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The Deloitte On Cloud Podcast

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Title:	**Looking back at cloud's 2021: where we are and how we got here**
Description:	The past year has been pivotal for cloud. Adoption is growing, but many organizations have growing pains. In this episode, David Linthicum and Mike Kavis look back at 2021 and spotlight four prevalent trends that are shaping cloud today—and tomorrow. According to David and Mike, they are: greater multicloud adoption, an increased focus on CloudOps, enhanced cost-consciousness, and the realization that cloud deployments require the right people and processes to succeed.
Duration:	**00:16:23**

David Linthicum:
Welcome to this special episode of Deloitte On Cloud Podcast. It's almost time to close out 2021, and today Mike Kavis and I will be bringing you back and looking back on this year in the cloud. I'm your host, Dave Linthicum, cloud computing subject matter expert, author, speaker, and managing director with cloud consulting. And joining me is my good friend and colleague Mike Kavis. How are you doing, Mike?

Mike Kavis:
Pretty good, Dave. Maybe one day we'll get to see each other again in person.

David Linthicum:
Nah, it'll never happen, never happen. No, now we just stay put. How are things down in Florida, by the way?

Mike Kavis:
Pretty good, pretty good. No red tide this week, so I can breathe good.

David Linthicum:
Mike's on the beach and he said—that special tide that washes up, that can be a little disconcerting when it comes to smell. But it eventually goes away. So, let's talk about what happened this year, and this is exciting. And, ultimately, we saw, in essence, the COVID stuff coming to an end, at least in terms of focus, in terms of enterprises doing a rapid migration as quickly as they could. Things are still moving rapidly, but there's a little bit more purpose in everybody's steps as they move to the cloud. At least I have seen that in the last six months. So, we've got four topics Mike and I are going to discuss. Maybe you agree with them, maybe you don't, but, ultimately, this is what we saw in 2021. And this is where the trends are going.

So, the first is going to be increasing movement to multicloud and federation, and this may be the obvious one, but I think that what's happened this year is people went from talking about to using multicloud in every sentence that they uttered, and certainly federation of security and governance and things like that to support multicloud, to actually doing it. But what I found out is that the implementations are a lot less aggressive than I think we thought they'd be. So, while they're answering surveys where they say they're moving—leveraging two to three public cloud providers, they may have 95 percent of their stuff in one cloud provider and maybe 5 percent of their stuff in the others. And, so, it's not necessarily as even as everybody thought it was. What are your thoughts on this?

Mike Kavis:
Yeah, I agree. Multicloud, I joke, is usually not a strategy, it's reality, and then the strategy comes to kind of harness it. So, typically we see a lot of workloads in one cloud, but there are certain lines of business maybe investigating others. But there are examples where it is more even. I've done a lot of work with SaaS providers, and they kind of have a requirement that they have to be able to support multiple clouds, because one industry may be threatened by one of the cloud providers and those types of things. So, in certain industries it's real. I mean—and it's purposeful, but in most of them it's more like a reaction to reality. Hey, we have all these clouds; now what do we do?

David Linthicum:
Yeah, and I see more multicloud implementations more primitive in terms of their focus. In other words, they're not necessarily dealing with cross-cloud systems. Security is still within the cloud providers in the walled garden, whatever cloud providers are leveraging. Operations are still within the walled gardens of the cloud providers that they're leveraging. It's still kind of a cloud-native game. And, so, even though there's some cross-cloud stuff going on, certainly the rise of AIOps and security managers, things like that which we see on the rise and saw on the rise this year, it's not necessarily as advanced as I think we thought we would. Final thoughts on this?

Mike Kavis:
Yeah, I agree. It's a multicloud world with single-cloud implementation, is how I'd sum it up. *[Laughter]*

David Linthicum:
So, the other thing in this year, we saw the increased focus on CloudOps. And I think this really was a byproduct of the mass migration into the cloud. So, as I said two years ago when the pandemic first came by, we went from, say, 60 miles an hour to about 75, 70 miles an hour in terms of implementing into cloud. So, everybody went into digital transformation mode. Understand that the new normal is going to be remote workforce.

Remote workforces are better supported via clouds in terms of access and how we're dealing with security, things like that, and certainly from a cost-effective standpoint. So, now we're getting to the point where we've got these things migrated and we've got the net new applications built, and it's how we operate them. So, the focus this year has been on operations or at least getting the primitive operations up and running. What are your thoughts on this?

Mike Kavis:
I agree. I experienced a lot of incoming requests under the label "reliability," and the solutions to many of these were around rethinking how we do operations more than—not the fact that the systems were so unreliable. It was more that we never rethought ops when we rethought app, right? So, it became a struggle to maintain these complex, highly-distributed, elastic applications using the tools and the processes that we've been using for 20, 30 years. So, I saw a lot of companies struggle. They moved their dotcom, or some key, to the cloud and had problems with SLAs and, so, they started addressing a lot of these CloudOps things.

And then the other side of it—I've seen a lot of companies who are fairly mature in the cloud now taking the next step. So, looking at things like SRE and doing chaos experiments delving into AIOps. So, I have those two extremes. One is we got there really fast. As you said, we moved to 70 miles an hour. But now we're down to ten, because we can't resolve these things. And then there's the bleeding edge people who are like, "We're taking it to the next level and looking at these new ways of doing ops."

David Linthicum:
Yeah, one of the points you made I think is exactly right. We're finding that the limitations within how we operationalize these systems are kind of raising the need to deal with CloudOps. And it really wasn't on the radar screen. And now when we deploy some of these very complex, very convoluted systems and applications that really weren't designed to be operated. They were designed to be run as applications, and they figured that operations would be an afterthought for these things, but now they hit a wall. And, so, in many instances they've kind of pulled back on their migrations and pulled back on their development before they can get operations up and running. Ultimately, they see it as the core limitations of it. What are your thoughts on this?

Mike Kavis:

Agree, and part of it is again the complexity of what we're building. Traditionally, for better or worse we threw it over the fence to people who were very good at infrastructure. But now we're dealing with microservices, we're dealing with stuff that comes and goes, and you need to move some of the ops closer to the people who are building it, right? And there needs to be more collaboration between the two. So, we really need to rethink how we run these complex systems.

Now I say that—a lot of stuff that's in the cloud was just lifted and shifted into the cloud. It's not all these fancy microservices and stuff, and that presents a whole new problem, because a lot of this stuff wasn't built to be running in the cloud.

David Linthicum:

So, do you think the focus will be on mediation of the complexity and mediation of the heterogeneity moving forward with these cloud deployments? Or will it be, in essence, trying to fix things by throwing tools at the problem?

Mike Kavis:

Well, I think it should be the previous, but I think the answer is usually the latter, right? They're going to be reacting to fires. But really, we should be taking a step back and thinking about, all right, what does this new environment look like? How do we simplify it? How do we take complexity out? How do we rethink how we approach these things? And sometimes, the complexity isn't all in the tech; it's in the organizational structures that you have to navigate to—you wind up with 80 people on a call at 4:00 in the morning, listening to the guy turning the screwdriver on the disk, right? We need to get away from that and bake more of this stuff into the infrastructure, into the applications, create more self-healing stuff, not create complex architectures if they don't have to be that complex.

David Linthicum:

Yeah, I couldn't have said it better myself. So, the other thing at least I noticed, and you may have noticed as well, is companies are more price focused. And, so, even though we kind of went into the pandemic with everybody spending as much as they could—money was no object to move as quickly as they could in the cloud—here we are in 2021. People are thinking about the prices of things, and the cloud prices, quite frankly, I think shocked a lot of folks in terms of what a usage-based model would be in terms of what it actually costs and went to the bottom line. So, while we had five percent of our applications, our workloads, our data in the cloud five years ago, eight years ago, now we're hitting 30 percent, 40 percent, and, so, now they're getting the big cloud bills at the end of the month.

And they're asking the question, "Are we 100 percent optimized? How do I deal with cost governance? How do I deal with FinOps? How do we deal with the business aspects of leveraging a cloud?" And many organizations are looping back and reengineering their systems so they can be more controllable, more accountable, put limitations on what people are spending. What are your thoughts on this?

Mike Kavis:

Exactly. There's this myth that cloud's more expensive, and my answer to that is it can be if you let it be, right? So, there's this big push for things like FinOps. How do we tag infrastructure? How do we proactively monitor costs, stuff like that? But also, there's a new challenge for architects, and architects need to be thinking about the cost of the design.

I'm not saying we never did, but typically we had our choice between this big IBM box or that box over there. And now there's all these instance types. There's—there's containers. Leave a container environment up and running for a day and see what your bill is. So, there has—part of the architecture needs to be more driven by what is the feasibility of this architecture? Because it's like leaving your lights on in your house. If you're not careful, you can run stuff up.

So, there's a lot of stuff that plays into it. I think really quickly you could blow your budget if it's not governed and architected correctly. So, yeah, we get to the cloud and now it's like, "Wow, this is a lot more than I thought it was," but that's not a problem with the cloud. It's a problem with the implementation and the governance of it.

David Linthicum:

Yeah, you just said something very profound. So, it's one thing to control costs of a system that if you have built, but if it's not architected correctly, it unto itself may be inefficient. So, you can put as much accounting and usage-based analytics and cost governance around the thing as you can, but the thing is if it's not optimized and it's leveraging too many resources and perhaps leveraging too much heterogeneity, perhaps built on too much complexity, all these things to try to stay away from as good architects, then it's going to cost more.

And, so, this is kind of something we're starting to think about more. In the past it was the "it worked." In other words, we put it in the cloud and the application worked, and therefore we put it into deployment. And we heard that cloud is going to cost less, and, so, everything should be hunky-dory. But the reality is that if these things are inefficient, that's where your cost overruns run into.

It's using up too much memory space, too much processor space, too much storage, and there're not necessarily efficiencies built into the system, certainly if you have an application that may be running in deployment that has 300, 400 instances that are running at the same time. So, it's a little bit different way of thinking. Do you think our thinking is going to evolve? Do you think that architecture will become more important moving forward in terms of costs?

Mike Kavis:

I think it should be, and I think those blazing the trail will get there. But a lot of people are just so early in their journey, just getting there is the goal, right? They don't even know what's out in front of them once they get there. But you and me, being around for a while, when we were first building, we had to be cost conscious because we had small pipes and very little compute, so we had to figure out how to squeeze every bit out of something. And now we just have this basically unlimited amount of compute, so it's really easy to not focus on those things and just consume compute, right? And I think when people look at their bills, even when they start implementing all these controls and stuff, they're still going to see crazy costs. And I think there's going to come a point where people are going to start challenging the architectures here. Once they've trimmed all the fat through the process and through the proactive monitoring of costs, they're going to say, "Man, these are bloated apps! We need to rethink how we build these things."

David Linthicum:
Yeah, you're absolutely right. The movement to consumption-based computing really puts more of a focus on architecture, not less of a focus, because if you're thinking about it, we bought compute, we bought storage, we bought all the other things that sat in the datacenter using POs, and it was sunk costs. So, in other words, we didn't get penalized for leveraging too much of a particular server if it's three percent utilization or 95 percent utilization, because it's already been paid for, which means the same amount of power. It's going to be exactly the same. But cloud is consumption-based pricing, and, so, therefore your ability to architect the system is going to be very effective in terms of how much the thing's going to cost you.

So, anyway, focus on organizations' skills and operations models is kind of the next thing, and I think that we're definitely in a skills-shortage situation. It gets worse every year. And I think people are rethinking not only how they obtain skills and create skills—that's certainly a focus—but how they leverage those skills in a more optimized way. I know your focus has been on operational models for the last year or so. What are your insights here?

Mike Kavis:
Well, the biggest blocker to mass cloud adoption within a company is not coming up with the technical chops. Even though there is a shortage and stuff, you always have enough smart people to build stuff. It's changing the way we build software, changing the way we provision infrastructure, changing the way we do ITSM. All of that, the people and process part, are really the blockers. And a lot of companies are starting to see that, and what I find interesting is we'll do this analysis, and we'll create like an operating model, a targeted operating model, and everyone gets that. In other words, this is the optimal way to deliver cloud services to your customers, whether those customers are developers, lines of business, or end customers.

But then you've got to turn that into an org model, and that's where the fisticuffs come out. And even thought they could look and say, "That makes perfect sense, that we organize around this structure," getting there just becomes political, right? There're people losing real estate. There're all kinds of challenges. So, this is the hardest part about cloud, is optimizing the organization for delivering cloud. That's what I see.

David Linthicum:
Yeah, and I couldn't agree more, and you're right. Everybody gets upset when change occurs, certainly when it's around their jobs and positions and areas of responsibility. Sometimes I think I should've got a psychology degree versus a computer science degree. It'd be more helpful in going out and mastering these changes. So, we'll see how it emerges going forward, but I think this is what 2021 is about so far. It's not over yet, but it will be soon. And we're looking forward to 2022.

So, if you enjoyed this podcast, make sure to like us, 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@Deloitt.com, L-I-N-T-H-I. Mike, where can we get you on e-mail?

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E-mail is MKavis@Deloitte.com, K-A-V-I-S, and on Twitter it's @MadGreek65.

David Linthicum:
There you go. So, until next time, best of luck with your cloud journey. You guys stay safe.

Operator:
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