Episode 33
Quick and easy real-time communications with Amazon Chime SDK
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Danielle Royston 00:00:00

I'm Danielle Royston and this is Telco in 20.

I keep yapping about how the public cloud is amazing. A lot of people look at the public cloud and think it's just a way to outsource their data centers, but that's not the real reason you use the public cloud. It's because it has these awesome software services. Did you know there are over 200 services at AWS? Our buddy, Forrest Brazeal even wrote a song about them. There are so many! (Song: *"These are the major services of AWS!")*

I've said it before. When you fully embrace the public cloud, you get to stand on the shoulders of these hyperscaler giants who have done all the work for you, and let you pay as you go. The great thing about these services is that you can build apps super quickly, just like building with Legos. I mean, who doesn't love Legos?

Today on the podcast, we're gonna talk to the GM of one of those services: The AWS Chime SDK. Chime SDK is a set of real-time communication components that developers can use to quickly add messaging, audio, video, and screen-sharing capabilities to any desktop web or mobile application. And we're gonna talk about how you cannot only build cool applications on the public cloud, but even easily extend legacy crappy, on-premise applications with public cloud functionality. So… let's take 20!

Sid Rao is the General Manager of Amazon Chime SDK. Welcome to telco in 20!

Sid Rao 00:01:38

Thank you for having me. I really appreciate the opportunity to have a chat with you today about the Amazon Chime SDK.

Danielle Royston 00:01:44

I'm super psyched to talk to you. So, AWS has over 200 services, of which Chime SDK is one of them. So just to start, let's introduce: What is Chime, and what service does it provide?

Sid Rao 00:01:58

Sure. So the Amazon Chime SDK is a set of building blocks that enable developers to add communication capabilities to their applications. Whether they're building a video call center for an enterprise-use case, a telemedicine scenario, or interactive voice response, or public telephone network services; we provide a set of flexible communication building blocks that integrate with other AWS services to create delightful communication experiences that improve the customer experience for our customers.

Danielle Royston 00:02:30

Yeah, that's awesome. In telco, the whole idea of coding exclusively and mostly with APIs might be kind of a new thing..? I realize in other industries, everyone's been doing it forever and ever. I'm a big fan, obviously, of APIs and combining them with AWS services. And so before we get into how telcos can use

Chime, I want to take a step back. Why do you think telcos should code with AWS services? Not just enterprises, but telcos. What are the advantages that coding with APIs really bring?

Sid Rao 00:03:03

First of all, AWS takes care of the undifferentiated heavy lifting associated with cloud computing, working with communication services, security, variant networking concepts, which enables the telco to really focus on their core competencies, areas of excellence, abilities to differentiate for their customers.

Danielle Royston 00:03:24

What I always talk about is “give up the plumbing”, which is managing the machines. And abstract away from that, and start to focus on your core competencies, driving new ideas to market faster. I think APIs really help that, and they’ve become these building blocks. Some people describe them as Legos…building with Legos to build functionality faster. I think AWS has done a great job of abstracting tons of different services, trying and being one of them so that you can build new functionality much more quickly.

Sid Rao 00:03:57

Correct.

Danielle Royston 00:03:58

So let's talk about the ways you can use Chime. You and I talked a few months ago when we were starting to think about putting together a podcast, and you gave me a really great example of how a telco could use Chime. We did this awesome live coding workshop for a TM Forum event and we pretended that we had a legacy on-premise call center, that the customer didn’t want to go through an upgrade, they didn't wanna rip and replace the system – they just want to add video conferencing. That was our set-up. In about 30 minutes, using the Totogi APIs as well as the Chime SDK, we were able to add it. And we demonstrated it live – everyone was super psyched. Now, flipping back to what you're seeing – you see lots of different applications of Chime both in enterprise, but then also with telco. Give me a couple of examples that you think are really great ways to use Chime. I think you recently signed a partnership with Inteliquent.. tell me a little bit about that.

Sid Rao 00:04:55

Sure. So Inteliquent is a wholesale telecommunication voice provider. They provide public telephone network connectivity to large enterprise and large telecommunication operators. So they run, for example, the voice services for – actually – the third largest wireless operator from the United States. And as people started to work from home, the need to communicate from environments with background noise increased considerably. And what Inteliquent did was they used advanced artificial intelligence and machine learning services from AWS to eliminate that background noise from these public telephone network conversations, therefore improving fidelity and comprehendability, which therefore improved agent productivity and employee productivity for their enterprise customers.

Danielle Royston 00:05:43

Yeah, and created a differentiated product in an area where people think is dead and not growing. So.. super awesome!

Sid Rao 00:05:49

Correct.

Danielle Royston 00:05:50

So with that, let's go into ways telcos can use Chime. I think most telcos spend around 7% of their revenue on their call center. We've talked to other telco execs where they can bring that down to 1% if you start to automate and do some cool things to really enhance the customer experience. How could a telco use the Chime SDK with the call center example?

Sid Rao 00:06:15

Sure. So let's start with how telecommunication operators can use Chime to reinvent their customer experience. We've all had to call wireless operators, cable operators for service, for help, for account and billing questions; and frankly, it's not a fun experience. And it's an area that most operators need to differentiate in – how do they improve the customer experience to self-help; the ability to have a good conversation with an agent, to gauge customer sentiment and put the right proposition in front of those customers, and also ways to increase average revenue. And the tricky part is, if you're a large cable operator – or in my case, I work with the customers that are one of the largest wireless operators in the United States right now, and they've got an existing investment in a call center platform. They've already got massive investments in billing platforms, back office platforms, and CRM platforms. And the thought of going and ripping that out, and putting in a cloud-native contact center, it honestly scares them. But they still need to add capabilities to that context of whether it's video, self-help…

Danielle Royston 00:07:25

The sentiment you're talking about –

Sid Rao 00:07:27

Yeah. You have agent assistance, so you can provide real-time suggestions to an agent as to what to suggest to customers. And we're producing a blog which presents how a operator, for example, could take an existing call center that's perhaps built on Cisco or Genesis, or maybe they built it on their own – and integrate it using the Amazon Chime SDK to capture audio, to transcribe that audio, use comprehend, to gauge sentiment from that audio that's coming from the customer and then use variety of other AWS services such as Kendra to find related content and knowledge bases and present suggestions to agents about what to cross-sell, how to handle a complicated customer scenario, how to handle an escalating customer.

Danielle Royston 00:08:12

How to troubleshoot a problem, yeah.

Sid Rao 00:08:14

Exactly how to troubleshoot a problem. A lot of call center managers and customer service officers within telcos would look at that as, “That allows me to reduce average handle time, or average wait time or things of that nature within my call center.” But it's actually about improving the customer experience.

It's about providing really targeted content that makes sense for the actual customer who's calling, and relevant content that's relevant to that particular customer. And so that's just a way to use artificial intelligence machine learning from AWS. Again, things that AWS specializes in to improve the customer experience, which is a primary focal point for a telecommunication operator.

Danielle Royston 00:08:56

Yeah, no, I talk about it a lot, certainly with my company Totogi. I mean, this is the future that we imagine for telcos. The experience of calling into your telco, having to go through their scripts, and starting at level zero, and proving to them that you really do need help. It's a frustrating experience, I think. Everyone I know, their parents call them for help with their telco issues. They don't call the telco company, right? And there are tools out there. Really great chatbots that can help get you to an answer faster if it's a simple problem. But then also, kind of the things you're talking about, we're actively text messaging that, "Hey, we know there's an outage in your area. We're sending our engineers to go fix it." So you highlight a lot of problems with telco. There's a ton of legacy systems and they don't necessarily wanna rip and replace them, but they do want these new ideas and they wanna experiment with them. And I think that's where those APIs and your SDK and just Amazon in general, really come together. You DON'T have to totally replace everything, and you CAN get going with these new ideas.

Sid Rao 00:09:57

That's absolutely correct. And if you think about it from a telecommunication operator perspective, the thought of deprecating those assets and those capital assets scares the living daylights out of them. So, that is where AWS is super useful. It's because through these APIs, through standards-compliant interfaces, for example, to capture the audio off of this call center platform, we use SIP. It's a standards-based integration that almost every telecommunications voice operator is very familiar with, and they know how to manipulate it and work with it. And no, they don't have to deprecate an asset they've acquired. So that's definitely one of the types of workloads that we work with telecommunication operators on. But the second way is actually to also create differentiated features and new capabilities that a telecommunications operator can extend to their enterprise customer. And you asked me about Inteliquent. Inteliquent basically created a new capability on their voice network. And Inteliquent has a problem – they're used to basically selling voice services, which have become a commodity over the years. In the eyes of many customers, it's a race to zero. It's *how cheap or how cost-effective can I get this voice capability?* And for Inteliquent, a race to zero is not a very compelling business model, right? They wanna…

Danielle Royston 00:11:23

I don't think that's an insight.

Sid Rao 00:11:25

Not at all. Yeah. That's not an insight but, you know, it's amazing how a lot of telecommunication operators – that's actually why they feel like customer service is the only place they can differentiate, right? And I actually disagree with that. I think that, especially with machine learning and artificial intelligence, there are new ways to add value... Especially value that's powered by Amazon Web Services, for example: to create differentiated offerings that take something that's kind of old and curmudgeonly, like enterprise voice, and make it – reinvent it and add capabilities to that underlying service. So in the case of Inteliquent, what they did was they used some of our machine learning capabilities to improve

the quality of an audio signal; to eliminate background noise, to remove the barking dogs behind a call center agent working at home. You might have heard my puppies a couple minutes ago, so I do apologize for that.

Sid Rao 00:12:21

But yeah, you're working from home now because of COVID and you might be a call center agent working for a car dealership, for example, and you're trying to answer calls and your dogs are barking in the background and your customers can't hear you. So what Inteliquent did was they took voice processing and audio processing capabilities that are available in the Amazon Chime SDK and integrated it into their core voice network, which made it very easy for a enterprise customer to purchase telecommunication voice services that have an increased level of fidelity, comprehendability and make it easy for those enterprise customers to hear their customers. And in their case, they made it as easy as buying a telephone number. Basically you can go to Inteliquent today, purchase a phone number and it has these in-built artificial intelligence machine learning capabilities from AWS built into the phone number. So it's the same business model, what they're used to selling.

Danielle Royston 00:13:12

That's super cool!

Sid Rao 00:13:13

And they didn't have to completely change their entire business model. That's still the same business model. It just happens to have an additional feature.

Danielle Royston 00:13:19

No, it's a killer feature. It's a killer feature on an old thing, which is voice. But you know, the world has changed. I mean, after COVID, people, at least in the United States are like, basically rioting. They don't wanna go back to the office. They wanna be able to live anywhere. And so a lot of companies are being forced to support remote workers, and they're not buying office space everywhere, and so that controlled environment, that quiet environment isn't necessarily a given. And yeah, I mean, people have doorbells or kids or dogs or whatever it might be. And so it's like this new way, which never was really important before, but now it is because the world has changed. So…

Sid Rao 00:13:56

Correct.

Danielle Royston 00:13:57

That's super killer, and I think it's a really good example with telcos who worry about becoming a dumb pipe. And they worry about all the over-the-top vendors and everyone else is eating away at their ARPU and they don't know what to do.

Danielle Royston 00:14:10

And you mentioned something a couple minutes ago, which is the thing that telcos have is, they own the relationship with the subscriber. They know everything that people are doing on their networks and they can start to couple it hopefully in a non-creepy way with AWS services, like machine learning and artificial intelligence or the sentiment analysis and all these great things that AWS comes out with, couple it and make the relationship with the subscriber – I don't feel like I have a relationship with my telco. I really don't. I don't feel like they know me. I don't feel like they're constantly protecting the relationship and they aren't like, "Hey DR, we know that you're a big traveler." And when you call in, they know that I'm like a high ARPU person, and so they funnel me to like the ambassador team and roll out the red carpet. They don't do that at all. They're just like. eh… you know? I left a telco earlier this year. They're like, "You're leaving?" No one tried to stop me from leaving. And I'm like, that's unbelievable! So I think you're totally right. We're talking about Chime, but I think it's this bigger idea of looking at things in new ways and being willing to experiment and change. I think that's super exciting.

Sid Rao 00:15:15

Absolutely right. One of the things that AWS makes accessible to telecommunication operators of all sizes is we make it easy for these customers and these partners to access services that used to be high CAPEX, high cost, high license, on-premises style deployments. So if you talk to call center managers, they'll add a telecommunications operator. They'll tell you, "Oh, we used to be able to do this all the time. We bought a platform from Nice or Variant" or one of the various other providers of call recording services and speech analytics and things of that nature. But the thing about it is, those platforms were super expensive to implement. They came with massive license fees.

Danielle Royston 00:16:01

Long implementation cycles. Yeah.

Sid Rao 00:16:03

Long implementation cycles. And you know, you mentioned to me once about how Amdocs, for example, what they used to do in the billing space and how that's not very agile and not very effective for telecommunication operators from a back office perspective. Similarly, when it comes to things like recording, call center audio and providing speech analytics and providing insights and this sentiment and suggestions on how to better handle a customer relationship. AWS now has capabilities that are available, that are pay-as-you-go. Not capital expense-based, you know, asset acquisition stories come with APIs and these APIs are very accessible. You just need to know some Python. If you want to use some of our APIs, it's not like you have to…

Danielle Royston 00:16:46

It's easy to experiment. People can start trying it.

Sid Rao 00:16:48

Exactly.

Danielle Royston 00:16:49

..and it's not millions, millions of dollars and months, and months, and months. But rather minutes. You're like, I got it up and running. I tested it on my phone. I tested with my buddy next door. It totally worked. (Exactly.) Let's start blowing it out. And this is how the world is changing. And certainly what I'm doing with the Totogi is that, trying to jump on that idea of pay-as-you-go, usage-based pricing, easy to experiment… Really, reduce the friction to experiment with new ideas. And I'm trying to get the telco industry – that's all I do all day – is jump up and down and say, just give it a try, just start playing with it and you're gonna love it. It's gonna be amazing.

So, this was awesome! Sid, I was looking at your bio when we were getting ready for our talk today. We were just talking about experimenting and playing around with programming, and I noticed that you taught yourself how to program when you were eight years old. Tell me a little bit about that story.

Sid Rao 00:17:43

Oh! Well, yeah, that is on my Amazon bio actually!

Danielle Royston 00:17:48

You're like, "How did you know that about me?"

Sid Rao 00:17:50

Yeah. Well actually, I did teach myself how to write software. I was completely self-taught when I was a young kid. I actually grew up in an environment where, for a lot of reasons, I didn't have a ton of friends and the computer was kind of, one of my best friends. My pal, exactly. My sister was in high school and she came back home one day with "An Introduction to the C Programming Language" by Kernighan and Ritchie.

Danielle Royston 00:18:17

A famous book!

Sid Rao 00:18:18

It was a famous book. And my dad who worked at Purdue University lent me his credentials. So I could log in via – at that time it was Kermit. I could dial-up to the university computing center and get basically a Unix login with a C compiler there. And I was able to effectively start writing C code. And it was fascinating. I ended up going to university very early in my life. And when I was 14 years old, I was working in India for a company called Infosys. You've probably, you've heard of them. And I got to start writing software for the DMS100 and just seeing phone calls work, and the ability to influence how that phone worked just by writing code.. I was in an impressionable age and yeah, that's how I got involved in the communications industry and from there on out, I... Yeah. It stuck. And so now I'm about to turn 41. So I guess 27 years later, I'm still writing call processing code. You know, after all these years.

Danielle Royston 00:19:24

Well, I have 10 years on you. I just turned 51 about, I guess, almost a month ago.

Sid Rao 00:19:31

For the record, I did not ask you your age.

Danielle Royston 00:19:32

No you didn't. You didn't. I volunteered it! So I too, I have a computer science degree from Stanford, but similar to you, I taught myself how to program. Now, 10 years before you, people didn't have log-ins and have access to those kinds of systems. But when I was around nine years old – so this would've been about 1979 – my dad bought an Apple II Plus, and we were like the only people in my neighborhood by far). And my dad programmed with punch cards on an IBM mainframe, I think. But he bought this PC, but you couldn't really do that much with it. They weren't really games, but I kept turning it on and there was like this flashing cursor and I would like, read random manuals and I figured out how to program in Basic. What I would do, I mean, I was like a little girl, right, I was like nine. I would program with print statements and like four loops… very Basic and like, print out little signs like, "Stay out!", you know, "Danielle's Room". That's how I sort of started programming. I have two aunts that have computer science degrees, which was kind of rare in the eighties. And then I ended up – I graduated in '93 and I have a computer science degree. So, awesome!

Well, Sid, it was super awesome to have you on the podcast, talking to us about Chime and all the things telcos can do to experiment, and so I really appreciate it. Thanks so much.

Sid Rao 00:20:59

Thank you, and I really appreciate you having me on the program, and let me know how I can help in any way, and how AWS can help.

Danielle Royston 00:21:04

Perfect.

Sid Rao 00:21:05

Thank you.

Danielle Royston 00:21:06

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:

The rise of API-first, API-only systems like Totogi's API platform has got to be Amdocs' worst nightmare. But IT IS HAPPENING.

In 2021, I talked to three major telco groups that are DONE with the monolithic, closed consulting-dependent models of the past. From creating APIs for network connectivity, to building their own APIs for all internal systems, to even creating a new senior role: Head of APIs – Telcos wanna move faster, do it cheaper, and start to compete head-on with the tech companies. I think this is a great start. But to take it to the next level, you need to use your APIs alongside the services of the public cloud.

AWS has more than 200 services you can add to whatever you're building. Like Sid mentioned, you can not only use AWS Chime, but also combine it with sentiment analysis, automatic voice transcription, AI.

What's so great is that you can easily build your applications with these services in minutes. But even better, AWS continues to innovate and grow their catalog of offerings. It's almost like, wait for it… the nearly 60,000 programmers at AWS become an extension of your IT team. That's what I mean by standing on the shoulders of giants. That's the power of the public cloud. ...and that's the power of the Telco in 20 podcast! Dropping knowledge bombs that you'd have to pay thousands of dollars to McKinsey for, wrapped up nicely in 20-minute episodes.

And if you want more knowledge in 2022, call or text me at 925-TELCODR. Share our podcast with your colleagues, and if you liked what you heard, leave us a review. If you're a telco leader, making your move to the public cloud, I'd love to have you on the podcast. Let's connect on LinkedIn and on Twitter @TelcoDR and sign up for our awesome email newsletter on telcodr.com. Later nerds!