Deloitte.

The Deloitte On Cloud Podcast

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

Title:	**Building the modern cloud with innovation, sustainability, and open source**
Description:	Cloud is undergoing a philosophical and technical renaissance. Innovation and disruption have become driving goals for cloud implementation. Sustainability isn't just a buzzword anymore, and the idea of super or metacloud, fueled by open source, is gaining force across the cloud universe. In this episode, David Linthicum talks with IBM's Roger Premo about this paradigm shift in cloud and how it's driving companies to change the way they think about cloud now and in the future.
Duration:	**00:28:02**

David Linthicum:
Hey, guys. Welcome back to the On Cloud podcast. Today on the show, I'm joined by Roger Premo, General Manager, Strategy and Corporate Development at IBM. How're you doing, Roger?

Roger Premo:
Doing well.

David Linthicum:
So, where are you physically located?

Roger Premo:
I am in Needham, Massachusetts, just a few miles outside of Boston.

David Linthicum:
Great time of year to be there. You're going to get some fall foliage pretty soon, aren't you?

Roger Premo:
It is starting to change, which is—I'm not quite ready for summer to be over, but I guess I have to deal with it.

David Linthicum:
So, what is the Roger Premo story? Kind of tell us how you got to IBM, what you did before that, and what you focus on during your day job at IBM.

Roger Premo:
I'll say from a very early age I actually was really interested in IBM, and I actually remember getting a—the first Macintosh as a kid, but a bit of disappointment that my dad came home with that instead of an IBM PC. Fast-forward, I did a stint in the San Francisco Bay Area in startups and that brought me to enterprise software. Took a brief digression for nearly a decade and a half at Boston Consulting Group as a strategy consultant and worked with IBM as a client, so was part of contributing to the strategy we have today, and then a little over two years ago took the shift from being a consultant to IBM to running strategy at IBM, and it's been a great journey to just see how much we've evolved in the span of just a couple years.

David Linthicum:
What's one thing you like the most about your job?

Roger Premo:
I think IBM is filled with so many brilliant technical minds, so we have internal Slack channels on various things, and when you get into one of these debates, we've got the expert—so many experts on tap, and it's just awesome to harness that kind of intelligence to help steer this business.

David Linthicum:
Yeah, it's good to surround yourself with smart people. I have the same sort of tack. Never be the smartest guy in the room. If you are, find another room. That's actually a quote from Michael Dell that he did at a commencement speech many years ago. That kind of stuck with me. That makes sense. You don't want to work with people that are learning from you more than you're learning from them. It should be this copacetic relationship, and I think that's one of the reasons I'm here and one of the reasons you're there. So, the market is maturing, 2023 is right around the corner, so what are you guys at IBM seeing in the cloud computing market moving forward?

Roger Premo:
Well, like I've said, I spent that time as a strategy consultant, so I'd say first of all we're seeing the business demand for that technology continue to accelerate. So, whether it's the pandemic, labor scarcity, businesses racing to apply artificial intelligence or just sometimes putting some of the data that's dark to work in their business. We see so many dimensions on which the business is demanding that it change, and it's leveraging technology to do that. And we're seeing that it is a complex environment to do it within, but we sincerely believe that the winners and losers in a bunch of different industry—practically every industry around the world—will be the ones that can harness technology to accelerate the innovation in their business, and that's not just the new digital business. It's the core of their base business. And that is hard but we're seeing it across the board, so the notion of IT being a department is dead, it really is fundamental to competitiveness, and every CEO in the world has to be fluent on these topics to help steer their business.

David Linthicum:
Yeah, I couldn't agree more. I mean, I think we're going to see, quite frankly, a normalization of companies, normalization of brands in the next ten years. We're going to see companies that know how to leverage technology strategically to leverage as a force multiplier. I use that word a lot. Take their business to the next level and provide better innovations, better customer experience, better digital enablement, better automated supply chains, real time access to their technology, able to leverage their data to weaponize it in a good way, go gather more market share, and other companies are going to kind of be left behind.

And the ones that aren't moving now I think are going to get left behind, and those are typically some of the bigger brand name companies out there that have a lot of legacy, been around for a long time. And I just hate to see them kind of get consumed in the market and get disrupted out of business. I'd rather see them become a disruptor themselves or rather see lots of different disruptors and may the best one win. But technology is a ton more important than it was just ten years ago. What do you think about that?

Roger Premo:
We're going to get along today. I completely agree, and I just–IBM has this—our purpose is to be the catalyst that makes the world a better place, and I love what we're saying about the word catalyst because I actually think the winners—you're right, there are some that are ahead, there are some that are behind, but I like the word catalyst because I think we all can be the catalyst that help these companies find their true potential, and I love the word catalyst if you study chemistry because it is—it's something that helps—a reaction that isn't in the nature of that thing occur. It just lowers the activation energy, so I think practically every company in the world, there's still a lot of disruption happening.

They have the opportunity to become that innovator, but if you're behind, you've got to get going fast, and I think if you talk to a lot of leaders around the world that may announced their "digital transformation" sometimes now ten years ago, I think many of them have stalled or not achieved what they wanted. They've got to take a fresh look at it and say what has gotten in the way, what were my obstacles, and how do I turbocharge that. And if they haven't had that—if they're one of the few where that digital transformation really succeeded, fantastic. But for the other 98 percent, they've got to take a

hard look at what are the business change, cultural and technical aspects that get in the way of that because if they don't figure that out, they will be left behind.

David Linthicum:
Yeah, unfortunately that's what we're seeing as well. We did a survey and kind of found out it didn't really matter how much money was being spent. The people who were leveraging technology correctly to the optimization of the business were typically folks who understood how to prioritize technology as to where it needs to exist in the stack—how you're building a business. And those who didn't fell behind, but they spent exactly the same amount of money, which was perplexing to me.

I would think that the people who are moving slowly would be spending less money or didn't have as many resources to do it. In some cases, they had more resources, but did less with those resources. And companies that were winners, ahead of the game, were able to leverage the resources, put them in the right place. They made mistakes. They made lots of mistakes, but it was out there basically punching and punching, trying to get aspects of the market, trying to build different customer experiences, build different product sets, build some sort of upscale innovation techniques, leveraging technology such as AI in different, more innovative ways, and it seems to me we need a lot more companies doing that out there. What are your thoughts?

Roger Premo:
Again, I agree. And I think it is the ones that kind of tenaciously pursue an agile test, learn, adopt, scale. I think to me, at least in my—I didn't do this survey, but my personal experience, it's the ones that put a big bet—bet-the-farm approach on something, and they didn't interrogate kind of the technical risk or the business risk up front. My sense is it's the ones that built that iterative plan learned and adapted. I see too many where it was a big bet, it didn't succeed, and we're beginning again. And to your point, you spent just as much money on the thing that was a big bet that went nowhere, and now you haven't made the progress that the others that maybe were more iterative and tenacious made in that timeline.

David Linthicum:
Yeah, and it seems like the motivation's coming from some of the upstarts, whether it's an electric car company, but other folks that are able to automate their way into a better market and their ability to kind of create something that wasn't there before. And that kind of kicks the traditional companies in the tail and get them going on moving to digital transformation, really kind of align themselves with that level of innovation, which is good. I think that's what disruptors need to do. They need to disrupt the market and therefore they take a larger piece of the market, but they also make the market better because they produce a higher standard that other companies need to live up to. But I still see, ultimately, the inability to leverage technology has been there for a long time.

If you look at cloud computing, it made things accessible that were formerly unaffordable—AI, high-end distributed systems, the ability to do complex data analytics and all these sorts of things that were out of the realm of costs just a few years ago. Now they're not. Now these smaller companies can punch way above their weight, and they're leveraging cloud computing and other technologies as a force multiplier to disrupt the marketplace when the bigger companies have the same opportunity, but things have changed.

Now these folks are able to punch way above their weight, and they are, in essence, going to operate on an equal playing field with some of the bigger folks out there, so they should be running as fast as they can because these disruptors are catching up. They're looking at the value of the technology, what it's able to do, what it's able to bring to the marketplace versus just running a business, increasing revenues by a few degrees every quarter. And, so, am I too pessimistic?

Roger Premo:
I think perhaps a little, just not to name names, but pick on that electric car example. Electric cars are still the minority of the cars we have on the road or sold every year, and then obviously there's a few different brands within that. I think there's a lot of spaces where we're so early days. I think the disruptor certainly has a great runway in front of them, but I think the incumbents, the larger companies, there's still time on the clock to get there, but it does take a bit of a wakeup call and the right technology understanding, the right architecture, the right skills on your team. It's going to take some real work in a lot of the companies I talk to, but I think the window of opportunity remains open, and I do think we can get to it on some of the—I think the evolution of some technologies has made it more feasible.

Because what I see as the root cause on a lot of those digital innovations is just dealing with the complexity, and I do think the greenfield startups, they come with one simplicity. They were built on a cloud, so they don't have to deal with geographic sprawl. Brownfield technology investments, they need to green up, modernization. There's a lot of complexity in kind of the incumbent player that they need to deal with in addition to building that digital innovation. Now, there are advantages. They have the data, they have the capabilities, they have the businesses, they have the footprint, they have customers. So, I think we're getting to a point where the technology feasibility of tackling that complexity problem is solvable. So, I think the incumbents have got a shot, but they've got to hustle.

David Linthicum:
Yeah, I think some do. I think some will become disruptors unto themselves, so you get new leadership, new management. I've been part of those executive teams before. And you get a renewed view of where to take your technology, make some major very difficult changes. I always called them unnatural acts as we're doing things and moving at a pace that we haven't seen before within our company, we're agile, we're changing at a pace that the culture typically wouldn't leverage. So, I guess the essence of this is it may be a matter of culture within these companies, big and small, disruptors and should-be disruptors, more so than technology. Everybody has access to the same technology, so this comes down to an innovative culture that the executives need to create within their organizations. What are your thoughts?

Roger Premo:
I agree with that, but then I think you also do have to interrogate the technical choices, too, because I think if it's the—what other choices you make in the business, in the culture, in the change, in the technology, it is business innovation. And getting to success is hard, and it could fall down on any of those components, so you have to look at doing all of that well. You have to look at doing that in harmony because different cultures,different pieces of that will dictate different parts of the cultural change and technology stack.

David Linthicum:
Absolutely. So, let's change gears and talk about sustainability. This is a topic that we're dealing with a lot and that reality is everybody has their own opinions on what it is and how to do it, but sustainability, when it comes to technology and your ability to get to a more sustainable state by using one technology stack over another, seems to be a core discussion that I'm hearing a lot. I'm certainly talking to the press a lot about it lately, so what's your take on sustainability in terms of how the industry should be thinking about how to leverage technology in a more sustainable way?

Roger Premo:
Well, I think maybe it's the awakening of the pandemic or things, but I think one piece of good news is that the understanding of the challenge we're facing is just so much bigger than it was a few years ago, the urgency. The fact that the private sector, IBM included, but so many companies have their net zero pledges and are on their net zero trajectories, I think it's fantastic. The—now, at the same time, the urgency of the problem, the magnitude of what we do, there are many unsolved challenges on that pathway to actually get to a sustainable future, but I think there is—the fact that we're having this conversation and we probably weren't having this conversation a couple years ago, I think, is a positive step.

What we're seeing then from—with our clients is a few things—and not all related technology. First, broadly, they've made these carbon declarations, but actually getting their hands around what is my carbon footprint – especially if you start getting at things like Scope 3 carbon, which is what your suppliers generate – it's a hard technology problem and data problem to actually just baseline what are your emissions so you can start building the operational plans to get after that. But we do see now most major companies around the world are on that journey to start building out that data understanding so they can get after it. And then specifically in the technology domain, we're seeing more and more clients who used to look at your price performance was the evaluation criteria for so many things in technology, and now we're seeing price performance and carbon impact in the calculus.

And I think for the technology industry to lead on kind of putting the sticker price–we always had the sticker price of the cost of it in dollars, or whatever currency, and now putting—moving toward putting the sticker price of carbon on that so that we make those decisions eyes open with the carbon impact they have, I think—and we're going to see optimization to really make those choices in a more thoughtful way. I think as technology leaders, we should lead ourselves in exposing the carbon impact and working to take that down within our industry.

David Linthicum:
Even looking at the source where things run and also optimization of the technology, if you think about it moving to cloud as a sustainable alternative is smart no matter what the cloud is powering the cloud providers, even though many of them use renewables. But the fact is we're sharing infrastructure and sharing technology so we're not having an idle piece of hardware that's running in a data center that's at 3 percent, 5 percent utilization. You folks who work in data centers, you know what I'm talking about. And really get to a sharable infrastructure. Ever think about the way that we're going to get better at this stuff is going to be sharable driving cars, we have ride sharing now, sharable houses, and even sharable infrastructure?

So, the move into the cloud, number one, seems to be a good first step in moving to a sustainable future, but also it's trying to figure out how these things are powered and also looking at other opportunities that may not be as obvious, your ability to optimize software so it's more green. They're putting in many instances in DevOps tool chains checks and tasks to make sure that the software is not only optimized for security and performance and everything that we test, but also you're using the minimum amount of processing power and the minimum amount of storage, and so therefore it's a much cleaner running piece of software, which if we multiply times 100 instances on a cloud provider really makes a difference.

So, we're looking at all these ways to tune our way to better sustainability with technology. So, what do you think? Do you think this is something that enterprises are going to adopt? We have ESG as a goal, all these other things that are out there, just a good idea to move in this direction, or is this going to be kind of a slow roll?

Roger Premo:
Well, I think it's a hard challenge. I'd say one is I do think now we've gotten to the point—the recognition by so many companies is not just driven out of pure altruism. There's investors that make choices based on your ESG footprint, we have employees that care about that, potential employees, customers. So, the stakeholders a business cares about, their stakeholders are making economic choices, so it is in the business interest of those companies, first and foremost.

And then second of all, I do think back to the digital transformation topic we were on, a lot of what gets you there, like you were saying, those cloud native applications, et cetera, there's a high overlap with what you need to accomplish in your digital transformation, and the data you unlock in that digital transformation gives you even more clarity on how to tackle that carbon footprint.

So, I think it's not a side topic that businesses have to spend money on. It's essential to how their stakeholders interact with them, and a lot of what they want to accomplish in that core digital transformation has overlapping needs, and we're actually seeing some clients where that green thinking or ESG thinking has been the trigger point for some of the traditional digital transformation activities because the way that you took out carbon was you digitized your understanding of the supply chain, you optimized it so there are less truck rolls, less orders, you were picking suppliers based on what they're telling you about carbon. It's just highly overlapped with that whole digital topic we were talking about before too.

David Linthicum:
Yeah, I think that's outstanding. Your ability to leverage your own data, to tune your own environment so you can provide the most sustainable infrastructure because you're doing more with less carbon. And that's kind of core—I guess we can move lots of stuff in the cloud and feel good about that, but your ability to run a factory floor in a more sustainable way using less power and also your ability to optimize a supply chain so you're leveraging less fossil fuel, all those things kind of come into the mix as well, and I think often—you brought it up, I thought it was very profound—often organizations don't understand that that's an angle they should be looking at. So, the reason we're doing digital transformation is to get to a more optimized state as far as optimizing the business, but part of optimizing the business is get to a more sustainable state and we can achieve two goals with the same digital transformation. What do you think?

Roger Premo:

Yeah, I mean, you're going to get down that path. Listen, we've got a lot of things if it's carbon collection—we've got a lot of unsolved problems in getting to a kind of truly a net zero world, but I do think the steps that we're seeing from a lot of—the private sector is going to be so critical for it. It's going to be the large companies that have made these pledges, and then there'll be smaller companies that are suppliers to those large companies, so I think that effect will cascade down. But there's—I agree, but there's a heck of a lot more work done too. I do think kind of—it is the challenge of our generation to actually tackle this problem and not pass it on to the next one.

David Linthicum:
Yeah, and what I think, also, if we're going to a more sustainable infrastructure, processes, technology, we're also getting to a more optimized business. We're doing so through the same processes. If you think about it, we're saving money and we're optimizing processes, we're becoming more efficient. I think a lot of businesses are going to become better businesses just because they're moving to sustainability without understanding what's—how the improvements are being made. So, in other words, optimization of supply chains, things like that to get to either an ESG goal or truly altruistic goal of providing more sustainability. End results are the same, businesses and sustainability are actually looking for the same goals. What do you think?

Roger Premo:
Yes, and even more than that, I think it will make—will not just deliver a better digital—back to the stakeholders, if investors, employees/potential employees, and customers care about it, being green and being able to articulate it with conviction because you've got the data about your carbon footprint and your trajectory that you've been on, that—customers, employees will make choices on who they work for or who they buy from or who they invest in because of that. So, we're going to—I think we've had this vicious cycle of fossil fuels and we didn't understand the data. I hope we're on the path toward a virtuous circle with those that make more progress on carbon will see the business results both from the core of that digital transformation you cited, but advertising that to get a better outcome from their customers, et cetera. So, I'm optimistic. There's a lot of work to be done, but I'm optimistic that we can flip to that kind of virtuous cycle.

David Linthicum:
Let's talk about core tech where everything's switching in utilization to the cloud computing world. Obviously, the majority of technology that people are building and deploying applications on cloud and non-cloud would be containers in Kubernetes, the ability to leverage them in a federated way or localized to a single cloud provider. And that seems to be hugely, hugely additive going forward. That seems to be where the momentum is. That's where we're building the net new systems right now and even porting the systems over to it, leveraging cloud native container-based environments they're able to operate not only within clouds but across clouds in a federated way. So, what are your thoughts on that? What are you thinking about at IBM in terms of the migration of the technology? I know you put your money where your mouth is in purchasing companies that do this, but what's the inside information in terms of where this stuff is going at IBM?

Roger Premo:
Well, listen. Obviously, to put our money where our mouth is, obviously we acquired Red Hat a few years ago, and there's kind of no bigger bet on open source than acquiring Red Hat, but I think underneath at first, if you just talk about open source, it has gone through a paradigm shift. Open source, I think, to a lot of folks was perceived as a commodity version of commercial software, and I think in its early days that kind of was that. Now it's fundamentally where at-scale innovation happens. So, if you look at the Kubernetes space or all the things that surround it, if you look at open source in AI, so many different areas, it's where innovation convenes, and it's putting hundreds of thousands of developers to work to drive that innovation rather than the tens or hundreds or single-digit thousands that any one commercial vendor would deploy against it.

So, I think that profound shift to really say a business that's betting on open source is betting on a tidal wave of innovation that is going to keep them moving forward rather than finding out in the old commercial world that we bet on something that, oops, our vendor decided not to push that forward. So, I think it's a really incredible paradigm shift. Underneath it, you kind of went to it immediately, which is how do you get to the cloud—that cloud capability within open source. And Google gave us this gift in 2014 which was Kubernetes, and I think the world really has rallied around containers and Kubernetes and all the surrounding projects to get to this really audacious outcome which is we can have a software platform that can run across those clouds and extend those cloud type capabilities out to edge locations, manufacturing shop floors, connected vehicles, et cetera. It extends that capability beyond the walls of a particular individual hyperscale cloud provider, and it's happening.

And that's what we see as part of that unlock as—back to that heterogeneity complexity problem that we talked about before, getting to that standard on top of containers and Kubernetes we think of as one of the core unlocks because it means that you can bring those cloud native, Agile, DevOps, whatever nomenclature you want toa have, bring those capabilities that we know from all the greenfield startups that those practices drive innovation much faster. We can bring those to practically any environment in which a business finds itself, so we—part of the reason I talked about that optimism now of why we can tackle that digital innovation challenge because we don't have to be greenfield on name your cloud as a prerequisite to get that digital innovation outcome. I think it's a really interesting time for those technologies and we're just seeing if it's how we use Kubernetes to deploy an AI algorithm encapsulated container.

If it is distributed at scale, applications that are running across multiple clouds, if it's the things that are happening in terms—on top of these software-defined telco networks. Kubernetes is one of these kind of core technical elements that has become ubiquitous, and if you remember just a few years ago there was Cloud Foundry. There were a series of competing technology architectures to go after that, and the world moves faster if you—any TCP/IP you pick it, when the world picks a technology and standardizes, innovation accelerates. And I think we've seen that on a core software infrastructure layer with Kubernetes.

David Linthicum:
And if you think about it, we're building the whole supercloud/metacloud thing, and we're going to need technology to build applications across there, and a majority of it's going to be Kubernetes and containers. I think that's the way the thing's going to migrate. And leveraging core infrastructure just on a cloud provider but still have a logical layer that exists above the cloud as some sort of an open layer that we can swap and we are protected in building applications there we're not necessarily at the whims of the vendors. So, give us a couple of future predictions for next year.

Roger Premo:

I'd say a few things. I think you are going to see that kind of Kubernetes layer. We're just going to see more and more uses of cloud type technologies in more surprising edge locations than we ever imagined, and we're going to see that next year, and we're going to continue to see that year after year. We are—we spend a lot of time also on quantum computing, on future predictions. I think you're going to start seeing more quantum projects inside of large companies where they're building quantum-ready algorithms in anticipation of quantum advantage showing up in just the next several years, so I think you're going to see that in quantum computing really unlock a lot of use cases.

And on the sustainability front, I think you're going to see a lot of businesses actually being able to kind of deliver their carbon accounting with real conviction and extend that from the traditional Scope 1 and Scope 2 to really say it with conviction about Scope 3. I think that you're going to see more and more of that, and if we understand—we start to truly understand the nature of that problem, that obviously is a prerequisite to get it. So, I'm optimistic on a number of dimensions there.

David Linthicum:
So, where can the listeners find more about you on the web?

Roger Premo:
I'm on LinkedIn. You can check me out, Roger Premo, and I – obviously, we're a part of how we evolve our strategy, we're always open to feedback, so any notes, feedback, thoughts are welcome.

David Linthicum:
Yeah, check out Roger. I've been working with IBM a lot lately. It's a fun company to hang out with, and they have some very, very, very smart people there with some great technology. 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@deliotte.com. So, until next time, best of luck with your cloud journey. You guys stay safe. Cheers.

Operator:
This podcast is produced by Deloitte. The views and opinions expressed by podcast speakers and guests are solely their own and do not reflect the opinions of Deloitte. This podcast provides general information only and is not intended to constitute advice or services of any kind. For additional information about Deloitte, go to Deloitte.com/about.

This publication contains general information only and Deloitte is not, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor.

Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.

Visit the On Cloud library
www.deloitte.com/us/cloud-podcast