular franchisee restaurant chains, who are starting to realize, particularly with COVID, we don't just feed people.

We need to understand more around technology, and we need to be able to have next-generation technology where we can interact with our consumers better and better understand our consumers. Airlines—I think it's—I was heavily involved in building a big datacenter, one of the biggest Vscale implementations for a major airline about, what, five years ago. And it's no secret that they're moving all of that to AWS; that's been publicized quite

widely. So, I think that those are sort of the areas I particularly see some changes in. It's—I think every industry's getting more into the cloud, right, as we look at this.

David Linthicum:

Yeah, it's funny as finance was really kind of an early adopter of cloud computing. They kind of jump into any technology trend pretty heavily. But we're seeing a lot of news reports that some of the banks are pushing back on cloud computing, specifically around their need to support their verticalized applications, in other words things that are dealing with banking regulators, things like that. They're finding those are a little bit more difficult to move into the cloud, and so they're stopping their cloud migration in order to figure out what to do with these things. Now we have the option of industry clouds and better analogs that exist in the cloud, so we have the ability to move them there. What do you think is going to finally get them off the dime and get them moving into cloud?

Steve Worthington:

Well, I think part of the biggest issue here, right, is that they look at a lift and shift and go, "This doesn't make sense. This doesn't solve our problem, and if anything, it makes the problem worse." It's the fact—it's that rewrite of applications, right? And one of the things I think is kind of happening is they keep looking at reverse engineering what they've done, and I don't necessarily know that's the best route to go. I mean, my feeling on that is the better route to go is that they should be designing for the cloud and building something new that is going to allow them to do what they need to do, and those sort of environments.

David Linthicum:

So, say we're doing this podcast in a year's time, so 2023, and what do you think we're going to be talking about in terms of the major moves that occurred in the cloud computing marketplace in 2022?

Steve Worthington:

That's always an interesting question, right? I think people are getting much more cloud savvy. I think we were just talking about it with the financial industry, right? So, I'm hoping we're going to see less lift and shift and more people thinking about how they really want to use this technology and what makes sense to do things. I think the big thing that's coming is AIOps. My colleague Jonathan Goff calls these people citizen data scientists.

David Linthicum:

I like that.

Steve Worthington:

I mean, the idea that we're starting to reach the point—yeah. We're starting to reach the point where there are plenty of SaaS applications out there that allow us to be able to start doing more around AI and machine learning. The whole HPC environments that are coming up and that whole next generation of data stores. And as that becomes easier to use, I think that we're going to see a change there, and we're going to start seeing that happen, definitely having a lot of conversations around that with various people, right? People are looking at these data lakes they've got—well, what are we going to do with them? How are we actually going to use them? Where are we going to go with this stuff? So, I think that's good.

The other thing—I think there's a move towards some power computing, IBM Power. And there's a lot of stuff out there still sitting in datacenters, particularly (Inaudible) for example, that's slowing people down in terms of their shutting down datacenters. Google and Converse just recently have announced a marketplace offering for IBM Power on the GCP and I think we're going to start some of that, seeing more of that move. People are—because of the limitations of x86, there's people looking at what can we do with Power. And some of that also goes back to what I was just saying about AI. So, I think those are some things that they're probably going to see.

David Linthicum:

Yeah, I think I agree with you, the AIOps stuff. I think there's also going to be a move to focusing more on CloudOps and the ability to kind of do that much better. I think people are running into CloudOps walls which were developed by a complexity wall. There's just too much heterogeneity in—and we're going to talk about multicloud next. And ultimately you need to leverage abstraction automation to deal with those issues, and so AIOps is one of the few weapons I think we have out there that's able to solve that problem.

I think moving forward that AI is going to certainly be a growing factory, and leveraging data strategically is still going to be a focus. I think it's going to be on more bread-and-butter topics, the ability to kind of leverage this stuff as a true force multiplier, a true value driver for the business. And I think that's what 2022 is going to be more about than anything else.

So, focusing a bit more on hybrid multicloud strategies and design issues that enterprises are in essence wrestling with right now—and this is something I've done a lot of research on; I'm sure you have as well. How do you see that continuing to go in 2022? What are the core issues we're going to be wrestling with? How do we solve those problems? What are the better approaches we have? Are there any tools and technologies we should be looking at right now?

Steve Worthington:

Well, I think everybody kind of has some sort of multicloud, hybrid-cloud environment going on right now, right? They have that, and then people are starting to look at what can they move to the cloud and where to do stuff. I think the biggest problem with the multicloud strategy is the lack of interoperability between clouds and on premise, I think that is the one thing that everybody is really battling with.

When it comes to actually doing deployments within those environments, I think the biggest issue is network and security. Ingress and egress components, particularly moving data around, latency between having things in different environments, making sure that—understand what is going on in terms of changing around endpoint security to work with these different environments that are happening now, ensuring there's enough bandwidth—I mean we come across people who say, "Yeah, well, we want to back up a petabyte of data every day." And it's like, well, no, that's not going to happen, right?

So, I think that a lot of it is just understanding what's possible and what makes sense. We spend a lot of time, it seems, working on understanding how all these networking components are going to come together. And it's not just the sort of physical network components, things like firewalls and what have

you, but it's other things. It's DNS. It's managing IPAM. When we have Infoblox on prem, we want to use Route 53 or Google Cloud DNS; how are we going to get those to work? Who's going to be the authoritative piece of this? What's going to happen there? Active directory—again directory services, getting all of that stuff working in these different environments. These are the things that I think are heavy lifting in terms of design. Each individual component is not that difficult, but it's when you put them altogether that starts to be some of the problem that you have there.

David Linthicum:

Yeah, I agree. And I think the big hindrance to multicloud success would be complexity and heterogeneity. And I think that ultimately the only way to solve those issues is to figure out common services and the ability to do things in a common way with common mechanisms—that means common technology—in and between the various cloud providers. But you just really kind of formed the problem. In other words, we still have networking issues. We have to deal with egress. We have some sort of a system that may span various clouds, and typically we don't see that a lot, but some systems will. How do we deal with heterogeneity? How do we deal with the interconnectivity? And, even if the systems are decoupled from each other, they're different applications, they can't be silos unto themselves, and so we have to integrate the various databases. And you just hit it—ingress and egress costs. Get one of those bills and you won't do it ever again. Those are tough.

Steve Worthington:

Yeah. I mean, we're seeing a lot of people using Kafka, right, as an event messaging to go across databases and things of that nature. But we get a lot of things going on. We start to put a transit gateway in, for example. All of a sudden, your zero-ingress cost now has a cost because there's a cost of all of that data on that transit gateway. It's an interesting problem, but what keeps someone like me busy, right?

David Linthicum:

Yeah, and I think it's the problem that I think we need to solve moving forward. I think we've all figured out how to build, deploy, migrate, create net new systems on a particular cloud-native system. But if we're getting into multicloud, the multicloud becomes the platform and we're building all this interconnectivity and building these common services. So, it's more important as to what we're building in between the various cloud providers, even though these things may be running on various clouds, conceptually versus trying to figure out how each one runs individually. And I think that's where we're going to get into trouble.

Right now, people are hitting a complexity wall—that's what the industry is calling it now, not just me—where they have so many technologies in play, there are so many moving parts, that they're moving from say a single-cloud deployment with 2,000 services under management to a multicloud deployment with 5,000 services under management.

And, by the way, we're not increasing your ops budget. You're sticking with the people you have and sticking with the same talent base you have. So, figure out how to operate those systems in this new world where you're going to have more moving part. And it ultimately leads to vulnerabilities, leads to security issues, performance issues, and then cost issues, which we've just discussed.

Steve Worthington:

And I think the other thing is a big push, right, to infrastructure as code, and a lot of that push is around compliance. We don't want to open up a production console for anyone to access. We want to use a DevOps pipeline to do everything. We want to make sure that this is all done in a single way, which is found. And trying to get everything into that single tool, right, the idea being, okay, so we can deploy these components in any cloud. Well, that's fine, but you've got to fork that tool because it's not the same deploying something in AWS and deploying something in GCP. So, I think people are getting towards that, but then the other component of that is the whole monitoring. And, as you said, AIOps and what have you, getting that to work across cloud is—also provides complexity, becomes difficult to work out how to get all those components in sync basically.

David Linthicum:

The thing is moving forward I think the tools are going to be important, but they're not going to save us. This kind of comes down to good architectural best practices and design and how you build and deploy these systems. And I think if you try to do it ad hoc, everybody operating independently and there's no close coordination between how you're doing security and governance and monitoring and management and compliance, things like that, that's how people are going to get into trouble.

Steve Worthington:

Yeah.

David Linthicum:

So, we kind of have to move back to kind of a centralized command and control model in a certain way, but do so in such a way where we're not compromising innovation and not compromising speed. How do you think we do that?

Steve Worthington:

Yeah, well, no, it's interesting, because if we go back four, five years ago, there were a tremendous number of supposedly cloud management systems that were sitting out there, right? But I think we still do need some sort of centralized command and control, as you say, like a single pane of glass that can go across all these clouds. The problem with that is that, because everything is such a moving target on all of these hyperscaler platforms, just trying to keep up with that is tough, right? So, I think that there is a need for something like that, and maybe those type of tools will make a comeback. I don't know. I don't have a solution.

David Linthicum:

Well, I think the solution really kind of starts with intelligence. In other words—and not AI intelligence. I'm talking about human intelligence and the ability to get enough talented architects out there, men and women who understand how all this stuff is configured properly, and even some best practices in how we're going to move and leverage this technology in a consistent and meaningful way where we can repeat these patterns over and over again. Do you see that as something we're going to –

Steve Worthington:

I would agree 100 percent with you on that, and I think that's part of the problem right now. We do have people specializing, right? But as we get into this multi, hybrid cloud, they need to understand the similarities and the differences, right? And I think that is part of the issue here, is there's not enough people that can look at these different environments and say, "Well, that will work here, and this will work there, and this is how we're going to bridge those different gaps."

I think some of us that have been around for years—I've got 30-odd years of experience in this market. We've seen stuff come and go. It's just being able to visualize how all this stuff ties together. I think—and not just that, but also tie it back to the business, as I said earlier. And I think anything to do with cloud, there's got to be a financial consideration here, right? Because you can do things multiple ways in the cloud, and some of them end up being expensive and some of them don't. I think that my guiding principle here is IT has to become a profit center, not a loss center within how people are putting their stuff together.

David Linthicum:

Yeah, I couldn't agree more. And I think also we have to understand that just because something works, that doesn't mean it's optimized. We can have something that seems to work and seems to solve the issues, but we may be leaving \$10 million a year on the table because of the under-optimization of the architecture and the configuration of the technology. We talked about making something overly complex, leveraging containers where there in this case they may not be needed or not leveraging containers where they should be needed, and the ability to kind of understand your requirements and figure out the solution patterns to make that work. So, Steve, where can we find information about you personally on the web as well as information about your company?

Steve Worthington:

Well, you can find me on LinkedIn. I have a LinkedIn profile out there. And the company's website is ConvergeTP.com.

David Linthicum:

It's great talking to you, Steve. You obviously have a lot of knowledge around cloud computing and certainly a good bead on where the industry's going, specifically around the rise of multi and hybrid cloud and how that seems to be the problem to solve. So, if you enjoyed this podcast, make sure to like us and rate us and subscribe. You can also check out our past episodes including those hosted by my good friend Mike Kavis. Find out more at DeloitteCloudPodcast.com. If you'd like to contact me directly, you can e-mail me at DLinthicum@Deloitte.com, L-I-N-T-H-I-C-U-M. So, until next time, best of luck in your cloud journey and everybody stay safe. Bye-bye.

David Linthicum

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