EPISODE 1275

[INTRODUCTION]

[00:00:00] CQ: Hello, I'm Corey Quinn, Chief Cloud Economist at The Duckbill Group. I also host two podcasts; The AWS Morning Brief, and Screaming in the Cloud, as well as write Last Week in AWS newsletter, and I'm taking over hosting duties for Software Engineering Daily for this week, and taking that opportunity to drag you all with me kicking and screaming through a tour of the cloud. Today, we're exploring the world of Google Cloud, or GCP, or Google Cloud Platform, because if there's one thing that's consistent between all of the cloud providers, it's that they struggle with naming things. I'm joined today by Liz Fong-Jones, who was at Google for a long time, and now is a principal developer advocate at honeycomb.

[00:00:34] JM: A few announcements before we get started. One, if you like Clubhouse, subscribe to the Club for Software Daily on Clubhouse. It's just Software Daily. And we'll be doing some interesting Clubhouse sessions within the next few weeks. And two, if you're looking for a job, we are hiring a variety of roles. We're looking for a social media manager. We're looking for a graphic designer. And we're looking for writers. If you are interested in contributing content to Software Engineering Daily, or even if you're a podcaster, and you're curious about how to get involved, we are looking for people with interesting backgrounds who can contribute to Software Engineering Daily. Again, mostly we're looking for social media help and design help. But if you're a writer or a podcaster, we'd also love to hear from you. You can send me an email with your resume, jeff@softwareengineeringdaily.com. That's jeff@softwareengineeringdaily.com.

[INTERVIEW

[00:01:50] CQ: Liz, thank you for tolerating my presence.

[00:01:53] LFJ: Thank you for having me, Corey. It's always a pleasure.

[00:01:56] CQ: It really is. You're one of those people who has been around the industry for a while. And you've done a lot of really interesting things. You were at Google for 11 years, which is more or less 40 years in a traditional industry. Tech changes quickly. Cloud doubly so. What was, I guess, your impression coming from a world where, in the beginning, Google Cloud either wasn't a thing or was extremely nascent, to a time when you left where it was one of the top three.

[00:02:25] LFJ: I think that Google Cloud was a very, very ahead of its time. The first Google cloud offering was App Engine, right? It was the land of snapshot where everything Snapchat ran on Google App Engine. And we had stickers that we put on our laptops. It said, “We are all App Engine SRE,” right? Or we are all Snapchat SRE because of the sheer volume that Snapchat who are so, so, so early into the serverless world. Think of it this way, right? This was before Google had a general purpose compute platform for the public. This was just we're going to offer a serverless platform to the public and see who takes it up. And I think that that was too early for the time, right?

So we've seen Google realize that they can't just appear to come from the moon with these magical Google technologies. You have to meet people where they are. And that's kind of where Google kind of had to backtrack a little bit and then where AWS got that opening to really become the preeminent cloud provider and where Google is now in the race to be number two or number three.

[00:03:28] CQ: Absolutely. It goes even beyond that in some weird ways, because we're seeing this almost ridiculous story where, once upon a time, it felt like App Engine was too early, where a bunch of people in the spheres I operated within all took a very different perspective of looking at this thing and saying, “Ha! This feels an awful lot like it's a secret project being run by Google recruiting. So if you build something interesting on top of it, you'll get an offer to go work at Google directly.” And maybe there was some truth to that. Maybe it wasn't, but it was opinionated. It solved a bunch of problems in really neat ways and change the way we thought about how things got built. And then cloud became a bigger thing. And we started seeing GCP cropping up in different ways. But having kicked the tires on it a few times myself, I have a rough sense of the platform. But I've never done extensive work on top of GCP.

[00:04:18] LFJ: Yeah, and truthfully, I have been the site reliability engineering manager of a Google Cloud Platform service. I am a hobby user of Google Cloud Platform as someone who runs a piece of personal infrastructure on Google Cloud. But I can't say that I have run entirely on GCP a large scale big data workload at scale. I've certainly worked with and interviewed a large number of people who have though. So that's where I'm coming from is some practical experience from the inside and the outside. But I think that if you want to get the kind of where are the skeletons buried, that has to come from someone like Etsy who went all-in on GCP for all of their workloads.

[00:05:00] CQ: What's been strange as well is that whenever we see the marketing coming from AWS, for example, it's always about pick one provider and go all-in, which I generally believe to be the right direction as a baseline position to take. Whereas GCP has been coming out with the position of, "Oh, yeah, you absolutely want to run things in a bunch of different clouds simultaneously."

[00:05:20] LFJ: No, no, no, no, no, no. That's not been Google's messaging. Google's messaging has been a workload portability. The idea that you shouldn't chain yourself to one cloud provider, that you should be able to shop around and pick one cloud provider that makes sense to you and not be bound forever by your contractual terms, as well as your technical debt. So if you look at the history of Kubernetes, like that was a brilliant move by Google, where Google said like, "We are legitimately afraid that people have gone all-in on AWS. That they're going to be stuck there forever, and that no one is ever going to leave AWS because they'd have to re architect their entire platform." So that's where Kubernetes came from was out of this desire to make workloads portable, so that Google could actually compete for that business on grounds such as cost or value added services.

[00:06:08] CQ: A somewhat cynical interpretation of that data set that I have is that Google took a look and realize that if the world was going to be tightly wedded to their cloud provider and go all-in on that provider, it was almost certainly not going to be GCP. So their approach was, well, let's at least make sure that people are heading in a direction where they could come here without it being a technical impossibility for a variety of reasons. Is that too cynical?

[00:06:32] LFJ: I think that's entirely reasonable that like if you add the portability layer, it makes it possible, right? Like I think that in a world of people picking the incumbent, because that's where all of the skills are, that's where all the people are, right? Like you have to be able to offer some carrots as well as reduce the amount of friction that people encounter when they contemplate a cloud provider choice. But I think there's more to this, which is that Google also realized that the majority of the market had not yet moved to the cloud at the time that Kubernetes was released, that Kubernetes was donated to the Cloud Native Computing Foundation, right?

Like Google realized that a lot of the market was still in the enterprise that was going to be doing lift and shift into the cloud years, decades into the future. I think that's where that came from, rather than purely being a play about trying to convert and steal away AWS's existing customers.

[00:07:26] CQ: Right, I think that's something that is currently being lost in the nuance of the cloud wars, for lack of a better term, which is that, "Oh, we need to wind up going in and taking customers from other cloud providers, but so many more workloads, so many more applications live in crappy deteriorating data centers that are currently being dismantled by a team of feral raccoons, that there is so much more to be gained by migrating things from data centers and building out net new rather than effectively fighting over the scraps of people who have already migrated into clouds.

[00:07:59] LFJ: Yeah. I do think though that the argument goes something like if you can't win business away from AWS, or if you can't encourage people to adopt your shiny new differentiating features, because of lack of compatibility, that means that everyone's examples, everyone's reference customers are all going to be for one platform, right? So that kind of minimal table stakes viability is required to get the critical mass of user base for a cloud to succeed in winning over net new business from migrations. So it's an interesting balancing act. And definitely, going to your original question about what I saw over my 11 years, right? Like what I saw was Google initially built this massive compute platform called Borg that was built for all of its internal users. And that was very similar to Amazon building its own internal platforms for its own usage, right? And then they realized, both companies realized, that there was going to be a huge market in selling this compute capacity, not just through the mechanism of Google or through the mechanism of amazon.com, but actually instead through third parties being able to utilize the cloud services. And that's really where the battle kicked off.

[00:09:07] CQ: Absolutely, I think one of the real value propositions of cloud is that suddenly you don't need to lease space in a data center, get equipment ordered, get it shipped, get it racked, get it powered up, get it configured, go back home. Finally, make sure you can log into the thing, and only then start building the thing you care about. The value proposition really is you get access to this global class infrastructure, more or less instantaneously. And it costs you effectively pennies to kick the tires and try something out and then turn it back off again.

[00:09:34] LFJ: And I think that kind of goes to the question of what is meant by global class infrastructure? Because I think that Google and Amazon offered initially very different primitives. Amazon said, “You know what? We are going to offer you access to hypervisor machines, or are machines that are otherwise kind of very gated on individual processors.” Whereas Google said, “You know what? Like hand us your whole application. Oh, and by the way, you'll need to write a brand new application,” right? And those were very different models. And I think that kind of resulted in this view that people had, and rightfully so that Google is for the advanced users. And that Amazon is best for cases where you're starting out in cloud.

[00:10:15] CQ: For a long time, that presented to a number of people, or at least me as being more than a little condescending, where it's, “Oh, your application wouldn't work here at all, because you wrote it badly. If you were only just smarter than you are and wrote code like we do at Google, it would work super well.” But then again, if you were that smart, you'd already work at Google. And that was not the intended way that it was communicated. But very often, that's how it was interpreted.

[00:10:39] LFJ: No, right? Like it was well intended, right? It was we want our customers to have a great experience. We want to help you deliver 99.9, 99.99 reliability, right? But it turns out, not everyone has that requirement. A lot of companies just want their 95% or 99% availability application to just run out lower cost, right? And that was not a thing that GAE was optimized for. That was not a thing that kind of the early days of Google Compute Engine were super optimized for.

[00:11:05] CQ: It's a matter of, are you meeting customers where they're going or where they are? And what stories do you wind up telling to them? Now, it's very clear as someone who has at least gone through the rudimentary early process of standing up applications across basically all of the different cloud providers just for, well, fun really, because I don't remember what actual fun that normal people have looked like, because we're in a pandemic. But for me, there were clear differences in how the clouds were effectively articulated and displayed. I will say that of every cloud that I have kick the tires on, with the possible exception of DigitalOcean, that Google's dashboard and console make the most sense to me. It is the clearest example of get out of my way. Help me understand what I'm looking at. When you're done, you can terminate all billing resources in whatever project you were just working on. And you're not going to fall into the AWS trap of, “Well, I guess I'm paying 22 cents every month for the rest of my life.”

[00:11:59] LFJ: I think that's really fascinating, because it reflects the cultures of the companies that produce the thing, where the Amazon model has very much been around the idea of service ownership, two pizza teams that kind of each do their own thing and don't have an obligation to maintain a consistent experience. Whereas Google very much was, after the initial missteps with Google App Engine, building out a general purpose cloud as a single unified product end-to-end that they could put one UX team behind the management UI, right? And to mandate these are the standards that you need to adhere to. And it did have some costs as well, right? Like it did have some agility costs in terms of an engineer once wrote a scathing, I think four-page design document that detailed, “This is what it takes to add one new toggle to a Google Cloud feature,” right? And it was just like there're four pages of this describing all the approvals you need, all of the places you need to change the code, change all the protobufs, and so forth. And it was just – You would never think that something like that would happen in Amazon, right? Like you'd just be able to add the damn toggle.

[00:13:02] CQ: No. The problem is that toggle is going to look 15 different kinds of toggle across different services. When you're trying to do a confirmation, one will say type delete, one will say permanently delete, one will say type in the actual full resource Identifier of the thing you're trying to delete. It's almost like there's a serious series of MBAs between different product teams at AWS that prevent them from talking to one another. Google at least feels consistent and cohesive.

[00:13:26] LFJ: Yeah, right. Like it was built later, right? Like its general purpose cloud offering was built later than AWS is. And therefore, they could be a little bit more thoughtful about it. But I think that the initial user populations have really, really kind of diverged a little bit, right? Like you'll see students being taught to put up with AWS's witnesses, because at a boot camp at a university, people rightly are told, “You will probably be using AWS at your next job. This is where you're going to have to deal with.” Unless, of course, you are either a data scientist or an AI person, or you are an SRE DevOps person who is working at a large scale company, right? Like those are kind of the two exceptions where people pick GCP instead of AWS as the first choice, or they adopt GCP in addition to AWS. And I think that that is where we get again to the marketing strategy where Google built the minimum product need to be a general purpose cloud, but where they're really trying to differentiate are on the grounds of we have these super advanced features. And now we're able to meet you where you are, right? So the things around BigQuery, the things around Cloud Spanner, right? Like these are things that you cannot get anywhere else, that they are only at Google. And they solve problems that people genuinely have at large scale. And people know that they really, really need these things. And the same thing is true for tensor processing as well for kind of doing AI ML workloads.

[00:14:52] CQ: I've heard this from folks who have been inside at Google, that the same things that empower that massive global architecture and global scale don't works super well until you're at least an order of magnitude or three away from having that scale yourself. Like the analogy I heard that I loved was, “Hey, I need a butter knife to wind up cutting some butter.” And the answer is, “Great. Here you go. It's the continental saw. We use it to cut continents. Its manual is 8,000 pages long. It will take you three weeks to figure out what end to hold. But then, “Oh, it'll cut like nobody's business. Butter, continents, it's all for you.”

[00:15:26] LFJ: Yup. Yeah, the big **[inaudible 00:15:26]** analogy for that is we make impossible problems hard and easy problems hard.

[00:15:32] CQ: Yeah, it's kind of magical to see on some level. It's clear all of these clouds, all of them. Every cloud I'm talking about this week has obviously been built by extraordinarily intelligent people who think deeply about the problem space they're in. And it's clear that none of the clouds I am talking about this week actively hate customers or think that customers would have so much better outcomes if they just weren't quite so limited, or DOM, or anything awful like that, because none of that is – Well, the engineers that I've spoken to at any of these companies behave themselves or think about the problem that they work on.

The challenge, of course, with all these companies is that they're giant, massive companies. And it's hard to lose sight of the fact that those companies are comprised of people, generally, in teams of different sizes. And individuals are building various aspects of everything that we look at. It's easy to sit here and make fun of a trillion dollar company. It's a bit different to wind up sitting here and making fun of an individual who you've had a cup of coffee with.

[00:16:29] LFJ: Yeah, very much so. And I think that it's the set of engineers and product managers and designers building these systems, as well as who they think of as their design partners, right? Like who is my reference customer going to be for this? Who am I co developing this feature with? And that really influences what kinds of products you build, and how you make it available to people.

[00:16:50] CQ: That's, I think, an example of the idea that companies inherently shift their culture.

[00:16:55] LFJ: Seeing that, honestly, firsthand right now, I am in the process of signing up for Oracle Cloud. They've offered early access to a number of ARM64 ecosystem folks to try out their new Ampere processor shape. And Oracle ships this. We're here to sell you large dollar amounts culture, right? You sign up for Oracle Cloud. You got a bunch of emails from a real human salesperson asking you about all their offerings. You put in your credit card number, and it takes, I think, like 12 hours or 24 hours before they upgrade your account to a paid status, almost as if someone is manually reviewing and clicking the approve button, right? Like it's very interesting to see kind of, “Is this a fully self-serve company? Is this a very enterprise sales company? Like what's the product development impact methodology?” All these things seep through into the product, and you can see it.

[00:17:47] CQ: One thing I'd love to get your take on is given that you currently work extensively with AWS environments. You spent entirely too long working on GCP environments from that side of the world. How do you think that the cloud industry is approaching an inherent divide? Namely, first, the idea that all cloud adoptions can be bottom up driven by developers who are trying to build something and then it just effectively becomes what the company does, versus top down decisions around how a cloud vendor is going to be selected?

[00:18:19] LFJ: I think it really depends upon the size of the company. And it is an open question. How much of the market is small cap versus large cap? I think all of these companies very much want to acquire some of the small startup business, but a lot of the real dollars are in government contracts, are in fortune 500 companies, and even in fortune 10 companies specifically, where that adoption is not going to happen, the bottom up. That adoption happens via a bidding process. That happens via the CIO of a major company making a purchasing decision and actually putting it out to bid.

And I think that that results in these very weird kind of check the boxes feature wars. I think it results in a lot of stuff that doesn't actually have relevance to people's day to days. I think the other piece is that you can, and in fact, you will have to build your own internal cloud platform on top of your vendors cloud platform no matter what you do, right? That there is always going to be some notion of a platform engineering or vendor engineering kind of platform as a service that you are building on top of your provider’s cloud.

[00:19:31] CQ: There's also the question as well of who is adopting a cloud service these days, because on the one hand, you have the cloud services that are aimed at developers, or engineers, or however you want to define those folks, who are building the products that are what their company does, for lack of a better term. They are, for example, you're at Honeycomb. The Honeycomb SaaS offering is the service that you folks are building and then selling as a service to your customers.

[00:20:00] LFJ: All right, you've got into the profit center versus cost center argument.

[00:20:03] CQ: I am, but the persona on the other side is more corporate IT. We are purely a cost center. And our job is to make sure that, again, I'm oversimplifying, but the printers work, the mail server stays up. You have access to the file share. There's a wiki internally that we use, and controlling all of those things. That's also migrating to the cloud. But the user skills look radically different. The way that they interact with technology is fundamentally framing from a very different place. And I think that messaging that appeals to one is off putting to the other. How do you see that?

[00:20:35] LFJ: I think that the messaging to profit centers is about this idea of we help you move quickly, right? Like that we get out of your way. The messaging to cost centers is we help you cut costs. We help you manage compliance. And I don't think that those are necessarily opposing messages so much as a matter of market segmentation, that you have to deliver the right message to the right set of people, or you have to both appear to be trendy and cool, and also appear to be safe and compliant, and do that to different personas at the same company even.

The other interesting thing that I heard is that it's inevitable that every single large company is going to be multi-cloud because of acquisitions, that you are going to even if you're a pure GCP shop, acquire an AWS using company and not make them immediately move. So yeah, it's kind of this fascinating thing where you're going to get people from all of these axes anyway, unless you are a like super, super steady company. Even if you are a super, super steady company, you probably will have like an innovation department. Like one of our customers is a consumer products company. And they have this innovation department that deals with Internet of Things stuff, right? And I think that it's really, really cool to see that they have this kind of separate persona involved within their company that is not a treating IT as a cost center, is instead treating it as a competitive advantage.

[00:22:01] CQ: I agree with you from the high-level abstract. The part where I keep running into challenges in conversations with folks is I started very early in my career as summer jobs and whatnot, doing a bunch of corporate it for small businesses, and a few times with larger businesses. And the thing that I found in that space was that most folks were not – Again, this was maybe before the time of infrastructure as code was in hand. But the primary means of interaction that we all used was effectively clicking around in consoles, and more or less checkboxes, hit apply, etc. And the primary means of interaction for folks building services for production on the engineering side was doing it as code. And if you optimize for one of those at the expense of the other, you wind up in a bad place.

One thing that GCP does super well in this space is when you click around in the console, which is my primary means of interaction. You can evolve beyond that to a final form, which is using the console and then lying about it, but that's neither here nor there. GCP spits out the, “Oh, here's how you would do what you just did by clicking programmatically,” which is super helpful, as opposed to the AWS approach of, “Good job. Now throw the whole thing away and start over.”

[00:23:09] LFJ: Right. Like that is a question of who is your audience? Is your audience the set of people who care about moving fast without setting up the right scaffolding to maintain longer term? Or is your audience people that already have a mind towards scalability and reliability? Because for the people who want scalability and reliability, they find it super helpful to have that mapping. For everyone else, they kind of are going to ignore that or not care that doesn't exist in AWS.

[00:23:38] CQ: The problem I kept seeing was, and we see this at big companies all the time, I've heard whispers that it even applied at Google for a while, where you have corporate IT folks who are responsible for maintaining developer desktops, internal systems, etc., etc. And the folks who distinguished themselves on teams like that wind up getting poached to go work over on the engineering side of the world, which means that on some level, it's almost a feeder for the engineering group. But that also means that you wind up with the folks who excel over in the corporate IT space, not remaining there in some cases, and that introduces a whole new class of problem.

[00:24:11] LFJ: I think that that is definitely an area where Google has excelled, where Google has set a really great example to the rest of the industry. And they're doing these things and showing people along the way of how do you empower your internal IT teams? It's a very well-known term these days, but I'll define it anyways for people who don't know. Beyond Corp is this idea of get rid of your firewall. You are doing endpoint authentication, rather than doing authentication based off of what IP address someone is coming to. That you can have a completely entrusted computer plugged into Ethernet of your office and it won't be able to access anything, right? Whereas someone's mobile device, which is managed by the company, can access your services from anywhere in the world. And that was something that was innovated upon at Google by Google's internal IT teams that were solving problems that they were newly facing, and they realized the rest of the world was going to have to face, right?

And now you can get this everywhere, right? You can get this with AWS Cognito, right? But at the time, it was a unique value proposition that Google IT developed, and Google IT became like more of a profit center than a cost center for the company. The other interesting thing about Google is that, if you think about it, Google's number one expense is engineering time, right? The salaries of the engineers are so, so, so important to the company's bottom line. If you have an hour of downtime every week, because everyone is trying to check in their builds on Friday afternoon before they go home, and the build system falls over, like you have just wasted millions of dollars of payroll if you're Google. And I think that led to a lot of change in how Google approached IT culture and supporting and promoting people, and giving them prestige for keeping Google productive and up and running. And that was something that I was really, really proud to be a part of. Because actually, I was hired on to an IT team at Google originally. I was hired on to the team that maintained the HR systems and the source control systems.

And melding together, we kind of – Private cloud that we have at the time, and putting our source control systems onto that cloud as opposed to using Perforce on raw machines, right? Those were interesting and really cool efforts to be a part of.

[00:26:27] CQ: I could well imagine. It seems like it's one of those great ideas of more or less figuring out where your actual constraints are. I mean, one of the things that I see in all of my customer bases is I don't believe I have a single customer who is spending more on their AWS infrastructure than they are on payroll. People always cost more. And that does or at least should impact how you interact with cloud infrastructure. Well, why would we use a higher level differentiated service, instead of just using whatever the provider’s virtual machine equivalent is and then building it ourselves? Instead of using their load balancer or their manage database, we're going to run our own and then wind up running those ourselves. Now, doing that from a capability store is a very different scenario than doing it because, well, because it costs more. You'll pay a premium for a managed database service. So we're going to build it ourselves. Unless you're doing this stupendous scale, you're effectively stepping over pennies to pick up dollars. Sorry. Stepping over dollars to pick up pennies. Let's get my analogies right.

[00:27:23] LFJ: Yeah, I think it's this thing where people unfortunately have this tendency to treat headcount dollars and cloud spend dollars as not buckets that are interchangeable. But that's not necessarily a view that you will ultimately wind up finding if you talk to a CFO. I think it's kind of at those intermediate layers where that gets lost, where people feel like their headcount budget is fixed, and like their cloud budget is fixed. I don't know. What is your experience been there, Corey?

[00:27:51] CQ: I tend to see that the stories that people tell about why they're doing a certain thing is much more driven by psychology than it is about economics. And a lot of it is also tied to people's own sense of identity. Easy example, you're a MySQL DBA, and you have been one for 20 years. That's the general you. Not you personally. I know some people will take that as a deadly insult. And, okay, we're going to go use a managed database from any random cloud provider that's going to handle all of the care and feeding of that. So you just have to worry about the data side of it. Well, for folks who wind up being in that situation, it sounds like, “Oh, yeah, the thing that made you special, and differentiated, and doing all kinds of other neat stuff is now going by the wayside.” So it almost feels like a personal attack. So people are inherently placed in a situation where they want to defend what they perceive to be a component of their identity. And that's a hard thing.

[00:28:43] LFJ: Yeah, we saw a lot on – On my last couple of years at Google, I work on the Google Cloud Customer Reliability Engineering Team. And we worked with these enterprises that were moving large scale important applications to the cloud. And we're also aiming to make the switch from a traditional IT support model to a site reliability engineering, or DevOps, kind of you build it, you run it model. And there was a lot of trepidation on the teams that we talked to, because they were worried that their job security was going to be gone, or that the company was doing it just to put them out of the job. And what we had to reassure them was we're trying to empower you to do more so that you can waste less time doing grunt work, so you can work on more interesting and satisfying problems. And some people got behind it, and other people unfortunately didn't. And that's going to be the story of, honestly, this generation of IT operations folks, is how many people make the jump and how many people are stuck kind of in the legacy world?

[00:29:43] CQ: It's a hard problem. Again, I want to be very clear that when I use the word legacy, I am not using the condescending engineering term for it makes money, therefore it's terrible. That legacy is revenue bearing and revenue generated, and I think that's something that is easy to lose sight of given that we both are at least putatively or culturally in the Bay Area a fair bit of the time during normal years. There's something to be said for meeting customers where they are. All innovation, all value, all of the world that is growing is not just coming from a small subset of companies based in the Bay Area who believe that anything that was not written in the last 18 months is garbage. And it needs to work on the latest version of Chrome on the latest MacBook Pro that Apple sells. And anything else is just, “Ugh! It's for the plebeians.” I've heard variance, less incendiary, of that categorization come out. And I want to be very clear. I find the entire concept of horrid, because it is provably untrue.

[00:30:42] LFJ: Yeah, that is definitely for sure that we have to get past elitism. We have to think about as these professionals have been doing for decades. How do we support our solutions for decades? Like there definitely is a lot of, “Oh, we're just going to throw that out, because it's going to be gone in six months anyways. Who cares?” And paying attention to total cost of operations and ownership is super important.

But conversely, I think the reason why a lot of people are adopting these kind of top down digital transformation initiatives is because they recognize that they've been scaling too far on to the reliability at all costs angle and not enough on the innovation. And they are being innovated by smaller companies, right? Like I think that there is a tradeoff that people are figuring out how to navigate, if that makes sense.

[00:31:30] CQ: Yeah. And it's always about tradeoffs. And there's always context. And it's easy for me to sit here in the chair of thought leadership, which I have invented, purchased and sanded down myself and say how things should be in the general sense, because I have opinions about that. And I'm usually more right than I am wrong. But all of that goes out the window when you're talking about specifics in a specific company, in a specific technological situation, in a specific business situation, because there's always going to be specific context to which the general guidance breaks down. And when I rail vehemently against something like building multicloud, it should not be a best practice. People are surprised when I talk to them and say, “Yeah, multicloud in your case, makes sense.” “Wait, why do you say that?” “Well, because you've clearly thought about this more than I have in the general sense in a way that applies to your specific situation.”

So yeah, given what you're doing, and for what you're doing, I don't have a baseline assumption that it's the right thing. So let's dive in and figure out why. And that sometimes catches people by surprise. And I wish that there were a better way for me to be more nuanced about this. In that, yes, there are always going to be specific situations that don't conform to the general advice, or we'd all look the same.

[00:32:42] LFJ: With that being said, I think that a lot of teams focus too much on the how and not enough on the why. And if we take a step back first, before we do anything, and we try to understand what's the problem that I'm solving? Is this the most efficient way of doing so? We might come to different answers. Then, for instance, either sticking with we're doing it the way things always been, or conversely adopting the shiniest newest thing, because that's clearly what's right. But there's this middle ground of figuring out what's the least painful way to get what we want, what the business wants.

[00:33:16] CQ: That's the big question is what does the business wants while also making tradeoffs that are ideally not going to constrain them in a future sense. But let's talk about that specific to the Honeycomb scenario. You were at Google for 11 years, and then you left and went to Honeycomb in the fairly early days where they were on AWS. And years later, Honeycomb is still on AWS. Was there a temptation on your side to, "Well, day one, we're moving you to GCP. For no other reason, then you understood the platform at a deeper level."

[00:33:47] LFJ: There were definitely some technically compelling reasons why GCP might have been better for parts of the workload. But there also was going to be the risk involved and kind of the amount of redoing all the work that would have needed to happen had we decided to execute cloud migration. There was a circumstance in which we were unpleasantly surprised by the way that networking is built within AWS, where there was a real possibility that we might take our toys and go home and go to GCP, right? But without a kick in the pants like that, or let us say that the pain from the network thing was a little bit worse than a kick in the pants. Without a kick in the pants like that, we are not going to move clouds, right? Like AWS was basically doing what we needed to. And there was this inertia.

So I think that if we had had like some kind of significant machine learning workload, or if we haven't been able to solve the issue of the networking costs, those are factors that might have pushed us over to GCP recognizing that both GCP and AWS do a phenomenal job at providing kind of table stakes cloud compute these days, right? And instead, the differentiation is things like where are your other customers? Where are your customers located? Or do you need advanced machine learning technology and to do so efficiently in that scale, in that large shift?" Like those are all factors that may push you towards one side or another.

But when I think of Honeycomb, like you get a swear jar, right? And there are three tokens available to put in the swear jar. And you can only say "when I was at Google…" three times that you're at the company. So far, I think I've only burned two of those. And none of them was on a cloud migration. Tthey were higher priority thing is that I needed to burden my – "When I was at Google, we did things this way, and therefore we should probably do it this way at Honeycomb," right? It's not a universal recipe to say like Google's way is always the right way.

[00:35:35] CQ: And let's be very clear, Google at the current time is 140,000 employees. How many employees does Honeycomb have these days?

[00:35:43] LFJ: We're about 75 employees. At the time we were 25 employees. So yes, very, very small. Yeah.

[00:35:48] CQ: That is significant as far as a company growth goes, let's be very clear. That's not nothing. But the things that also work for a company with 140,000 people and a trillion dollar-ish market cap look very different than things that are appropriate at a much smaller company. And that is context that I think often gets lost. I'm not a big fan of the narrative about, "Oh, well, we are high. We have founders who came out of Google." Great, how much does the company your founding look like Google? Because some of the things that help you thrive in an environment like that make you suck in very small scale.

[00:36:21] LFJ: It's both that, right? Like how big of a company are you building? And who are you selling your product to? I think that if I look at the differentiation and go-to-market strategy between Honeycomb and our competitors, Lightstep, who indeed were founded by two ex-Googlers, you can see that Lightstep went all out early on selling to companies like Lyft, right? Like selling to these kind of unicorn companies with thousands, or tens of thousands, or hundreds of thousands of employees, right? That that was their chosen sales strategy, because they knew that even though they themselves weren't necessarily going to need all the engineering elements of building at Google, they're going to need to build for an audience that was very much like the audience that they were building developer tools for at Google.

[00:37:02] CQ: Oh, absolutely. I think that having the right conversations of who it is that you're trying to talk to and where they are along their various journey is incredibly important. If you start talking to CFOs, like their engineers, it's not going to go well, or vice versa.

[00:37:16] LFJ: Yeah, it helps you walk in those shoes to really have this idea of what's it like doing this person's job? Where are the pain points? How do I make them easier? And yeah, it's just really odd and bizarre thing. Like I think about kind of number of missed opportunities at GCP, and one of the things very think about is GCP had a hard time articulating its value proposition to anyone who hadn't worked at Google before. Like anyone who has worked at Google will tell you that like Google's latency sensitive user-facing network is incredible, right? Like that you cannot get better network performance anywhere else, right? Like when you load google.com, it loads really, really snappily no matter where in the world you are. And there's a reason for that, right? And if you want that level of performance for your customers, and you recognize that every millisecond latency is going to cost you customers, Google Cloud’s network is perfect for you. And Amazon's network for a very, very, very long time was lagging GCP. But Amazon's network was also cheaper byte for byte. And there are kinds of all these tradeoffs where if you don't know who you're talking to or how you can explain the value of what you're selling, if you're not able to do that, then you're not going to win people over on that particular advantage.

[00:38:30] CQ: Yeah. It's a matter of meeting folks where they are. I wouldn't be remiss if I didn't bring this one up, and I would get letters. And Lord knows, when you appear on a podcast, particularly one that isn't yours, you don't really want to get letters for what you say. So there's been a significant meme that will not die, let's put it that way, around people at Google are going to get bored with running Google Cloud and turn it off, because it started with Reader more or less. People loved Google Reader. And Google took it away from us. And there since become this recurring pattern where services that aren't working out from whatever internal metrics they have wind up getting the axe, as opposed to AWS, which never turns anything off ever, in some cases **[inaudible 00:39:13]**. Do you think that that is a viable concern for folks to have?

[00:39:19] LFJ: If you look at Google's business strategy, Google Cloud is a cannot fail effort for Alphabet Inc. The deal with Alphabet Inc. is that they have realized that the advertising cash cow business is slowly dying, and that they need to, in order to preserve their growth, they need to have several tens of billions of dollars per year run rate businesses. And Google Cloud is a very important one of those businesses that needs to be able to pick up the crown once advertising starts to falter.

So I think that's the position that Google is in. Yes, Google can and will cancel individual products that are not faring well, right? But they're not going to cancel the bread and butter compute. They're not going to cancel the differentiating features like Cloud Spanner, right? Like that’s the reason why they're able to attract people away from other clouds like AWS or Microsoft. And it's not as if other clouds don't cancel features too, right? Like Microsoft, I think this week announced they were canceling their blockchain service, right? Like I think that for some of these niche applications, it's reasonable that a company might cancel some of these things. But if you look at the history of Google's enterprise agreements and what Google has done for advertisers for kind of places where people are paying real money, like millions of dollars, Google hasn't really walked away from those kinds of things, right? Like if you have a G Suite contract, like you have a G Suite contract. If you have Google Cloud contract, you have a Google Cloud contract. But if you're a big advertiser, Google is not going to cancel the ad platform manager.

So I think that's the way to look at it, is if you're deciding whether to adopt a service, you may need to do I think a little bit of calculus inside your head of how bad would it look for Google to cancel this? And the answer for rear was it doesn't look that bad for Google, except for in terms of people getting mad on the Internet. But I think that it's very, very different when Google stands to lose billions of dollars if they back out of this market.

[00:41:24] CQ: But by that theory, then how do you square that position with their killing of Google+?

[00:41:30] LFJ: I think that Google+ was never fully advertised as an enterprise feature. Google+ was always marketed as a consumer competitor to Facebook. And in fact, to this day, there is still under active development for Google and G Suite customers an internal version that is designed for companies and workgroups to be able to collaborate on a Google+ like internal social network. That is still sold as part of G Suite. They did not cancel their part. They only cancelled the publicly visible comments.

[00:42:07] CQ: Right. A lot of the pushback I've gotten against that is, “Oh, well, fool. It's clear that they will cancel consumer products all the time, but not enterprise products.” And the inherent challenge there is, again, as someone who does not intimately follow all of the aspects of what Google does and does not do, they both say Google on the front of them. So how do I disambiguate easily as an outsider which ones are the enterprise offerings versus which ones are the consumer offerings? There are some that are very unclear.

[00:42:39] LFJ: Yeah. I think that line has blurred, especially as Google has started offering features like Google One, where customers are paying amounts that rival what G Suite customers are paying, at least for G Suite Professional, right? Like for $10 a month, you can pay for G Suite professional, or you can pay for Google One, right? And I very much happen to think about Google One as a consumer service and G Suite, even G Suite Professional as an enterprise Service. But that line is definitely blurring. I think that it's a thing where if millions, or especially hundreds of millions of dollars are on the line, you can be pretty sure that it's an enterprise commercial product.

[00:43:17] CQ: Yeah. And I suppose that is probably a fair assessment. It’s just I've never been a fan of the story of, “Oh, well, if you had just studied our internal org charts a bit more seriously, it's how would I have had access to those things?”

[00:43:29] LFJ: Yeah, it's understandable from the outside, right? But I think that for any sufficiently large strategic customer or partner of Google, they have visibility into that kind of organizational dynamic, right? It's a situation where the purchasing manager definitely is aware of definitely is considering that sort of thing, even if other people walking down the street are not aware of those things. It's definitely weird for sure. And certainly compared to Amazon never deprecating anything, it’s a very, very different strategy.

[00:43:58] CQ: I would agree. And I have mostly sort of tuned out a lot of people from Google claiming that it's not going to be going away. And even, please don't take this the wrong way, folks like you who used to work at Google, because at some point over 11 years, a lot of that starts to bleed over. Instead, I've been looking for some of the important and right signals. And I've found them, specifically where they have announced deals to provide cloud services to large banks. I believe Deutsche Bank, on a ten-year timeline.

[00:44:27] LFJ: Yeah. Oh, yeah, Deutsche Bank. I know. Yup, I know — that one. Yup.

[00:44:31] CQ: And they've publicly announced a 10 year commitment to provide cloud services there. Okay, I cannot sit here as a serious person and propose even for a second that no one at Deutsche Bank during that entire process start to finish. It just didn't occur to them to ask the questions, "What have you folks turn this off?" It is clear that they are now contractually on the hook to provide services for at least a decade.

[00:44:58] LFJ: Yeah, that was the thing they said, right? Or 100 of millions or billions of dollars at stake here. If the answer is yes, Google is not going to shut it off, right? And the other question is like what would Google do if they shut it off with all that data center space, right? Like it would just be sitting there. If Google is making these huge cap-ex expenditures that are oriented around the growth of Google Cloud.

[00:45:19] CQ: And how are they going to weather the decade long lawsuit that comes out and it becomes a clearest example of never trust Google for anything? It would be the kiss of death reputationally, if nothing else.

[00:45:29] LFJ: Yeah, Google can definitely – A subject that we spent, especially in 2014 and 2015, where Google was not just canceling consumer products. They're also committing these very strange violations of user expectations that I am very careful to avoid calling privacy incidents, right? Like there are some violations of user expectations and some kind of sociopathic behavior around ask me again later, right? How many times have you pressed the button asked me again later on a Google property? Like those are the kinds of things where we had to remind the company that there are consequences for the entire company's brand when you pull something like that. And there are consequences that one executive may feel like are the right ones to make for their side of the business, but it doesn't matter. Like the entire company comes crashing down if you have a lack of user trust.

[00:46:14] CQ: Yeah, user trust is one of those things that is easy to gain, easy to lose, and impossible to regain, or close to impossible.

[00:46:21] LFJ: Yes. And then the question is who is the user here? And I would argue, for the purpose of Google Cloud, the user is the CTO or CIO of a company like Deutsche Bank.

[00:46:32] CQ: Yeah. And again, this is also one of those debates that time is going to solve it. And I don't think that it is inherently a terrible decision today to bank on Google Cloud if you're looking for a cloud platform.

[00:46:42] LFJ: And indeed, right? Like the other thing is that there are other situations where a company would be suicidal, like financially suicidal if they went with Amazon, right? If you are Walmart, you are not going to put your compute on Amazon, right? Like even if you think there is a risk that Google Cloud is going to close up shop one day, you still strategically know that it is better to get Google Cloud your money for the next five or 10 years. And maybe you have to move cloud providers in 10 years than it is to go with Amazon.

[00:47:11] CQ: Yeah, you generally don't want to fund your biggest existential threat.

[00:47:15] LFJ: Exactly, exactly.

[00:47:17] CQ: So it sounds like you are in a position where AWS is a very reasonable cloud choice, and GCP is a very reasonable cloud choice.

[00:47:25] LFJ: And until recently, Google Cloud was the greenest cloud. And that is no longer going to be the case, right? That Amazon has closed a lot of these sustainability gaps, right? But yes, there are a lot of tradeoffs involved. And Google Cloud is a competitive choice. It's viable. And it is the best cloud for certain workloads.

[00:47:46] CQ: I would agree with that. So it sounds like you are saying that there's no wrong decision if someone who's evaluating between those two for most use cases, strategic competitive concerns notwithstanding.

[00:47:56] LFJ: Yes, I would definitely say so.

[00:47:58] CQ: And I think that that is probably where a good enough place is I need to leave it. Liz, thank you so much for taking the time to talk through this with me. If people want to reach out with, well, actually obnoxious opinions, where can they find you?

[00:48:10] LFJ: They can find me at dev **[inaudible 00:48:11]** if they want to give me obnoxious opinions. But I'm located @lizthegrey on Twitter, on Lizthegrey.com. And I also am available to meet with people if you go to hny.co/liz. That's hny.co/liz.

[00:48:27] CQ: Fantastic. And we will of course hope that that makes it into the show notes. This ends today's tour of the cloud. If you've enjoyed this podcast, please follow me on Twitter @quinnypig, and head on over to lastweekinaws.com and subscribe to hear more nonsense from me on my podcasts, the AWS Morning Brief, and Screaming in the Cloud. And of course, the newsletter, Last Week in AWS.

[END]