

DR: [00:00] I'm Danielle Royston, and this is Telco in 20. Hey, guys. Oh my God, we have AWS on the podcast. I guess it's no secret that I totally love AWS. As you guys know, Totogi is built 100% on AWS and I'm super into them. That's because they have data centers everywhere, which is perfect for telco. They also have that awesome project going on with DISH Wireless in the United States where they're building a new greenfield 5G network on AWS. And they recently announced they were going to make a hundred million dollar investment for more generative AI tech so they can do even more cool things like they've done with their custom AI chips and their latest service, Bedrock.

[00:52] On top of that, since they have the biggest market share of all the public cloud providers, almost every telco I talk to is already working with them. Today I'm talking with Chivas Nambiar, director of worldwide solutions architecture at AWS for telecom. I met Chivas outside my awesome talk at MWC 22. You remember the one I opened with a Taiko drummer? Boom, boom, boom, boom, boom, boom. We're going to have a great conversation about telcos in the public cloud, discuss where the line is on network workloads of moving to the public cloud, and how Chivas thinks the public cloud is perfect for telco's generative AI workloads. So, let's take 20. Chivas Nambiar is the director of worldwide solutions architecture at AWS for telecom. What's up, Chivas? Welcome to Telco in 20.

Chivas: [01:41] Hey, DR. It's awesome to be here. I'm glad we're doing this.

DR: [01:45] That's got to be the most excited intro to my podcast ever, so I'm super excited to have you here. And just to reminisce a little bit, we met at MWC 22 right after my famous drum talk. I got this drummer and she was playing and I really wanted people to feel the public cloud. And so, the working title of that talk for us internally was, Telco Execs, Get Your Ass to the Cloud, but I think the official title was, The Public Cloud is Now. So, you came up to me after that talk and that's how we first met. Do you remember that day?

Episode 70 | Telco in 20  
Unleashing telco potential with AWS  
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Chivas: [02:17] Oh, I do. I remember actually being intrigued by the description of that session. And then I popped in and I enjoyed it so much. I remember, I actually pinged you on Twitter while I was sitting in the audience.

DR: [02:28] Yes, a DM.

Chivas: [02:29] I saw the passion for the change in the building. It's all similar things that we do between both of our teams, so I had to just figure out how we could work together on it. And I think it was telling, in the middle of all of our meetings, we somehow found 20 minutes to huddle at a random coffee table in the middle of the exhibition hall and we've been building together since, so it's awesome.

DR: [02:50] Yeah, it was a quick start and it's been so great working with AWS as the CEO of Totogi, and obviously the cloud evangelism that I do. But today we're going to talk about telcos getting their asses to the cloud. So, at AWS you guys see different things than I do as a consultant and also as a vendor in the space. And so, what are telcos looking for as they come to you guys and they want to start their journey and moving into the public cloud?

Chivas: [03:14] If you look at workloads in telco, there are a few classes of workloads, IT, data analytic workloads, those who've been working with telcos for about 10 plus years and they've been taking advantage of the cloud as most other enterprises have been. You build great web and mobile experiences, take advantage of all of the data that telcos have to transform things like customer experience and self-service, call centers, proactive and predictive dispatches, that kind of thing. Then there's what I call the network IT workloads that are more deeper OSS type workloads, they sit core to the network elements. We're seeing telcos figure out how to use the cloud to do some very interesting things there, like large data analysts around logs, metrics, security and performance. Do you remember the old F caps world? All of that, telcos are trying to figure out, especially with their partners, how do you take advantage of the cloud native capabilities, cost-effective storage and retention and the deep analytics tooling there. So I think we're pretty excited about where that's going and we think there's more to do.

[04:09] Then there's also the core network workloads, whether it's wireline, wireless or cable. And here we're seeing the early adopters just kind of working with us to co-innovate and build almost fit-for-purpose solutions. So when Dish Networks wanted to build a nationwide network core to support their 5G network, or Swisscom wanted to build a disaster recovery environment for their network core, they just worked with AWS to figure out how to implement it. And every day I see more of our customers trying to identify the right use case, the right fit, and then work with us to build it.

DR: [04:40] And I think people are really trying to figure out where that line is. I think like you said, there's some easy no-brainer workloads and they've been doing that for a long time. And you look at what Dish is doing, they're really pushing that envelope and I think a lot of people are watching that deployment and seeing how it works. There's still work to do, but it's incredibly exciting and super cool.

Chivas: [05:00] Yeah, there is a fair bit of work to do, but like you said, it's that balance, and every day, those are the conversations I'm having now. Which is, there's a need for some speed in the transformation they're doing in their core networks because they have to build better experiences for their enterprise and consumer audiences, but they also have substantial investments in their existing networks, and based on the conversations that I'm having, I'm optimistic that we'll continue to go innovate and that's a fun place to be.

DR: [05:24] Yeah, we have people on the podcast and it really is a debate of the industry when it comes to the public cloud, how much of the network and where is that line and how far you can push it. And the debate continues, and I think over the next three to five years we'll figure it out. And so, when you talk to telcos, what is holding them back from taking the plunge with the public cloud? What's a big barrier that you guys have to break through to convince them to start moving.

Chivas: [05:46] Well, I spent 17 years in the industry and telcos are nationally critical infrastructure and rightfully, they're pretty conservative about things that look like transformative

changes. But then, when they spend the time with us and deep dive with us and they understand the advantages of running in the cloud, whether it's more deterministic ways to look at and protect their workload, the consistent pattern of price reductions that they've seen with AWS as an example, the increase in performance of the infrastructure due to the investments we've been doing in silicon and passing on some of the savings we have because of the scale at which we operate.

[06:20] And then quite frankly, telco's a very partner-centric type of organization. If you look at the partners and the vendors they use, they're all software companies that can build and deliver value much faster in the cloud. So, telcos are kind of dive deep there, they start to get excited about taking advantage of the cloud. And so that's one big thing.

[06:38] The second thing is, the capacity for executive attention and the capacity to change. Now, this is a big transformational change and it requires leadership commitment, upskilling of the talent in these organizations. And again, what we are starting to see is, when leaders understand the benefits because they've done enough dive deep and they think about how it could transform their business, or like we like to call it, in the Amazon parlance, they work backwards from the experiences that they need to build for their customers. That drives conviction and that drives mind share. And I think long-term though, I'm pretty optimistic, telcos are very well positioned for this kind of transformation. They're just used to making big strategic and financial bets, and what I'm seeing is, they're realizing that the cloud is a fundamental part of their long-term technology strategy, and therefore they're starting to become comfortable about making strategic bets on doing things in the cloud.

DR:

[07:33] Well, I think what's interesting about telco, and you just said it, was that they're used to making these big bets and then usually the big bets are very capital intensive and the bets are multi-year bets, they take a long time to come to fruition. And you could say that's true with the public cloud as well, it takes a little bit of time before you start to see the results. But I think what's different with the public cloud is the capability to very easily experiment at a much

lower price. Picking some of these workloads where, I call them one-way doors versus two-way doors. There's some workloads that you can pick where you're like, "Let's just sample this in the public cloud. Let's experiment on a small population set or a small area. If it doesn't work, we can go backwards. No big deal."

[08:17] Deciding to build 5G is a one-way tour. Once you commit to that, it is \$50 billion, that's a massive investment decision. And I think like you said, leadership is super important, this isn't a middle management decision per se, when you decide to really make a strategic investment with the public cloud as a telco, I think it's a CXO discussion, it's a board discussion.

Chivas:

[08:36] Absolutely, yep.

DR:

[08:37] But what's so great about AWS, is the ability to experiment at a small scale and for a relatively very low price and then try it out. Are you guys seeing people starting to experiment and do those sorts of things?

Chivas:

[08:51] We do, that's typically where a lot of the conversations start. It starts in the technology organization or it starts in a line of business where they want to do something, they're not quite sure how it is going to work, they're not sure about if it's viable or at the right price point. And I'll give you an example, at a telco customer, they wanted to transcribe all of their customer care logs so that they could get some insights, do realtime deflection of calls, and then ongoing insights to fix customer issues that could become something proactive. So an internal team tried to muddle along for almost a year to figure out potential solutions, and they tried a bunch of open source software that they started to consume themselves. And it didn't add a lot of value, it took a year and they still were doing a very small portion of it.

[09:34] Then we started talking to them about that challenge and they worked with us, and within a few months they had built a fully functional production, all of their calls being transcribed and then AI driven insights coming off of it, in a few months that business was suddenly now able to take advantage of all this data that

had been accumulating and make the experience for their end consumer so much better because they could deflect faster, they could proactively reach out when they saw an issue, and we'd just removed all the undifferentiated heavy lifting from the engineering teams that were just trying to figure this out. And we see that repeated. You see that two or three times in a technology organization, then the business team starts to get really interested about what else they can do, and then it bubbles up and it becomes really a CXO and board level conversation like you talked about.

DR:

[10:20] Yeah. No, I think that's super interesting because I have seen that too in organizations where they're playing with the public cloud, they have a couple servers running, but they're not really doing anything. And when I talk to telcos, I'm like, "Well, how are you transforming that workload to really take advantage of some of the elements of the public cloud?" And they're either transforming it on prem, so it's cloud agnostic and not really using AWS or whatever hyperscalers services, and so they're going to, essentially do a lift and shift. Sure, it's cloud native, it's in kubernetes, but I really think the power of using the public cloud is when you get over your fear of lock-in and you start to adopt, literally, software. I think the great thing about AWS is the software and starting to use these elements, and that's where you can start to see the business value and not thinking of it as just infrastructure.

[11:07] And so, do you really see the telcos starting to realize, "Oh, it's so much more than just the chips and the servers and all that stuff. It really is about all these services that I can use to start to build powerful business applications that move the needle on my business.", are they starting to do that?

Chivas:

[11:23] Absolutely. And in this case, necessity is driving it. You and I have been working together with a customer that wants to build a new model for how to deliver large private networks to enterprises, a space where all three of us are not quite sure what the end solution's going to look like. So, how do we get there? Our customer's really trying to figure out from their end customer what is it that they want to do and they don't know sometimes. So we're going to

have to run a bunch of experiments to say, "Okay, is this a model where you run on existing public clouds? Is it something that you deploy different infrastructure for? How do you look at the data that's coming into these environments? How do you protect it? How do you charge for it?" Each of these is decisions that you're making and this assembled bits of software that we're putting together to make it happen in the absence of a fully functional end-to-end solution.

[12:10] And you really can't do that today and just hope that you can build something in a year or two years time and then a customer at the end of it is going to say, "That's perfect. That's exactly what I want." It's an iterative process, and that experimentation, treating all of those decisions like software driven decisions, that's what I'm seeing in a bunch of different use cases, particularly around telcos trying to grow revenue, because these are adjacencies that they're trying to get into.

DR:

[12:35] And one thing that you just mentioned, which is super key to the Totogi approach, is exactly what you just talked about. Which is helping telcos to run these small quick experiments and iterating and getting away from, I'm going to call it big bang project deployment, where things are like, "Okay, we have the architecture designed, we're all in agreement. I'll see you in two years. We'll see if it works." And really just shrinking it down and saying, "Let's get this up in eight weeks and see if it works."

[13:02] We're starting to work with tier ones in that way. I had several meetings this week with tier ones where they're like, "No, we don't want to talk to you about our main business with all of these customizations, but over here to the side, new ways to monetize new ideas that we're trying." And they're like, "How long will this take Totogi to get up and running?" And I'm like, "Couple weeks." And they're like, "Are you sure?" I'm like, "I think it'll take us longer to sign the NDA and the contracts than it will to actually do the work." That's because we're building our stuff as a service, SaaS, it's a lot of how you guys deliver your products and your software. And so, our product has an open API, it's a cloud forced approach. We're trying to help telcos get more value quickly, sort of

this try before you buy, like you were talking about. Do you think SaaS companies like Totogi are going to help telcos like this? Are you seeing other vendors in the ecosystem start to think this way too?

Chivas:

[13:56] It is still early, but fundamentally I believe telcos and the partners that they work with are typically good engineering organizations and they will change when they see a faster, better and cheaper path, but they just won't do it in the absence of a conversation around all the right basics being in place. By that I mean, how do you actually protect data? How do you make sure that the customer's privacy requirements are met, the customer's monitoring requirements are met? As a SaaS, how do you make sure that the product itself is engineered in such a way that the telco feels that they can put their customers into that environment in a safe and secure fashion?

[14:38] So, partners like Totogi that can go out and really talk about how to build these SaaS solutions in a safe and secure fashion, that's I think going to change the conversation. We saw that with traditional workloads, I think you're going to see that with these kinds of revenue generating new workloads. And frankly, at that point, partners like Totogi now start to say, "Hey, I can deliver better features, better capabilities. I can take advantage of the range of services, for example, that AWS has, to build you better functionality and unleash value for you much faster than you could if you were..."

DR:

[15:11] Installing it.

Chivas:

[15:12] ... Yeah, the software that came through and went through SIT test cycles for six months and then showed up in a network environment, then the next config takes another six months.

DR:

[15:21] Well, yeah. I think telcos just historically have made all of those programs very bespoke because they felt like they needed to. Maybe the vendor can innovate pretty quickly, but getting it installed is a whole different ball of yarn, because the end-to-end process and all the customizations need to be tested and it just slows it down to literally years. Imagine not getting an app update on



your phone for three to five years, you're like, "The app is dead." And so, really trying to change the ability to get innovation to the telcos so they can use it. And so, I think that brings us to a really great topic, which is generative AI. You open Twitter, can't get away from it, even the news. And I think it's another very powerful use case for using the public cloud, because the scale of the large language models to do the inference, to do the training and the testing. Are you guys thinking that this is going to be another big reason for telcos to move to the public cloud?

Chivas: [16:15] So first of all, isn't it such an amazing time to be a technologist in the industry?

DR: [16:20] Oh my God, It's amazing.

Chivas: [16:20] I haven't seen this rate of change in 20 years and that's awesome to be a part of.

DR: [16:26] Yeah, for sure.

Chivas: [16:27] But generative AI, it is an incredible set of transformative technologies, but it's fully dependent on the cloud to be successful. From training large language models, to running inference at scale, there's a massive amount of compute that's going to be required, and that's predominantly, I believe going to happen in the cloud. In addition, companies will want generative AI to be part of a long-term technology strategy. There's going to be the need for the same enterprise grade security that we talked about, the privacy and protection for their data, and really the ability to consume gen AI capabilities just like they would any other cloud service. The other nuance I think is also important, is it's very early in this transformation cycle and telcos will want to match their use cases to different models. I don't know what model's going to be most effective for all telco workloads, there's no such thing.

DR: [17:13](#) No, I know. I'm still experimenting with Claude and ChatGPT 3 or 4, when do I use what? So absolutely.

Chivas: [17:21] Yep. So, I think we'll end up with telcos really having to figure out what models provide them with the right mix of cost and performance. And then, as you start

to use it in your workloads, in your applications, be as close to the applications as possible. And then, you want to be able to do it in a way that allows you to run those workloads at a price performance ratio that works for you.

[17:45] And I think with AWS in the public cloud, we offer, with our investment in silicone for training and inference workloads, specific custom chip sets that allow you to do it much better. We allow you the ability to go consume a range of these models, whether you want to do it in your own virtual private cloud environment, so it's isolated, protected, none of your data ever leaves that environment, or you want to run it as a managed service. And we announced a new managed service called Bedrock into preview. And I think all of these capabilities are really going to be necessary for telcos to say, "I can figure out how to best apply this set of new transformation technologies to the right use cases in my business and then get value out of it much faster."

DR:

[18:25] Yeah. No, I saw that Bedrock announcement and I wrote a blog about it. The big problem with AI is making sure that your enterprise data and your proprietary data is not getting into the training sets. And that's so great about Bedrock, I think the choices on models, for sure, and then the ability to keep your data private, which I think is going to be super key for enterprises like telco.

[18:48] And I think I saw you guys announced a \$100 million investment more into gen AI on top of your two chips that you mentioned, Inferentia and Trainium. And so, from silicon to Bedrock, that code whisperer thing, I think is great, to lift the average capability of an IT organization within the telco. These are all amazing services that you guys are announcing, with a \$100 million more, you guys are going to just keep advancing that. So that's amazing, I'm so excited. We're playing with it too. I think I finagled my way until an early preview of Bedrock, and so we're starting to play with it at Totogi and within our organization, so we're super pumped about that.

Chivas:

[19:27] That's awesome.

DR: [19:28] Yeah. So, we've talked about telcos diving into the public cloud, taking the plunge, facing your fears. I hear you have a nine-month-old baby who's learning how to swim and you're learning how to swim too. How's that going?

Chivas: [19:42] Oh man. I've been just trying to get back to doing something that's not just childcare and work and you know how that goes.

DR: [19:48] Yeah, taking care of yourself.

Chivas: [19:50] It's a super odd twist of fate. My son is a total water baby. Loves the water, leaping out of my arms anytime he sees a body of water bigger than a bathtub.

DR: [19:59] Yeah.

Chivas: [20:00] And me, I'm afraid of water. If it's more than two feet deep, I'm not going anywhere near it. So now I have no choice, and I've had to start swimming lessons and this is where my free time is these days. It's just trying to stay that one step ahead, or actually in this case, one foot ahead of the depth of water he wants to be in. And it's just facing your fears and just having fun with it.

DR: [20:20] I think it's a perfect metaphor for telco execs and the public cloud. A lot of execs feel like they should know everything, and this is a new technology, so it's generative AI. And I think they got to be a little bit more like Chivas, like, "Hey, that's what the kids are doing and I'm going to go learn about it." And while they're at it, why don't they try some Totogi? And I think that would be super amazing.

Chivas: [20:41] Danielle, I'll tell you, I am still ever so terrified, but sometimes conviction helps you overcome fear.

DR: [20:48] Yeah.

Chivas: [20:48] And that's what I see here.

DR: [20:49] I think baby steps, and you'll get there. It'll be totally amazing. And so, Chivas, this was a wonderful conversation. I learned a lot about what you guys are

seeing on your side of the fence, so thank you so much for coming onto the Telco in 20 podcast.

Chivas:

[21:02] Thank you for having me on, this has been fun.

DR:

[21:04] Awesome. Stick around, because we're ending each podcast with a Telco in 20 takeaway. I have 20 seconds to tell you something you need to know. Listen to what Chivas is saying about adopting a culture of experimentation. In the past, when you wanted to test out a new idea, you had to make a big expensive bet that affected entire countries. It took years to figure out if the experiment actually paid off or not. That time is over. The killer software of the public cloud, like generative AI databases and machine learning can now shrink your timeline to success from years to months. Don't be afraid of the BFCs. Instead, think of the hyperscalers as software providers. They enable experimentation at a much smaller scale and price. You can test new ideas in a city or on a small segment of your subscribers. You can quickly find out if your theories can increase [inaudible 00:21:59], reduce churn, or attract developers to use your APIs at a low, low price. You need to use SaaS and API based platforms like Totogi to accelerate your time to market.

[22:13] We're at an unprecedented time with gen AI and the public cloud. The time to embrace it is now. The telcos that don't, the ones that are hiding in a corner or trying to build their own large language models will miss the boat. Ride the wave of experimentation and figure out new ways to monetize your biggest asset, your network. And while you're surfing the big waves of tech, why don't you glide on over and check out another Telco in 20 podcast? You can find the other 69 episodes on Apple Podcasts and Spotify. And while you're at it, leave us a five star review. Sign up for a kickass email newsletter on telcodr.com and check out our killer YouTube channel. When you're done, follow and DM on Twitter at telco dr, and connect with me on LinkedIn so we can talk even more about how amazeballs the public cloud is. Later, nerds.