



## The Deloitte On Cloud Podcast

**David Linthicum, Managing Director, Chief Cloud Strategy Officer, Deloitte Consulting LLP**

**Title:** To increase cloud value, it's essential to manage complexity and control costs

**Description:** As cloud matures, companies are focusing on getting more value from their cloud investments. In this episode, David Linthicum talks with Constellation Research's Dion Hinchcliffe about current cloud issues and how organizations can increase their cloud value. According to Dion, success lies in embracing multi-cloud, reining in cloud costs, and using cross-cloud management strategies like superclouds to manage multi-cloud complexity. Commercial clouds will play a big role, as well.

**Duration:** 00:27:15

**David Linthicum:**

Welcome back to the On Cloud podcast. Today on the show I am joined by Dion Hinchcliffe. Dion Hinchcliffe is Vice President and Principal Analyst at Constellation Research. He covers leadership strategies for the new C-suite, digital workplace, and internet of things, IOT. Dion, welcome to the show.

**Dion Hinchcliffe:**

Well, thanks David. It's great to be here.

**David Linthicum:**

How long have we known each other? I was thinking about that this morning. I think it's been a pretty long time, I think the early-2000s, back in the SOA days?

**Dion Hinchcliffe:**

That's what I remember. Yeah, I mean, I was first talking about cloud right when Amazon came out with it, and we were already friends back then, so it had to be like early-2000s.

**David Linthicum:**

Yeah, I remember that. I remember there was a few people in the industry who were kind of dealing with it. It was you and maybe ten other people at the time, and everybody knew each other. It was kind of cool.

**Dion Hinchcliffe:**

Cloud's come so far because people thought it was just crazy that you just put your data center out somebody who didn't know how to even deal with it, honestly. But we've come a long way.

**David Linthicum:**

Yeah, it's hard to sell that to people to understand what the reason or purpose of that is. Hey, it's great. No, we can share resources. It's going to be cheaper, it's going to be agile, it's going to be awesome. And crickets. But it took a while for, I think, the technology to inflect and certainly morphed from SOA in the cloud-based technology and now into a very complex distributed remote architectures, all these things that are moving today.

So, what have you been focusing on recently? What's been things that have interested you in the industry?

**Dion Hinchcliffe:**

Well, I've spent really the last ten or twelve years kind of going up to the CIO level, working—I'm doing a lot of sitting on roundtables now, talking about what's next, always whatever the next big thing is. And, so, it was IOT, it was digital twins, and all these great connected enterprises. That was a big focus area for me. Digital transformation, I spent a lot of time wandering around in the wilderness of that topic, which is still highly germane. I survey CIOs every year on that, and it's amazing. And cloud's in the center of that. Cloud transformation, digital transformation extensively overlap. And these days, the next cloud thing is things like artificial intelligence is just kind of creeping into everything, and that's become a CIO topic, and that's also a cloud topic because it's being delivered by all these advanced capabilities that are only being developed really in the cloud for the most part, other than some hardware, and so it's interesting.

**David Linthicum:**

Yeah, it is interesting how the whole industry's kind of morphed and now we're also returning to good ideas. You think about AI was developed in the '50s and it kind of went away for a while. My first job out of college was as an AI developer, then not as important anymore, probably too expensive to implement, and kind of went through an AI winter and then kind of came back and started to merge out maybe ten years ago. And, certainly, the reason why is because cloud computing made it accessible, made it, cost-effective for businesses out there.

It allowed them to leverage this technology to punch above their weight. And then also the notion of finally getting into digital transformation, so the digital enablement of business to kind of take you down to the next mile so we can truly get to the real-time enterprise and have embedded business systems or intelligent decisions could be made as part of an orchestration layer where we can change and manipulate all these layers. All this stuff really has kind of been on a radar screen for say the last 30 years, and the last few years it's kind of come around to becoming a reality. Is that your take on it?

**Dion Hinchcliffe:**

That's a great summary, first of all, David, of kind of how we got here. I would say that all those have been swirling around and we keep revisiting a lot of these topics and discovering it's just too hard, that these turn into large, multiyear projects that never seem to deliver as much as you hoped they were, and it was all difficult and expensive to do a lot of these advanced things that required hardware capabilities that were vast in their own right. What's really struck me is the level of difficulty and the level of complexity in implementing these has all really plummeted. We've really found a way toward doing a lot of these things much more simply. I mean, machine learning now, anyone can grab Python and some libraries off the internet and create really compelling machine learning applications. It took us a long time to get there, but you can develop something compelling in a week, and it's those timeframes are so exciting now. Integration is something you can just do so easily.

I grew up, and that industry was service-oriented architecture and how massive—it was the biggest cost for almost any project was all this integration. And, now, with all the web APIs and everything, the effort or the difficulty of doing that, and that's the definition of when civilization advances when the formerly difficult becomes easy, and that's where we are with cloud is you can stand up a data center. I used to have a script that would start 1,000 servers all at once on AWS and shut them down a minute later before I get billed too much. Those kinds of amazing agility and elasticity has just brought us to a tremendous place, and now organizations are observing that, and it's interesting to see.

**David Linthicum:**

Yeah, that's a great observation. I mean, it's also easy but it's also cheap, so that's the main thing. They couldn't spend millions of dollars in building a business system just to solve a small problem. Now we can spend thousands of dollars, which is kind of a drop in the bucket, and solve very sophisticated problems. So, speaking of sophisticated problems and looking at topics for 2023, so here are, multi-cloud's been—certainly I've been covering it for the last

ten years, and it's become kind of more important in the last few years, so how really important do you think multi-cloud's going to be in 2023 and what do the enterprises out there really need to look at?

**Dion Hinchcliffe:**

I think it's first important to note that any nontrivial business is a multi-cloud organization today. They have one or more—probably more than one of the commercial clouds in many of the things they're doing. And then they have all these SaaS applications that they're using from vendors that, in turn, use other commercial clouds, so they've got clouds everywhere. And the real challenge has been the data that we formerly really protected in data center, I mean, we knew where exactly it was and we had full control of it. That's been steadily streaming out into all these SaaS applications and commercial clouds over the last ten years as everyone has moved their workloads to the cloud, and that has really made it difficult to bring things back together.

And, now, we see all these companies building products to bring your data back and connect it all together so you have a lot of control over it. And that's kind of—that whole landscape is kind of—like the IT leader is like the proverbial frog in the slowly boiling water. One day you wake up realize you've got multi-cloud everywhere and you don't really have a good way to understand what you've got, where your data is are you over-provisioned, can you move workloads around when you need to, do you have eggs in the wrong basket?

Moving workloads around to different clouds, especially depending on the service, is not something that's very easy to do. It's one of the things that hasn't gotten easier really, except for maybe some core container-based workloads and some serverless workloads. That's about it. And, so, I think what we're going to see is this—I'm calling the multi-cloud reckoning, and that is finally realize how many baskets you've got your eggs spread across, how you can't really aim for efficiency and optimization if you can't move—if you don't have workload flexibility. And, so, I think we're not going to solve it, but we're going to have the reckoning this year in saying I've got to do better at managing multi-cloud or it's really going to bite us in a way that we're going to be able to get out of anytime soon.

**David Linthicum:**

Yeah, I like the term the reckoning. We've been writing and talking about certainly on this podcast the fact of the matter is we have to deal with the complexity and the heterogeneity that multi-cloud really brings, and it brings kind of a layer of different data repositories, as you mentioned, but it's also kind of core processes and dealing with ERP systems and all these things that are needed to participate to form the business. And, so, now that we're onboarding all these various cloud brands, the ability to utilize them in an optimized way that's going to be fairly cost-efficient is really what we need to focus on right now. So, it's not really kind of expanding the complexity as much as getting the existing complexity under control. Would you agree?

**Dion Hinchcliffe:**

I think that complexity management is pretty much what IT has become now. That's the most strategic overarching. How do we take what we do and make it simpler, easier, and as a result, it's more fault tolerant too because complicated things tend to break and are hard to fix. So, I think that's exactly right.

**David Linthicum:**

So, let's talk about public cloud providers and kind of where the market is in terms of maturity. Remember I think the market—you think about when it kind—people started to pay attention to it, it's about 15 years old. It's not a spring chicken. And, so, we've gone through different maturity layers, we went through kind of the normalization of the market, we had lots of different cloud providers and went to a few cloud providers because the amount of money that had to be invested to be a true useful public cloud. Now we're 15, 17 years later, we're hitting a point of maturity finally and we're going to see things like price competition and commoditization of the cloud process and the cloud services?

**Dion Hinchcliffe:**

Well, I mean, that's the question. Right now, we're kind of in economic times where people are looking at their cloud bill like they never have before, really, because it's getting so large, and we still have a long way to go yet in terms of cloud transformation and cloud migration. But we have, I think, hit this real early maturity—real maturity where there's now enough services in all the commercial clouds to write most applications that you have. You can move pretty much anything, and that didn't used to be true. You still had to do a lot of—if you had anything that wasn't kind of plain vanilla, you had to do a lot of new service development or migrate services over to the cloud that didn't exist there. Now pretty much anything you need, you need one of ten different types of database implementations or styles, well, all the clouds have that stuff. You can pick whatever you need for your application, whatever sort of design for them and pretty much migrate. So, I think the early maturity is there.

But I think the key observation I've had is that we have—Moore's Law is still basically happening in the industry, and so we should be seeing increases in compute power for the same dollar. Every 18 months, we should get twice as much compute power for the same dollar that we spend. That is not being passed down in cloud costs to users. We haven't seen what I call the Moore's Law dividend. You think of these services getting steadily cheaper at roughly the rate of Moore's Law, but that's not the case. I've done the analysis and, of course, what they're trying to do is conserve that dividend for themselves so that they can continue to grow their clouds and do R&D, invest, build new regions, and do all of that, but that has kept prices for cloud artificially high is what has actually happened, and now it's quite painful. I'm for the first time hearing—I don't see a lot of it in the data, but people genuinely think, “I have this dedicated application, does it make more sense for me to repatriate some of those things if I can do a big bulk buy?” I'm hearing those questions for the first time given the economics.

So, I think what we're seeing is I think price competition is really going to start to move toward exhibiting value. I see a lot of the cloud—commercial cloud vendors trying to provide tools to show you how much value you're getting and making sure you're not overprovisioning, which is happening a lot because it's so easy to spin up a cloud services. There's no provisioning essentially required, other than a click, in many cases. So, companies overprovision, they overbuy, they oversubscribe because it's so easy to do, and you have to remember to turn it off. And, so, I think what we're seeing is a lot of the cloud companies are trying to find the easiest way to provide more value at a lower bill, maybe without actually cutting prices. But I think price competition's going to come as we get further in the maturity level.

**David Linthicum:**

Yeah, I think I'm following you. And I think that where the industry is right now is exactly what you said. I think we're at a point where we're at feature saturation where it's very difficult to find features to add into public cloud providers that are needed, and so we're focusing on the existing stuff so we do storage better, and databases better, and processes better, and building containerized applications better, and orchestration better, and AI better, and all these sorts of things over time. But it comes very incremental in terms of the gain that these various services are making.

So, in other words, it's kind of fallen off. That doesn't mean people aren't buying them, but we're at a point where there's not a lot more that we can add into the cloud providers that's going to provide more value or is going to provide more sales for the business. And that's where I think that's fine because we're in a mature space, and that means that costs should drop and prices should drop, and to your point, we're becoming more optimized in how we're dealing with these cloud resources, but we're at a point where we have a great resource that we can leverage as an option for our IT systems. Doesn't mean we always have to leverage it. And where it's price competitive and where it provides the most value for the business, cloud should be leveraged.

And by the way, where it doesn't, it's perfectly okay to keep things on-premise and it's perfectly okay to repatriate things if you're going to find a better value in running these things on-premise versus what you're doing on the cloud. And we're getting to a point where it's more pragmatic optimization of the existing systems. We're still going to be migrating to the cloud. That's still going to continue moving forward. May do so at various speeds, but we're also understanding the true value that it's able to bring. We're also understanding that if this is going to reach maturity level, then what advantages are we able to bring back to the business based on the fact that it is entering this maturity level. What are your thoughts?

**Dion Hinchcliffe:**

Yeah, I think it's very interesting. What you said is such an important point because I do think that people would now look very skeptically at a CIO that said, "I want to bring back every workload that makes sense for us to run on-prem." They would say, "Well, what are we going—we're hiring all this cloud talent. They're not going to know how to do on-prem things, and there's not—there is a valid argument to that," which is why I think hybrid cloud, for example, and looking at what companies like HP and others are doing say, "Look, you should have total flexibility to run inside, outside, run that workload in your private cloud, in the public cloud, wherever it makes sense." And it should use the same set of skills and the same set of management tools and all that, so that's also another, I think, maturity point that we have that we hadn't been able to point to five years ago, but that stuff actually works today so we have that flexibility. But I do think private cloud is not a bad word, and it should definitely be an option as something that IT leaders should hedge in their cloud strategies.

**David Linthicum:**

Everything should be on the table, whatever's going to be the best—bring the best value back to the business, that's the platform you use. It doesn't matter if it's a private cloud, traditional systems, legacy systems, advanced cloud-based services, supercomputers, things like that. We've got to match the platforms up and with the value that can be brought back in the business. Looking at costs, it seems to me the last few years we had some sticker shock that occurred within as everybody moved very quickly into the cloud during the pandemic, then they saw some of the cloud bills that came back and I think to the point was most of it was self-inflicted. They were overprovisioning and not utilizing the cloud resources in the way that's going to provide them with the most cost efficiency. But CIOs are concerned about cloud costs, and managing cloud costs any way possible seems to be high on the priorities. What are your thoughts and what are the CIOs saying to you in terms of where they're thinking to manage—the ways in which they're thinking to manage cloud costs better?

**Dion Hinchcliffe:**

Well, they kind of have a Dr. Jekyll and Mr. Hyde in terms of the way that they're thinking. One, they don't want to put all their eggs in one basket. I've had very large Fortune 10 CIOs tell me, "I gave one big cloud vendor all my business, and I still can't get them to do anything special for me. I'm treated just like every other customer even though I'm one of the biggest companies in the world because they can't vary their services or their platform, do anything for me really that they aren't going to do for everybody."

So, they want to spread things around, and then now they don't know where all the buckets of cloud spend are, so they want to be able to say, "I want to divide my business a little bit, so I have a hedge. I'm not beholden to any one of these too much, and I can deal with things like outages or let's say the whole politicization of the cloud in geopolitics and things like that," which is coming and here, in some extent. They want to be able to hedge all those things, and so that makes cost control difficult, and with cloud making so many more costs that were previously hidden somewhere in the IT budget, you couldn't really find it, now it all puts it into one bill and makes IT look a lot more expensive than they told the CFO that it was going to be, and that's where a lot of those discussions come from.

The CFO's saying, "Wasn't this a cost-saving effort as well as all the other great things we get with cloud and now we're seeing it's mostly a wash?" You get all the benefits of cloud but it's not going to cost you a whole lot less than what you were doing before. And, so, I think the bottom line is they're looking at ways of reducing the cloud bill without reducing their service level, and the cloud companies are offering value and saying, "we're going to create more efficient chips that run in cloud better than any other chip out there in the world." It's like the whole custom silicon conversation's helping—they're going to try to provide more runtime without reducing costs, and so I think that's reducing the metric for CPU hour and things like that. So, I think that we're heading for more tough discussions this year—it's 2023 already—this year and next as companies really have to figure out how to get more out of their cloud contracts.

**David Linthicum:**

Yeah, and I think it's going to be the rise of FinOps and the ability to focus observability on the ability to manage and control cloud costs, and I think at the end of the day, it's going to be opening up your mind about different solutions that are perfectly legitimate as the preferred platform for particular data storage systems and particular workloads. And I think that your ability to kind of open your mind as an architect and not necessarily have tunnel vision on cloud-based solutions and look at the cost and look at the value that's being brought back to the business and look at the hard costs in terms of what cloud fees are, egress and ingress fees, and all those sorts of things which have a tendency to kind of blow out the bills, but also the soft values, the ability to kind of look at agility, scalability, and all these other things that cloud is able to bring that are very difficult to replicate on-premise. And, so, all those things need

to be considered, and I think that's what we're going to be doing this year is opening our minds and considering how we're going to manage this environment.

So, the topic of cross-cloud, I saw that you've been researching that. And, ultimately, the ability to do things in a cross-cloud way, which I think is related to multi-cloud and kind of where business is evolving moving forward remote distributed complex systems, the ability to drive things. So, where is that growing right now and what should enterprises be focused on with the emerging cross-cloud space?

**Dion Hinchcliffe:**

Well, I like the cross-cloud terminology because unlike multi-cloud, which kind of implies this cloud or that cloud, I'm going to take this workload and put it either here or there, it does—you're not going to start looking at the total set of all your cloud assets as one set, but that's what cross-cloud does. It says all right, let's look at everything across all the commercial clouds that we're using and all the places online and all the APIs and all the SaaS products, and let's start saying how can we combine these—we have to continue building new applications and new customer experiences and new employee experiences, and all of our services are in these existing clouds.

We want to be able to bring them together and remix them. So, cross-cloud makes that explicit saying, "How do we do that in a very secure way?" Because it's often in-between the seams of systems and the seams of clouds where you have a problem because that's when the data is moving from one cloud to the other, so how do we make that easy to integrate, easy to orchestrate, easy to source from all of our services and data and yet make it as secure as it would be in the single cloud. And, so, that cross-cloud makes that—it's an "and" instead of an "or." Multi-cloud is—seems to imply "more or," and cross-cloud implies a lot more "we're going to use this cloud *and* this data and another cloud and another database somewhere else and continue to build value."

Because that's really—we're in the era of what I call combinatoric innovation. We're not creating a whole lot of new clouds. We mostly need to rely on existing services, existing data to build new solutions. We might add a few new services and new data sources to that, but mostly has to leverage your existing ERP data and your customer data and CRM data and all of that however else you have to create new solutions. So, cross-cloud says that is where we have to get good at architecting. Multi-cloud is getting solved. Most of the vendors support some version of it, some flavor of it. They all want to be the cloud above all the other clouds, of course, but cross-cloud says let's just, from an architectural, from an operations, and from a cybersecurity standpoint assume everything's going to have to work together in all of our clouds and we're going to build new solutions on top of that. So, I think it's exciting. It's just a better bucket to kind of put all the things we have to do in.

**David Linthicum:**

So, it seems to me we're going to be focused on an automation layer that sits at a layer above the public cloud providers where we're able to do orchestration and cross-cloud security and cross-cloud automation of various systems, even build application communication, data integration, all these things that cloud should be really good at communicating in-between themselves but probably is a little difficult to do right now. Is that kind of your take on it?

**Dion Hinchcliffe:**

I think so. I maintain a short list of low-code—enterprise-class low-code tools, and they already work with all the clouds. Whatever you want to bring the service in from Amazon or Google or Oracle Cloud or Alibaba they already know how to do that and bring those together. And we see integration platform as a service and see all of these now in very mature packages, all these capabilities that allow us to combine that. I think that we still kind of tend to think, as IT folks, we always have one data center or one area where everything is focused, and you remember, David, back when I was worrying about Web 2.0 is the global SOA, which means that this issue of the entire internet and the whole public cloud are service-oriented architecture, and we have to think about that. That hasn't changed; it's just now gotten so much more sophisticated and mature, and we can actually do it now in a real enterprise-class way. So, yeah, I think what you said is right, and we need to have—and I don't know where the best place to orchestrate these things, but I suspect it's on a requirements-by-requirements basis, but we do need to have those things that kind of bring it all together.

**David Linthicum:**

Well, you think about it, we've had some of the other different thinking in this area and different ways of naming it. They call it metacloud and supercloud and cross-cloud, but kind of the ideas are the same is that ultimately we're going to have to put an automation layer, and in-between these various cloud providers, in order to deal with the resources in these in a pragmatic way that's going to return value to the business, and I agree with you that if you're doing this as if or this or that, in other words, this cloud or that cloud doesn't really solve the problem. Your ability to incorporate all your cloud services to bring them together any way you want to bring them together and couple them together to basically serve the needs of the business and do so as we mentioned earlier in a way that's going to be very cost-effective and doesn't blow your budget out of the water.

So, let's change gears a bit. So, talk about commercial clouds. In 2022, 2023, what was hot in the commercial cloud space and what are we going to see going forward? What patterns are existing now and how are those patterns going to grow into 2023?

**Dion Hinchcliffe:**

Yeah, great question. That's a long list. The innovation rate, the R&D development rate that the commercial clouds is just something to behold. You couldn't even track it if you wanted to take it on as a full-time job. That's how complex it is. But we definitely have some standouts. Things like streaming data are really big in terms of I need real-time applications, I need to give customers answers based on what's happening right now. That's something that got a whole lot easier in the cloud the last couple years, and especially this year. Database choice is another one, and Amazon's really doing excellent in that, but they're all working on that really, really hard.

Solving cloud native in a way that they can all kind of deal with the same ways, and Kubernetes definitely won. That was basically won by the beginning of 2022, but now I see this, that everyone assumes that's how all IT is going to be done, it's all going to eventually be containerized. But also prefabricated integration. I think it's AWS Flow that just got announced at re:Invent, or at least a whole lot of new modules for it that can really have this prefabricated

integration for all the common things where you need to have your cloud data brought into wherever your application is running. So, if your other clouds and other applications and their data being brought into your cloud application, that was big.

But perhaps where we developed differentiation is in custom silicon. AWS's Graviton chips are a great example of that. We're going to make it so that specialized workloads have chips that are designed to optimally run them, and that's how we're going to get cost savings is we're not going to reduce your actual cost of the services, but we're going to provide you so much more efficiency on the cloud side. So, I didn't think we would see a lot of innovation down low within the stack, but now we see these really advanced, for example, AI chips that can run really large models effectively, and that's where large language models is the future of AI.

There's so much positive results we're seeing from that in the last half of 2022. Everyone's building billion-parameter large language models to do all sorts of exceptional things to do that. The cloud folks are afraid that that's going to go into a whole bunch of custom-built hardware that can be built, then, more efficiently data center some CIOs might think, but they're building these advanced chips that can run all of the latest AI models in a very efficient way. Some of the stuff is really advanced in terms of their optimization and their ability to say you can't do this yourself. We have already hired the best people in the world and they built the hardware for it, and the only way you can get it is from us, and so—and they're all doing that to some extent. So, those are the kinds of things that I'm seeing out there.

And then just developer education. We're realizing that the adoption rate of all these services is slow because it's just so hard to learn so many services and how best to wire them together. So, I see a lot of architectural patterns and training and education capabilities and reference architectures that say here's how you build an application that has all of our services built—glued together best practices. So, I thought that was great to see. Didn't hear a lot about that in years past, and in 2022 I saw a lot more of let's get the developers absorbing this much quicker.

**David Linthicum:**

Yeah, I'm seeing that as well. I'm seeing a lot of innovations going in the cloud even though we do see kind of feature saturation, the ability—they're not adding a lot of meta-services, kind of the traditional IT services because they added everything. And, now, they're in essence working and making the existing stuff higher performing, more efficient, advanced technologies, making cloud the platform to run AI systems because of the customized compute hardware they're able to bring and the different services they're able to bring, so that ends up being the fact that it's reinforcing that for many organizations that are building advanced systems cost not being that as much of a factor but it always is. That's the platform where to build the stuff moving forward. So, where can we find more about you on the web? Where do you post?

**Dion Hinchcliffe:**

Well, I probably spend too much time on Twitter, so that's a great place to find me, my first initial, last name is my handle on Twitter. You can find me at [dionhinchcliffe.com](https://dionhinchcliffe.com), and you can always search for my research we did at Constellation Research. You can find out all the things I'm going to be working on in 2023, which is more of all this but especially complexity management, cross-cloud, and we just did a future of IT in general which is getting really exciting with all this AI, which is really getting into things like operations. So, those are the best places.

**David Linthicum:**

Yeah, it's great to have you on. Let's do it a little shorter than last time, get you back on and get you updated on what you're doing. Great ideas and great discussion. So, if you enjoyed this podcast, make sure to like us, rate us, and subscribe. You should also check out our past episodes, including those hosted by my good friend, Mike Kavis. Find out more at [deloittecloudpodcast.com](https://deloittecloudpodcast.com). And if you'd like to contact me directly, you can e-mail me [dlinthicum@deloitte.com](mailto:dlinthicum@deloitte.com). So, until next time, best of luck on your cloud journey. Everybody stay safe. Cheers.

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