Deloitte.

Architecting the Cloud, part of the On Cloud Podcast

Mike Kavis, Managing Director, Deloitte Consulting LLP

What is the role of Edge and Cloud Computing as Enterprise technology consumption increases?
Duration: 0:29:16

Operator:
Welcome to Architecting the Cloud, part of the On Cloud Podcast, where we get real about Cloud Technology what works, what doesn't and why. Now here is your host Mike Kavis.

Mike Kavis:
Welcome to Deloitte's Architecting the Cloud Podcast, I'm your host Mike Kavis and I'm here with Mark Thiele Senior Director of Engineering for Edge Computing formerly from Apcera now part for Ericsson. So, Mark welcome to the show, tell us a little bit about your background and what you're working on these days.

Mark Thiele:
Hey Mike thanks for having me on the show. Yes, my background is roughly 30-years delivering IT - the vast majority of that 30 years delivering IT for enterprise companies like HP and Gilead, and VMware and other companies like that. I've spent maybe the last seven or eight years on what would be considered the vendor side of the equation helping to build Cloud Environments, Cloud Software Platforms and helping in the Data Center Space like my time at Switch. I'm an odd duck in the sense that I have a significant amount of exposure in both traditional data center and infrastructure space but also in the cloud and cloud platform space, and at Ericsson now a big part of my work is around helping to define and deliver effectively just what Ericsson calls distributing cloud or Edge Compute Platforms for the telco market and potentially others going forward.

Mike Kavis:
That's relevant for the first question the finding is you know about a week ago I sent you a list of three questions that we're going to talk about, and in the meantime we got into a couple of Twitter debates on a few other topics so we pivoted, and the first one is someone wrote an article "Cloud is Dead" basically saying the future is the Edge and all that and I kind of went off on that.

Mark Thiele:
Yes same.

Mike Kavis:
That's like saying "Mainframe is Dead" nothing is dead but what's funny about that is people like to think that Cloud and Edge are binary you use one or the other and the reality is you are going to use both so I'm going to throw that one over to you and when you see articles like "Cloud is Dead" what's your response to that?

Mark Thiele:
Yes, I mean in some cases it's interesting to get a title like that only because it can spark debate. What I disagree with though is actually you're making the assumption that you can make that kind of statement and then create a blog that doesn't attempt to support it, or come out and say I was being flippant. Because I've written similar titles in the past, but I come out right away and explain my position, and why I was flippant to or I come out and explain why what I said regardless of how hyperbolic it might have sounded it's likely to be true, and I really felt that this article that we are referring to and maybe I shouldn't refer to the article company name, but I really felt like one it was way too fluffy it didn't get into any kind of detail of how the person got to that point, they referenced Edge Computing as being the thing that would solve all of the problems that everybody had been using Public Cloud for but they went into no real definition of why that was true, they went into no real explanation that would lead the reader to believe they even understood what Edge Computing was. In fact they referenced Edge Computing was as if it was a magazine for stay-at-home parents to read on an airplane or something like that, I mean it was really, really just too fluffy for my taste and that's what got my - the hairs on the back of my neck up and made want to respond, and to your point then we can expand on that more if you like, but to your point there is no one solution for everything and, while I would agree with the prognostications and I can't remember his name there was a venture capitalist guy that came out and said that Edge Computing will dwarf if not kill Public Cloud, and then Michael Dell came out and said that Edge Computing is likely to be a hundred times what Core Cloud is, and whether or not either of those two gentlemen are correct in the scale of Edge Computing, I think everyone agrees that Edge Computing is going to be big, but I think it's a fallacy to make any kind of assertion that Public Cloud for its, scale its economies of scale, its ability to do massive crunching without having to worry about latency and its ability to provide better protections are all things that are likely to be important for a significant number of workloads for the foreseeable future.

So, what I see is more likely that we will have a balance of workloads just like we do today some staying on Mainframe, some staying on computers in the labs, some going into Cloud, some being in between Edge will be very similar and there will be a lot of new applications not existing, not old that will be converted to Edge, there will be new applications that will be created for Edge and then there will be other existing or new applications created to leverage what happens at the Edge for other purposes, and so I think what might be considered as Core Cloud that the large Public Cloud Campuses and Data Centers are likely to continue to exist, and likely to realistically see something similar in a year-over-year growth that they've been seeing if an aggregate of somewhere between 20% and 30%.

Mike Kavis:
Yes, I agree and what these authors don't understand obviously never use the technology is that there is a limited amount of resource on the Edge right?

Mark Thiele:
Yes.

Mike Kavis:

You're not running a long running job on Hadoop on the Edge right? What's going on on the Edge is you have a sensor out there somewhere it's detecting something whether that's a temperature, a vibration, sound and then making a quick decision to take some action?

Mark Thiele:
Right.

Mike Kavis:
Particularly what happens is then you ingest all that data back to the Cloud and run all kinds of analytics to understand why those actions cause certain behaviors or should cause certain behaviors?

Mark Thiele:
Right exactly I mean, you think about it it's no different I mean I'm sure you've talked to someone in the past, an analyst or somebody who is interested and they've asked you is solid-state ever going to be mainstream alright SSD's ever going to be mainstream and then years later they ask you are spinning disks dead or they're going all disappear, and in a micro view it's a similar story as prices come down for SSD's people find more and more use cases for them. But that also means that prices continue to go down for spinning disk and so they find other users that replace other things that would have been used in the past, and that cycle continues and Edge Computing will have a long way to go to come anywhere near being able to provide significant compute capacity at or near the cost variables that can be applied at a Core Cloud and that will continue for some time, and so until those things get closer, things at the Edge will cost a little bit more to run in general on a per second basis and as such you'll be defining things to run at the Edge that are specifically gaining you real value because they're at the Edge not just because there happens to be some compute local to where you are.

Mike Kavis:
Yes and the other point I'll make on this – this is like when you talk about "on prem versus cloud" it's really two different types of Data Centers so a lot of workloads most workloads could argue could run in either or when you talk about the Edge there are so many constraints right? Always talk about less compute power there is less connectivity, there is less resiliency reliability in that connectivity and each one of those constraints reduces the amount of use cases that actually work in that environment..

Mark Thiele:
Right exactly.

Mike Kavis:
When someone writes Cloud is Dead, Edge, I'm like okay let me see you run a G-Note Analysis on the Edge okay? I mean this doesn't even sound like (Audio Disruption) which leads us to the next one which I kind of tweeted out and a bunch of people responded to including yourself, and I see this I go into a lot of client sites and couple of years ago when we're going into client sites says what is Cloud? Why is Cloud? Everyone kind of figured that out and now they're in the Cloud and now they're realizing hey we need a new ops Model I mean we can build stuff but we are having problems running it, so we do a lot of work with clients to help them redesign the org and redo the Ops Model but the challenge I see too often is I am with the infrastructure team creating an Ops Model to push on an App Team. And I should be seeing a team, a full stack team of dev and ops and security and GRT and everyone collaborating on an ultimate Ops Model and what the reality is what I'm seeing is they're creating basically a new silo with a new name and producing the same results. I kind of threw that out there and you like, I have been talking about this for a couple of years so I'm going to toss that one over to you and we'll discuss that one?

Mark Thiele:
Yes, I'm sure both of us could come up with a handful of other names readily available who have brought out the same topic and harped on it but this is something that the first time I probably wrote about this was maybe six years ago, and in one of the Tweets where I was responding to your original Tweet I mentioned the idea of Cloud in a real sense of trying to leverage Cloud in a real way for an Enterprise without defining the appropriate organizational model is like taking a Ferrari engine and attempting to put it into a an older Pinto or something like that. Can you make the car run if you're a good enough mechanic and electrician maybe you can, but is it going to have the brakes it needs? Is going to have the handling it needs? Will it actually go as fast as the engine might allow for in the right design? Will you have the same safety features? Will you have the same reliability? Chances are the answers no all those things and the same thing applies, you take something like Cloud which the - if you only picked one definition for the benefit of Cloud for the average organization, it's streamlining the approach to utilizing compute resource for your application demands, right? I mean that's - at the simplest level all the other things around elasticity and geodiversity and scale and reliability, all those things are important and they follow down, but the first one most people think of is speed of use. Well, if you're still using traditional Change Management Process, and asking the operations team to go through processes of approving Firewall rules and, and changing storage requirements and allocating resources, then you're basically taking 85% of the benefits associated with Cloud out of the store. And I see the same thing you're just talking about I see all the time in the sense that I even hear people say that their organization thinks they have DevOps because somebody says we're DevOps now, and so somebody wrote some procedures and somebody has got a title

of DevOps Engineer or something like that, but it's again, just to your point, unless the organization is acting like one - like a manufacturing line to deliver content where every point in the manufacturing line is tuned to be ready to accept what came before, and then deliver it, and ideally deliver it largely all in parallel rather than sequentially like a typical old style workflow would be. Then again you're missing the vast majority of the opportunity associated with Cloud. You're probably spending more than you need to spend and/or you're using Cloud in ways where you don't actually benefit from it, so why bother making the changes associated with trying to leverage Cloud if you're not.

Mike Kavis:
So, you've touched a point one of my favorite topics DevOps Engineer right? And I have an old presentation called "No you're not a DevOps Engineer" and it talks about a lot of companies they create this new silo called DevOps, they call everyone DevOps Engineers, they write a few scripts mission accomplished they are DevOps shop, and there is also this – I wrote the other day well now everybody is just calling themselves SRE's, and SRE's is kind of Google's approach to how you support Apps where they basically have a development job who half the team has infrastructure network type background, but half the time they are also coding and their focus is on resiliency of the App, so half the time you're monitoring the App they see things that like "hey we see you need a add a cache layer here" and they work with the development team to put that in there, or hey we see a bug here, we'll fix that or hey we see you need more Apache threads, and they'll fix that and they're all aligned with their service product lines, and these companies are saying, hey we're going to be SRE's they don't have the skillset that a true SRE has and they're not aligning with the product or service slide, they are just rebranding another group from DevOps SRE they still have silos and they still have the problems.

Mark Thiele:
Right.

Mike Kavis:
And then the other point there is even if they knew what SRE was it's a long journey to get there, right?

Mark Thiele:
Yes.

Mike Kavis:
You don't start with that you start with, hey let's get automated bills hey let's get automated testing you work your way towards that, so the question to you is there is so many buzzwords out here, there is so much change it seems like what everyone's forgetting is the human and process side, everyone is focusing on the technology side of it, and we've seen this when we went from Mainframe to Client Server we went to (inaudible) we went ERP system, why can't IT ever understand that transformation requires people and process change?

Mark Thiele:
Dude you're singing my song man - I've said this - what I'm about to say to you I've probably said 10 times in the last year alone, and that's that it's frustrating when as often as I'm asked to speak at events whether it's someplace in Singapore or in New York or in Monaco or wherever it is that I'm speaking I will almost always reference the importance of taking the human equation into account before considering technology and anything else and it is almost always during those parts of my presentation where I feel like I'm getting less interest and attention from the audience and what's most awkward as I can tell from your voice and the level of passion coming through in your voice what's most frustrating is that the agreement that you and I have in the sense that the people part is the single most important aspect of doing this and I could care less if you had one written process or procedure associated with your DevOps team I could care less if you used a Puppet or Ansible or you used a Cloud Development Platform or a PaaS I could really care less because unless you have the people, the organization, the support for whatever transformation you're going through the appropriate types of reward systems and job roles and etcetera then none of that other crap will do you any good, it's just that simple right? And so I'm with you in the sense that that's a PhD worth of blogging and speaking in screaming from the top of your soapbox on a daily basis subject right there.

Mike Kavis:
Yes and the part you talked about where you start talking about the soft stuff and people get turned off it reminded me of I was at a DevOps stage in Austin and they had the All Star Cast right? They had all the guys from the beginning everyone - everyone you could imagine which why I went and every talk was about leadership and transformation and change and the people ate it up, and then when the keynotes got done, they have this session where everyone goes and writes on a whiteboard what topics they want to do roundtables on, and every one of them was not leadership not change - and then all those people who sat there and applauded all those talks just went into the "ones" and "zeros" for the next three days...

Mark Thiele:
Right.

Mike Kavis:
… it was comical

Mark Thiele:
Yes and it's interesting and this potentially is a little bit of a digression but I was having a conversation with some people just the other day and the topic was about "Leadership and The Importance of Communication" especially during times of high stress for an organization. And high stress could be anything from being acquired to being divested to a slow business or a lot of business, or low staffing or whatever the case maybe but truth in those circumstances is that for the average technologist and I'm not trying to put everybody into this bucket but for the average technologist including the leadership they would much more rather go back to something that they can measure more effectively, at least personally, like responding to emails and approving that next presentation file or creating the next presentation file that you need or whatever it is, but hiding in the office, hiding at the monitor and doing that rather than things that don't again don't have obvious KPI's because most organizations have not defined KPI's for human contact and communication. But that's actually where you'll get the most benefit, so when you least are inclined to want to talk to your people is likely when you're most needed and these situations of transformation moving to DevOps, taking away what people have historically believed is their reason for living and helping them find another reason for living and helping the organization reward those changes appropriately, and reward the appropriate behaviors for continuing to find success in the transformation. Those are the hard things to do and again you and I can argue all day about it in agreement but they are the most important ones.

Mike Kavis:
Yes I agree and one of the other buzzwords in the transformation of Cloud is the CBO "The Cloud Business Office" and every time I go into a client and we talk about it "where is HR in this" right, so we're talking about new skills, we're talking about new incentives to change behavior and typically it's just technology right?

Mark Thiele:
Yes.

Mike Kavis:
The last question and this one inspired by some of your conversations so a lot of people talk about a future state where pretty much everything is all in the Public Cloud, and I don't know six months or 12 months ago there is a conversation about this where you participated in and you talked about is that even technically feasible and you started talking about power consumption and stuff like that I won't say anymore because I can't say it as well as you did so let's talk about that one.

Mark Thiele:
Yes, I mean basically what I did was some back of the napkin calculations in combination with my own work experience having delivered Infrastructure and Data Centers and things for many years as part of my career from both sides of the aisle – the buy-side and the sell-side in combination which is numbers, and I have relatively good relationships with many of the people that run some of the biggest Data Center and Cloud Organizations in the world, and so from those conversations from my own math and my own personal work experience I came up with some hypothesis around what is likely to be able to happen under what circumstances relative to everything being in the Cloud. And my reason for writing the blog which I'll get it a little bit more detail on in a second was effectively started by just like you're responding in the first question, I was responding to an article where somebody had said that 50% of all workloads - Enterprise Workloads would be in the Public Cloud by 2020 right, and so and that I think that first hit the public somewhere in '14 or '15 I can't remember but people were still referring to it in '16, '17 so I just decided in late 2017 to write this blog talking about the math, and so what's really interesting is that I came up both in talking to major Cloud providers and their leadership and in my own work experience I'd come up with a rough estimate of somewhere between 8% and maybe a maximum of 11% or 12% of current Enterprise Workloads were in Public Cloud. And this - again this is late Q3, early Q4 of 2017. Interestingly enough your Tweet said something 0% to 10% I think you said are Enterprise Workloads in the Public Cloud today. So I did the math backwards from that right as supposed to the assumption that there is actually some giant percentage already in the Public Cloud, I use the math back from that and I said okay you have to factor in assumption of growth in IT over the subsequent five years and even if you have moderate growth you're looking at almost doubling the capacity of IT not including drivers for new Apps and new capabilities although you could pick anyone of the trends that are out there today. Not including drivers from all of those that might create net new workloads and net new opportunities for IT folks to build things so to create engineering or even talking about organization going through transformation and going from a traditional bank to a PayPal and what that means to technology consumption right? So I just took from a basic growth with a little bit of assumption for add-ons and I thought we're roughly going to double IT demand from a technology standpoint not necessarily from an Enterprise IT of delivering PC's and running ERP code. From an IT Technology Deployment standpoint we're likely going to double demand between now and 2022 now being third quarter of last year. So put that in perspective, let's assume that the Data Centers the Cloud Providers at the time were running 10% of Total Enterprise IT in their Data Centers, and let's assume that in aggregate they grow at 25% a year. Well that

means that in two and a half or three years they would roughly double, right? And that's pretty fricking significant when you consider that there are somewhere between 15 million and 20 million servers already in the Public Cloud Environment globally that's pretty significant to think that they're going to double that in two and a half or three years, but most of the Cloud Providers believe they will. So, let's assume they double that well that's getting to 20% in roughly three years that's getting to 20% assuming there is no growth in technology adoption. So, if you factor in growth now it's not 20% it's more or like 13% or 14%, and if you go out to 2022 with the acceleration of other growth, the acceleration of Digital Transformation, my basic math came out with saying that even if colocation companies and large Cloud providers more than I think its triple I can't remember I have to go back and look at the numbers between now and - or between late 2017 and 2022 they would still end up only being 17% to 20% of total Enterprise technology demand. And so it's a combination of just fundamental laws of how much can you build in combination with how much can people buy and how much can people change over a period of time. It also takes in some minor assumptions about the fact that some workloads that go to the Public Cloud actually end up coming back, and even if that was a poor decision by the company that made it, every company is likely to make some of those decisions, some of them might be poor some of them won't be, but at the bottom line I figured somewhere in five years from now we're looking at probably somewhere around 20% to 25% of workloads being in the Public Cloud, some or a similar percentage being in colocation facilities still likely mostly privately owned but some potentially hosted by other companies like a Rackspace or others and then 40 plus percent, maybe as much as 50% still remaining in Enterprise Data Centers in 2022. And frankly I'd be happy to be proved wrong to some percentage because the vast majority of Enterprise Data Centers are not run that well, and they're very inefficient and I'm a sustainability efficiency guy at heart, and so I hate to see that kind of waste out there, but nonetheless those are the numbers and the assumptions I used to get there.

Mike Kavis:
Yes and I feel good about those numbers and I want people to realize that that's still a significant amount of stuff in the Cloud right?

Mark Thiele:
It's enormous.

Mike Kavis:
Yes.

Mark Thiele:
It's enormous.

Mike Kavis:
People might say 17% there's nothing that is so much stuff running the Cloud. One of my clients who is like a showcase for their Public Cloud Provider they are in, they are like speaking at all these events, they've only got a small percentage of their stuff in the Cloud, but what they have in the Cloud is creating so much business value that they're put up on a pedestal to talk about it, and at the end of the day that's all that really matters right? It's business value – it's not how much do I have here versus there?

Mark Thiele:
That's right, that's right, yes in the end and that's really what it boils down to, I mean one of the other blogs that you referenced the one where I got a lot of feedback from folks like Ryan Fae and Val and Richard Donaldson and Rick Greshler and a bunch of other people that missing people like Bernard Golden and I got some great feedback from people, but one of the key themes that came out of that feedback is referenced back to a term not that they all use the same term I do, but it comes out the same way and that's right placement right. The opportunity to leverage Cloud for the right reasons as you just described is what's most important and what's least important is using Cloud just because you can and as customers I'm sure you're seeing it right as customers get smarter and smarter about making choices based on a combination of value-add and true performance benefits, and cost analysis, etcetera, they're making better decisions about what they should rush, what they should take their time with and what they should just ignore until it either dies a slow death or it gets replaced by something else. And I think that's a healthy position in the market but certainly there are a lot of companies and a lot of execs that haven't quite gotten there yet.

Mike Kavis:
Yes great conversation Mark - I appreciate you taking the time to talk to me again today and where can we find you on Twitter, and where can we find some of these blogs that we talked about here today.

Mark Thiele:
Well, I appreciate the time too Mike I always enjoy chatting with you I look forward to the next chance we get to meet in person again. But yes my Twitter handle is M-T-H-I-E-L-E-10 and my best location for blogs right now because my old company was acquired by Ericsson so the blogs are not there anymore, it will just be my personal blog that I tend to write mostly for on LinkedIn so if you go to my profile on LinkedIn, you should be able to find my blogs there, and I got a few recently about Edge Computing and the best Cloud Use and even DataGravity and a

couple of other things.

Operator:
Thank you for listening to Architecting the Cloud, part of the On Cloud Podcast with Mike Kavis. Connect with Mike on Twitter, LinkedIn and visit the Deloitte On Cloud blog at www.deloitte.com/us/deloitte-on-cloud-blog. Be sure to rate and review the show on your favorite podcast app.

Visit the On Cloud library

www.deloitte.com/us/cloud-podcast

About Deloitte
As used in this podcast, "Deloitte" means Deloitte Consulting LLP, a subsidiary of Deloitte LLP. Please see www.deloitte.com/us/about for a detailed description of our legal structure. Certain services may not be available to attest clients under the rules and regulations of public accounting.
Please see www.deloitte.com/about to learn more about our global network of member firms.