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The Deloitte On Cloud Podcast

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Title: **What's ahead for cloud in 2023? Taking control of complexity, observability, and data**

Description: The coming year looks bright for cloud, but only if companies can take better control of their cloud ecosystems. In this podcast, David Linthicum talks with Deloitte's chief futurist, Mike Bechtel, about trends on the horizon that can help organizations brighten their cloud future. Mike's perspective is that taming cloud complexity via abstraction, leveraging observability, and taking control of data can result in better cloud operational efficiency and better returns on cloud investments.

Duration: **00:30:40**

David Linthicum:
Welcome back to the On Cloud podcast. I am joined today by Mike Bechtel. He is the managing director and chief futurist with Deloitte Consulting LLP. We both work for the same firm, and today we're going to take a look ahead at the tech and cloud trends that we're seeing coming in 2023. Hey, Mike, how're you doing?

Mike Bechtel:
I'm good, man. How have you been, Dave?

David Linthicum:
I've been awesome, man. I have been awesome. It's great to be back to work and attending conferences virtually again. So, that's a lot of fun. So, it's been a while since you've been on the podcast. We have a lot of new listeners, if you look at the stats, so catch people up on what you do and kind of what you focus on here at Deloitte, and the key thing, what do you typically do during the day?

Mike Bechtel:
Yeah. Well, so, I have the opportunity to serve as our chief futurist, which you can imagine divides people right down the middle, sort of like Notre Dame football, where I happened to go to school, right. You either lean in and say, "Oh, that's cool," or you lean back and say, "Oh brother, here we go." But futurism for us, it's practical, it's tactical, we think of it as Strategy 2.0.

We're in the business of making sense of what's new and next in tech for our clients. And, so, a typical day for me, sort of a play in three acts: I spend about a third of the day with our team doing first principles research, talking to startup founders, talking to academic institutions, talking to enterprise leaders, seeing what's new, what's out there, what's real. I spend about the other third of my day putting together, frankly, communications, publications, videos, podcasts that try to make sense out of all of that. And then I spend probably the final third of any given day engaging with our clients. In summary, man, I would say a third of the day on what is going on, a third of the day on so what does it all mean, and then a third of the day working with clients on now what are we going to do with it.

David Linthicum:
Yeah, we do similar things. Spend a third of my time talking to clients, third of my time doing the eminence stuff with the leadership stuff, and then a third of my time talking into this microphone.

Mike Bechtel:
Yeah, right.

David Linthicum:
So, you've got some exciting news coming. Care to share?

Mike Bechtel:
Yeah. You know, we're—well, by the time this is released, we will have recently dropped our Tech Trends '23, which is Deloitte's 14th annual flagship research publication chronicling interesting crunch case studies that are afoot at clients around the globe, public, private, organizations, governments, not-for-profits. Crunchy stories from companies you've heard of that are novelties today that stand to become most of our normalcy over the next 18 to 24 months. And, so, it's a lot of hard work. We've got a great team that does the research, the writing, the design, but we're really pumped about this work, and we're proud to get it out in the world.

David Linthicum:
Yeah, and it's my honor to work with that group. Smartest team I've ever worked with.

Mike Bechtel:
We're better for having you as part of the band, brother. Our cloud chops went from 10 to 10 million with your contributions, sir.

David Linthicum:
Aw, shucks. But it's the fun thing is I just get to learn about so many things that I typically don't get to learn about: utilization of space, the ability to kind of look at the practical applications, the evolution of AI, and lots of things that, really, our clients are talking about and asking about, but they're questions I think everybody's asking about right now. So, in other words, we're hitting 2023. What's going to change and how is that going to affect the way in which we do business or what we sell in the marketplace? And it's just so important that we kind of understand where the trends are moving so we can align our strategy to the business in a certain way to make the most of it. What are your thoughts?

Mike Bechtel:
Well, I mean, I'll tell you. One of the things that I've learned over my career, Dave—I started out as an inventor and then 12 years later, after a short stint as a CTO, I became a venture capital investor, and so I've been on both sides of that proverbial table between kind of the possibility side and the profitability side. And one of the themes that I've seen over the years is that there's a typical rational tech leader, C-suite executive, board member, they tend to look at future's work, anything beyond maybe a couple years out, as a bit of a distraction.

This stuff doesn't move the needle. But the truth is, if you don't have somebody, or at least a small team, looking out for icebergs or treasure chests over the horizon, you're going to miss them. The best time to act on some of these exponentials is when it still feels too early. And, so, I think that's the dance, at least in our team's work. It's how to recognize that these things might feel like distractions today, but they're going to be breakfast, lunch, and dinner in the not-too-distant tomorrow.

David Linthicum:
Yeah, I couldn't agree with you more. My stints as CTO, I always made sure there was a budget and a carveout for some folks in the organization able to experiment and dream, and it was just so important because that's where the ideas came from. We put the ideas in the pipeline, they eventually become a product, they're well-researched, we know how we're going to sell them in the marketplace, what problems the product's able to solve, and then you have the next generation of the business. If you don't focus on that, that pipeline's going to dry up, and you're not going to have anything to sell, and you're not necessarily going to go out of business, but you're not going to get an exit that you're looking for in the marketplace.

So, let's get at 2023 and where things are going to go next year, and this is always fun because we—it's going to be a persistent podcast and be out there forever, so people can pull this up at the end of 2023 and say, hey man, you guys are way off. But I don't think we are. I think we've got some pretty pragmatic examples that are already emerging and continue to be a factor in 2023.

And the first of that, and something you're covering as well, the taming of multi-cloud chaos in 2023 through some sort of an abstract cloud layer that some people are calling supercloud, some people are calling metacloud. The idea is that we have these complex infrastructures we're building. They're overly heterogeneous, typically because we're leveraging best-of-breed technology, so whatever you need, whether it's an AI system, it's going to be a data analytics system, what have you, we go ahead and pull the technology into the enterprise because it's easy to do so through the ability to kind of do a quick provisioning with the different cloud providers. Suddenly we have three to five cloud providers there, and we went from 1,000 services under management to 5,000 services under management.

We don't want to give up utilization of the best-of-breed technology, but the ability to operationalize those systems is going to be a huge challenge unto itself. And, so, where the industry seems to be going and other people—I myself, and other people in the industry—have been writing about for several years is that we're not necessarily going to focus on building things within the walled gardens of the cloud providers but build this abstraction and automation layer which is going to reduce a lot of the redundancy. So, in other words, we're going to have a single security layer, single governance layer. Of course, it's bespoke in terms of how you're going to do it, but we're pulling a lot of things that we're replicating within the cloud providers themselves and then pushing them up at a larger layer. And by the way, they may run on a cloud provider. They have to run someplace, but logically they sit above the clouds. What are your thoughts on that?

Mike Bechtel:
Well, one of the things that we've seen in our work, Dave, is this idea that when you're focused on emerging technologies, or all things newfangled, to quote good old Mark Twain, right, "The future doesn't repeat itself, but it often rhymes." I think back to the late-'90s, early-'00s when you had ERP system proliferation, complexity, heterogeneity. There emerged a whole class of middleware. We could probably fill a bingo card with the names of all the old middleware vendors we used to probably work with and remember. And that became the sinew, the connective tissue, that allowed you to deal with the hairball that had erupted. And, so, to your point, with this metacloud, supercloud—and I'm with you, pick your term. The industry will land on something.

But there's this overwhelming sense that, yeah, eventually we'll get to some kind of clarity and consolidation, centralization, one ring to rule them all, but until we do, we're going to need that pane of glass, that control tower, that sits north of the clouds and that allows us to almost deliver, as I kind of see it, simplicity as a service. Because you tell me what you think, Dave, but it feels like a lot of individually sober decisions result in a lot of individually best-of-breed capabilities. And what you end up with is a messy drawer full of stuff. Our kingdoms for a little bit of organization, right.

David Linthicum:
Yeah, you just hit the nail on the head. And I was listening to the keynote presentations at re:Invent, and one of the things that just kind of kept—I kept coming into my head is like they're promoting more technology that people are going to adopt, and we have to figure out how to operate that stuff. And it was great stuff. I mean, the fact of supply chain automation and all these things that are kind of coming down the line that I think the market needs, it's going to be adopted by a large array of enterprises out there that need the technology. But your ability to manage it just becomes kind of a core issue that you need to get at, and I think that's something that people have a tendency not to think about. And, so, keep in mind that it's not a single technology we're trying to sell here, something that's going to solve the issues. It's going to be a layer, a suite, an architecture, a stack of technologies that's going to solve this problem.

Mike Bechtel:
You know, an analogy I'd love to test with you here in real time—real time brainstorming—remember—most of us 21st century citizens are familiar with, or are in fact ourselves, cord cutting, like moving from cable TV to individual a la carte streaming services. And I feel like when that started, it was like, "Hey, there's one or two of these, and then there were six or seven, and then there were nine to eleven," and you've got all these streaming services. And to me, that's kind of analogous to what's been going on with multi-cloud where, I barely remember which of these eleven services I have; I don't remember which show is on which one, and I'm wondering if I'm getting my maximum value per dollar out of any given one. And then comes some of these organizing interfaces that basically say, "Hey, we'll be the universal search, we'll be the universal lexicon that lets you ask for a show, and we'll figure out which service it is." And I'm wondering if that's kind of how where some of the supercloud, metacloud's going to go, kind of this one ring to rule them all.

David Linthicum:
Yeah, and I think it's going to be an architectural pattern that emerges from this, and I think that's the way we're going to solve the issue, and it's going to be some technology stacks that are going to be derived from this architectural pattern. But if we're getting to a simplistic state, that means that we're trying to remove complexity; we're not trying to add complexity. So, if this thing that sits above the cloud and leverages abstraction automation needs to reduce the amount of complexity that we're dealing with and managing. And if we're able to do that, then we're able to succeed and move forward, and therefore, we're able to move even more best-of-breed technologies, even more stuff we see at re:Invent that we want to add to the system and have a management layer that's able to handle it and provided with the ability to scale, I love the streaming service thing. I actually made that same analogy in my InfoWorld blog a couple years ago when I saw it coming up.

I just kind of realized we're trying to solve the same problem, and everybody kind of got it. They understand where the complexity is, and the fact of the matter is that people have 20, 30 different streaming services, some they pay for, some they don't, some they may not know they're paying for, but they are paying for, and your ability to kind of leverage some sort of a system to simplify, to search it, and to deal with a common interface or a common platform is really what we need. We're not going to be able to scale at our present state. We're just—we can't add complexity without increasing the operations budget, and typically enterprises aren't willing to do that. They're trying to operate—they have a business to run. They need to add value versus removing value from the business. And, so, you work smarter, not harder, and really kind of that's the whole idea of this supercloud, metacloud abstraction automation layer. Final thoughts on this?

Mike Bechtel:
Just that I look forward to seeing where and who and how folks position these as again that organizing ring, as opposed to yet another ring for sure.

David Linthicum:
Yeah, I think it's—but we're going to see this in a big way in 2023. I just see the writing on the wall, and then also the investments being made. I'm like you; I look at where the money's being spent, in other words, where the development is going, and that's where the development is going right now. So, folks that aren't necessarily a public cloud provider are really kind of betting on the fact that this multi-cloud operations and management area is going to be a huge growth area. And I'm not going to list the vendors here who do it, but there's a half a dozen vendors, all huge multi-billion-dollar vendors, that are investing in this space, and that's because they see this problem—or see this opportunity—coming and they're building technology to make it work.

So, next would be rise—my prediction, but also other people agree with me—rise of observability for CloudOps, SecOps, and GovOps. SecOps means security operations, governance operations, and cloud operations. Observability is kind of an old engineering term, but it kind of reemerged about three years ago in the AIOps space. In other words, people who are operating systems, they use this term observability. So, we're not just deriving information by monitoring systems, looking at the current state, something moves from green to red, things like that.

We're actually providing ourselves with insights that allow us to get into predictive analytics, the ability to leverage AI technology, and AIOps is kind of where it came from. The ability to deploy applications and not just bolt-on monitoring and management tools but the ability to see what actually is going to happen not just from looking at real-time data but deriving from that data insights as to what happened in the past, what's happening now, and what will happen in the future, and the ability to react to those states in some sort of an automated system. Any thoughts on this?

Mike Bechtel:
You know, Dave, I live and die by tortured analogies, and to me, as I hear you frame out what observability is in this modern context, and in the kind of the OG engineering context, it's analogous to what we're seeing happen with this oft-used, sometimes little-understood topic of digital twins. There's so much activity going on right now with folks, whether you chalk it up to the metaverse, virtual reality, augmented reality, but there's a lot of this idea of creating digital doubles of things. And you can do that as a one-and-done snapshot and you end up with a digital tchotchke, but when you tie what we've heard called, or what we do call kind of, a digital thread that keeps a connected sinew between the physical thing and the digital model.

Then, what you find is you have this useful digital double that you can almost like imagine a middle mouse wheel. You can scroll into the future, you can look back into the past, you can move it around in space, you can model and observe it, a complex physical system in silico. And, so, as I hear your prediction on observability for CloudOps, SecOps, GovOps, my mind just goes to yeah, digital twins, even of digital systems, are absolutely increasingly a thing because people want to be able to not just know about the internals of things but the externalities, and they want to be able to look back, look forward, and otherwise model on the cheap by looking at bits and pixels instead of atoms and stuff.

David Linthicum:
Yeah, that's an excellent analogy, and I think it's very apt because, if you think about it, what we're looking to do is deal with massive amounts of information that really didn't tell us anything in the past and, ultimately, the ability to find insights into the data and the art, which it really kind of is an art more so than the science, the ability to look at data in different ways, derive meaning from data in different ways, and also apply new technology tools, AI being core capabilities with deep analytics, all these sorts of things. Where we're able to see in terms of—let's take security. We're able to see a breach that's likely to occur, not necessarily because a breach is occurring now, but we understand that will likely occur based on the fact we're looking at all these data elements and making sense and deriving information and insights from those data elements.

And, so, it becomes a fact that we understand how to do security and how to block things and encrypt things, but the ability to have these sorts of insights to see and respond proactively, even before they happen, whether it's governance operations, cloud operations, things like that. To the point we just made earlier about some sort of a system that sits above the cloud using abstraction and automation, this becomes kind of a key enabler to that stack. Your ability to have an insights engine which is able to run across different problems. And the operation problem's the biggest one, but certainly security operations, governance operations, financial operations, FinOps, and all these sorts of things where the insights really become the core catalyst to making these things work. Anyway, final thoughts on this?

Mike Bechtel:
Yeah, well just—the security thing specifically, I mean, as part of our Tech Trends research this past year, we spoke with some folks at the US Army who said, listen, we're literally not—not the Army, but United States of America isn't graduating cyber professionals nearly fast enough to keep up with the proliferation of the bad guys. And, so, enter AI, ML, sort of robot reinforcements that, to your point, can, not just react way faster than any human to a breach, but proactively predict based on this embarrassment of riches that we have in terms of data, predict where things might go south and get out in front of it. These are tools enabled by data and uniquely suited for machine intelligence. So, I'm with you on this trend, man.

David Linthicum:
Yeah, absolutely. And just getting back to the security thing, every kind of post-mortem I've done on a breach that I've done in my career, there's always indications, data that they knew that was in their local management systems that would indicate the breach. They just didn't have the ability to have

insights in how to find them. So, in other words, the information was there; there was just no ability to externalize the information to automated systems or humans that could proactively deal with the problem.

So, let's get into our final prediction, and this is one that I just kind of thought up this week and certainly listening to the keynotes at re:Invent, ultimately, and doing some blogging about them, there's a huge , which is the ability to have—and we just talked about defining insights and dealing with the power of data. As an old professor used to tell me, you need to find wonderful things to do with your data. Here we are in 2022, going to 2023, most enterprises aren't able to weaponize their data to really get to core insights to a business state to get into real-time analytics to get into an automated, event-driven supply chain, all this kind of goodness that you can get from having information that's stored locally or in the cloud that you're able to make sense of. And, so, moving forward, this seems like, number one, it's fairly rudimentary.

When I heard that, I said we've been talking about that for the last 30 years. What's new here? But the reality is now when you have the power of the cloud and other technologies and the power of AI and the ability to have kind of cool tools and databases to make this happen, we now have the opportunity to weaponize data and leverage it effectively, and I think 2023 is going to be the refocus on information, the refocus on data via what AWS is doing with the other public cloud providers as well where people are finally going to see the value, when we're going to take our enterprise data game to the next level. What are your thoughts?

Mike Bechtel:
Well, our research bears this out, man. I mean, we talked to over 25 organizations as part of this year's Tech Trends research, and the number of times the word data popped up, not just as a piece of but at the heart of the story, was staggering. One of the themes we've seen is this idea of data repatriation that after a 10-, 15-year ecosystem outsourcing, pick your term for federation, but after 15 years of sharing processing out into the cloud-based wild, a lot of organizations are saying, wait a minute, we need access to that data ourselves. We need to get that point-of-sale data back. We need to get that marketing data back, that merchant data back, you name it. And, so, Roman numeral one, I think data not just being important, but being reclaimed by organizations has been an enormous trend, and it's part of this weaponization, as you might call it, or have called it.

Two, last year we chronicled in Tech Trends this idea that data sharing is getting a lot easier. To be honest with you, you and I have seen, whether it's in a boardroom or a barroom or a server room, an executive will say something like, "We have all this data. It's like liquid gold. It's like oil." And you kind of smile and nod because it's the only polite thing to do, but in truth we know it's locked away in some old data warehouse and you can barely connect your own data, let alone connect with a third party for monetization, weaponization.

And, so, with the advent of cloud-native data warehouses, suddenly, a call to a row and column in your partner system is as easy as a call to your own. And, so, I'm with you. I think that the talk that we've had for 15 years around data monetization, data application, data weaponization, it's finally able to give its way to walk pretty much thanks to cloud.

David Linthicum:
Yeah, I could not agree with you more. And the reality is that we don't have to relocate all of our information in some sort of a single central source, and I think that's where we kind of dropped the ball over the last ten years in trying to consolidate information. Reality is we've had data virtualization since the '90s, and your ability to leverage the data where it exists, could be on an edge-based system, could be on this watch I'm wearing, and really kind of leverage it in a democratized way where we're able to really not matter where the information is. We're just able to abstract it and leverage it where it physically exists. And of course, it's a harder problem to solve, but the reality is it's solving a problem. We've had that technology for about 20 years.

So, moving into cloud, we need to put the data where it's going to be optimized for its use. In other words, your ability to get close to a customer, your ability to get closer to a sales transaction, whatever kind of usage you're in, but when we're getting with analytical services, it's not only understanding deep analytics or the way you talk about insights that we're getting into the data through these huge algorithmic analytical processes, but the ability to get real-time information and define these calculated views of the data that fit back into the business processes in real time. And, so, in other words, we're not—we're making decisions, whether it's supply chain, whether it's inventory reorder numbers, all these kind of sophisticated business decisions, with near-perfect information, which we're not doing today.

If anything, people have to stop and do their own analysis and research for a couple hours before they find the problem and solve the problem. This should be instantaneous. Any piece of information that exists in the enterprise, or in your cloud that you own, should be accessible, should be built into the business processes, where you're able to leverage the data any number of ways, any sequence, any structure, and it really doesn't matter where it is. And we just don't have those capabilities today. We need to start focus on solving this problem. It kind of gets me frustrated that we've been looking at this as a problem for the last 30 years. I can understand we didn't have the technology around 30 years ago, or even 20 years ago, maybe even 10 years ago to solve the issue. Now we have the opportunity to do it. Go get it done.

Mike Bechtel:
You totally do. And I wish I had a clearer, or cleverer, way to summarize your insight there, man, but you're right. The internet, for all of its majesty and all of its utility, has sort of been an interface-layer revolution. You have access to all the things from one search bar. Great. But there doesn't—to your point, we don't yet really have a full-on "capital I" internet for data, the ability to grab every little data bit out there. To your point, at a huge, big data Hadoop repository, or somebody's watch, I think that level of federated data reach and integration is one of the mountains we're likely to, or at the very least, have to climb over the next five, ten years.

David Linthicum:
Yeah, absolutely. And re:Invent was all about a lot of announcements relating to information and your ability to manage data in better ways and more real-time ways, and we've just got to get this act together. Whoever solves this issue within the enterprise wins the game. If you have to deal with real-time information exchange, your ability to have a business that operates in real-time, be able to make decisions, and act on business processes with almost perfect information—it's never going to be completely perfect—but it is going to win the game versus right now we just have these technical limits that we

put in place or we can't see the information. And it seems like we're building these very modern and these very impressive systems on top of it, but still not concerned about how we access and get at the data. So, Mike, where can people find Tech Trends on the web and where can they find your new show?

Mike Bechtel:
Yeah, grateful for the op to share. So, hop into your search browser of choice, type in Deloitte Tech Trends, and you're sure to find our Tech Trends publication on Deloitte.com. And as regards to the show and the webinar, that's going to be native to LinkedIn for starters, but we're going to be putting out some mixed-media articulations of all of this year's six trends. We cover AI, we cover, as Dave shared, some of this righteousness with metacloud, supercloud. We cover some goodness with regards to Web 3, what's real, what stays and what goes after some of the recent shakeups. And, so, you find that online as well.

David Linthicum:
Let me tell you, if you want to get the larger technology picture as to where things are going, this is where you need to look. It really is. It's an excellent report that's put out every year by an amazing team and check it out because it comes down to summarizing much of what you're going to need to know about where everything's moving. 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 deloitteoncloudpodcast.com. If you'd like to contact me directly, you can e-mail me at dlinthicum@deloitte.com. So, until next time, best of luck with your cloud journey. You guys stay safe. Bye.

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