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The Deloitte On Cloud Podcast

David Linthicum, Managing Director, Chief Cloud Strategy Officer, Deloitte Consulting LLP
Mike Kavis, Managing Director, Chief Cloud Architect, Deloitte Consulting LLP

Title: **Cloud 2022: distributed, edgy, more cost-effective, and in need of talent**

Description: What's in store for cloud in 2022? A distributed, edge-based cloudscape that's more cost effective, and growing at such pace that talent is at a precious premium. In this episode, David Linthicum and Mike Kavis look ahead at cloud's 2022. Their insights? More cloud architectures will include federated containers, companies will compete ferociously over top talent, movement to the edge will continue, and FinOps will enable organizations to understand and govern their cloud spend more effectively.

Duration: **00:18:13**

David Linthicum:
Welcome to this special episode of Deloitte On Cloud Podcast. This is a new year, and we'd like to start things off by looking forward with some predictions in cloud and what to expect to see happen in the cloud space this year. I'm your host Dave Linthicum, cloud computing subject matter expert, author, speaker, and managing director with Deloitte Consulting. And joining me is my good friend Mike Kavis. Mike, introduce yourself.

Mike Kavis:
Hey, Mike Kavis here, also managing director and cloud architect over at Deloitte.

David Linthicum:
So, what we're going to do is look forward to 2022 and what's going to happen that year, which is a little risky because podcasts are stored out there forever. So, Mike, we could be facing some criticism if we get everything wrong. But we're going to go ahead and make some predictions in terms of where we see the trends and what to expect in 2022. So, I'm going to go ahead and start off. I think we're going to see a movement to federated containers. I mean, it's been out there as a concept for a number of years, the ability to deal with things like federated Kubernetes and certainly stuff RedHat's been working on.

RedHat, IBM, and from other vendors we're seeing in the space, where we're not only leveraging containers intracloud, within a particular provider, but intercloud as well, the ability to create these distributed systems that run in these heterogenous cloud providers that's able to communicate across clouds. And we're going to have, at least we're going to move into at some point, according to the predictions, relocatable federated containers. So, we're able to write a container and deploy it on one cloud provider and be able to move it fairly easily to another cloud provider without doing a lot of changes to the environment, in other words changing their configurations. What are your thoughts on this?

Mike Kavis:
That sounds like magic, Dave. *[Laughter]* So, I think you're right that the plumbing to do this is coming. Some of it's there, but obviously we've a long way to go. My fear is there aren't a ton of use cases for this. There are some. My fear is that this will become a cloud strategy. Everything we build must be in a federated container. And I think that's a mistake. You talk a lot about complexity. There's some complexity in that. So, I think this is a great move for the use cases where it makes sense, but this shouldn't be your cloud strategy—that everything should be able to run everywhere. It's very expensive to architect that way and to manage it and to run it and all that good stuff. So, use it where it makes sense.

David Linthicum:
I think the movement of technology, at least the viability of this technology, will be about removing complexity. So, this is about abstracting the underlying cloud providers and not necessarily dealing with a specific cloud provider's security layer, and compute layer, and database layer, and AI layers, those sorts of things. To be able to remove and abstract you from having to deal with the cloud-native capabilities, and so we're able to run across clouds because you're able to do that. If you can't do that, by the way, to your point—I think it's absolutely right—it's going to be a waste of time. We're just going to make things a big complex mess and there's no reason to do this. And as far as—other than if you want to be the cool kid who does federated containers first, those sorts of things, there needs to be some real use cases.

But I do see some applications coming up where people are going to leverage these high-transactional systems that are going to be able to pay for themselves by having relocatable containers and clusters that are able to run across various cloud providers, and even systems that are able to relocate these things automatically. And, again, I think it is magic at this point, because I don't see a lot of products around there that do everything that we're talking about here. But I think if we're looking at 2022, I think the interest is going to be there. Anyway, final thoughts on this one?

Mike Kavis:
Well, I'm starting to really follow all this blockchain, crypto, NFT stuff, and there are a lot of companies that—media companies, financial companies that are embracing these concepts. If you want to talk about a piece of content that moves across many different types of environments, this whole digital currency and NFT space is a perfect example of that. So, I think the use cases are coming for these types of things. And as you said, it's so hard to do. We first abstracted the whole container thing to make managed containers, but now the next step is to make it managed containers across all different endpoints.

So, I see the use cases coming. I think it's early. There are always some that exist today. But I think as more and more companies start embracing some of these more modern digital currencies or you're getting into very different environments across companies. So, it's a very different model we're moving to. I think this will grab some legs over time.

David Linthicum:
Yeah, I think just a final thought on this after your final thought. Ultimately, we talked about price as an issue in the last podcast, and I think the opportunity here, if we do have these companies that are getting million-dollar cloud bills every month and they're getting the value out of those things, this is going to pay for itself with your ability to relocate workloads and processing across clouds so you can do cost-optimization of those systems. That's just another application for it.

So, the other thing, focus on skills development—this seems like an old hat thing skills shortage. We're not necessarily—but cloud projects are being limited by the amount of talent they're able to find in the space. And the ability to build skills, and the ability to recruit skills, and the ability to do this just in time, just-in-time skills development, seems to be the focus and will be the focus in 2022. So, while it seems like a topic that's old, it really has a new set of urgency that's around doing this. What are your thoughts on this?

Mike Kavis:
Well, I think what's new is the demand part of it. So, if you look right now, we're one of several large consulting firms. We're looking to bring in tons and tons of people. The cloud providers are looking to bring in tons and tons of people. The big banks—one of the big banks I'll leave unnamed is—I think they're looking for 20,000 people, right? So, there's a lot of people competing for the same pool, so how do you grow that inside? And then the next trick is now that you've grown it, how do you keep them inside? Because the salaries are going through the roof. So, it's a big challenge right now. One is finding

these people. The second is growing your own people and keeping them. And it's going to be that way for a while, and as everyone moves more—what are we, five or ten percent into the cloud now or something? What's the industry number now, Dave, most companies?

David Linthicum:
Applications it'd be 20 to 30 percent I think.

Mike Kavis:
Okay, 20, 30 percent, so we're already short, and we want to get to 50 percent. So, this is a challenge that we're going to have to deal with.

David Linthicum:
Yeah, and things are going to get tougher as we move forward. You've got to remember that when we migrated to the cloud or built some of the net new applications in the cloud, that's low-hanging fruit. We're going to do the easiest applications, easiest datasets first, and then move into the more complex things like legacy systems, mainframe-based systems, of course, and other things that are not as easy to be relocated or maybe cannot be relocated and have to find other hybrid solutions to get them going. So, put them in a managed-service provider or a co-lo or something else, and looking for skills and folks who are able to do that.

So, the big thing here I think is going to be automation of skills development and the ability to kind of leverage these training systems—there's a number of them out there—with the ability to have people find their own career path, the ability to let them choose as to what they want to learn and what they want to do, the ability to assemble a course thread that's able to give them the skills that they need, and do so in a much faster way, so be more efficiency in skills delivery.

So, this isn't about going back to college and attending college for two years to get a degree in cloud computing, because by the time you do that, whatever you focused on for the two years is going to be obsolete. This is about becoming an active learner and really kind of getting involved with where the skills are, and then keeping up with it with some sort of automated course set of systems, or learning systems, that the companies put in place. Anyway, final thoughts on this?

Mike Kavis:
Well, I think the other part is to understand that what you build today, a lot of the work you did may be q service tomorrow. So, building things in a way that's pluggable, so if a cloud provider comes up with a solution for the 10,000 lines of code you just write that you have to maintain forever, you could unplug that and plug in a service there.

David Linthicum:
I thought we were going to no code there, Mike? *[Laughter]* Well, we'll see if that works as well. We have a lot of technologies that are coming up and you've got to have the skills to keep up with them or else they're going to be useless to you.

So, next would be a focus on edge cloud, and I look at this through a couple of flavors, number one with the remote workforce rise, and it certainly has risen exponentially. People are going to live where they want to live, so there's no reason why someone can't live in rural Montana and work a high-tech job. However, they're typically nowhere near a particular cloud provider that they're leveraging. So, edge cloud systems provide you to put a smaller version of a cloud datacenter out closer to the people who are consuming that cloud service, and that obviously reduces latency, reduces network costs, those sorts of things. And also, you bring economic viability to areas that were more rural in the past and provide them with easier accessible cloud services so they can run their business.

The other thing would be edge clouds or microclouds that are sitting inside datacenters. So, if you look AWS's Outposts and Microsoft's Stack, the idea there is that we're going to have a subset of the cloud services that are running on hardware that's going to sit within a particular datacenter that you can touch. In other words, it's in your datacenter. And these two things are starting to have some traction because there are certain use cases where microclouds, edge clouds are going to have a viable use, and then also the edge clouds that run in these various areas to bring cloud providers and cloud services out to people who typically could find difficulty in getting them. What are your thoughts here, Mike?

Mike Kavis:
Yeah. I mean, I wrote an article years ago about small and big data and people kind of chuckled at it. But the small data part was, there are some actions that you take based on a datapoint. So, like, if you use the example of a windmill farm, I can put sensors on a blade, and if I detect a certain vibration or a certain wind force, I can make a decision. And that's small data, right? I don't need to send that to a datacenter or cloud, right? I can make those decisions there, but I need some kind of connectivity. I need enough power to do some of these things, right?

But then if I want to understand long term how I can proactively look at weather patterns, for this example, or those types of things, then I want to bring certain data back to the datacenter or the cloud and do some kind of analytics. So, that's just one case. There's a lot of examples where it just makes sense to do things locally, and then it also makes sense to bring the right datapoints back and then make kind of analytical decisions. So, there's a lot of use cases for having both local compute and big datacenter cloud compute.

David Linthicum:
Yeah, I think what we're saying here is let's put the processing and the resources that are needed closer to the people who are consuming them.

Mike Kavis:
Exactly.

David Linthicum:
And whether you're dealing with microclouds or an edge-based cloud center, the thing is we're able to operate these things in distributed way. And cloud providers have been able to do this for a number of years and it seems to be fairly reliable; you don't see a lot of outages occurring. So, your ability to reduce latency, your ability to provide accessibility, and your ability not to have this craziness where we're sending information and responses 5,000 miles

across the world to get a response back and having to deal with those latencies—there's no reason why you have to do that. So, this is a matter of networking the various cloud-based systems, whether it's in your datacenter or down the street in an edge cloud center, and just rethinking the fact that we can't put limitations on this. So, this isn't about centralization of computing as a model; this is about distribution of computing and our ability to assess the computing where we need it, when we need it, and with the latency that we need. Anyway, final thoughts?

Mike Kavis:
Well, to your first part of this about people in remote areas, there are solutions in remote areas, too, right? So, now we can bring technology to places that just didn't have the bandwidth now without bringing the entire cloud or datacenter there. So, I've seen datacenters that look like a shopping container, right? But it's a micro-datacenter that is providing services in remote areas for systems, not just people.

David Linthicum:
Yeah. If you think about it big search engines and cloud-cache managers, things like that, they've been pulling this trick for years. It's just a little bit more formal now and a little bit more widely distributed, a little bit more accessible for the little guy. And I think that this is a step in the right direction.

So, next would be focus on FinOps and other governance. We talked about price issues, more price sensitivity in the last podcast. Now we're talking about cost governance, the ability to have cost accountability, usage tracking, and your ability to take this down to even a microservice or an application down to very fine-grain levels so we not only can figure out what stuff is costing us, but what in there is making the cost go up? What human, what service, what applications, what databases? And this is some visibility I think most people don't have. I think I saw a recent survey where 82 percent of those leveraging cloud don't have visibility into the usage tracking system, so this is a problem that needs to be solved. Do you think 2022 is when we solve this problem or start moving to solve this problem?

Mike Kavis:
I think we start moving to solve the problem, and I see it in the requests coming in that we're working on. We have a practice that's building these capabilities out and they're as busy as they've ever been, right? So, a lot of companies are to that point, and again a lot of this is reaction to reality. All kinds of teams went out and built stuff, and then the bill starts coming in and it's like, okay, how do we resolve this? So, I see a lot of this going there, but I think if you take this to the next level—let's say you get this stuff in place. What are some of the amazing things you could do when you have these controls in place?

So, for example, let's say you're a SaaS provider, and you have to make these decisions whether I want to build single-tenant or multitenant based on the value of the client. You could start forecasting what does it cost me to run this client and hook it up to your accounting system and say what's the revenue, and you could a monitor that says, "Let me know when we're plus or minus five percent." You could start managing profitability of clients when you get this type of governance in there. So, it's not just let's make sure our spend is good. This can be a competitive advantage if you get to a certain level of maturity here.

David Linthicum:
Yeah, in other words you can track everything down to the value and what it's adding to the bottom line. Also, we talked about architecture and optimization, cost optimization, accountability for that, and this would finally do it. So, in other words, maybe some architects are nervous who didn't necessarily optimize the systems as best they could, but the ability to find systems that are overusing resources and therefore costing more and thus even perhaps put them into some sort of a DevSecOps chain where you're able to continuously improve them based on the optimization of the resources.

In fact, I do think cost governance is going to be part of these tool chains, because once we deploy it, it's not only deploying the thing to make sure that we scan it for security issues and performance issues and do the testing that we need, all those sorts of things, but looking at the optimization of the thing to make sure it's not sucking revenue away from the business. And in many instances, they don't have any visibility into that, other than they're getting a big bill at the end of the month and they don't know why. And this will allow us to track down to the fine-grain applications and even the services and the APIs from the applications. Anyway, final thoughts on this one.

Mike Kavis:
Yeah, I mean, I have this dream of simulation, right? So, you make an architectural decision, you run it through your pipeline, and then you simulate what it would cost before you go out there and blow out the costs, right? So, those types of examples—or you deploy, and you see a bad spike in cost, and you don't even roll back anymore. You just redeploy the old version—those types of things are where, once you get to a level of maturity, you could start doing.

David Linthicum:
Automating everything, man. I love it. That's where we're heading.

Mike Kavis:
Automate it all.

David Linthicum:
[Laughter] All right. 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@Deloitte.com, L-I-N-T-H-I-C-U-M. Mike, where can we find you?

Mike Kavis:
MKavis@Deloitte.com. You can always find me on Twitter @MadGreen65.

David Linthicum:
All right. So, until next time, best of luck with your cloud journey. You guys stay safe. Goodbye.

Operator:

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