POD OF JAKE
#89 – AVICHAL GARG
AI-GENERATED TRANSCRIPT

Jake 02:18
Thank you V. Joe, for joining me on the podcast today. I appreciate you taking the time and have been looking forward to this conversation. You are a angel investor, serial entrepreneur and currently co founder and managing partner at electric capital early stage venture firm focused on crypto primarily, but would love for those who aren't familiar with you or electric, if you could just sort of start off by telling your story and ideally sort of as early as you're willing to start. It's always interesting.

Avichal Garg 02:46
Awesome. Good to be here. Jake. Thanks for having me. Um, yeah, as you mentioned, I'm co founder managing partner at electric capital these days. We invest in early stage crypto. My backstory, though, is well actually going all the way back to the beginning. I was born in India moved to the US when I was a kid when my parents obviously, when I was about five. So I grew up mostly in the US kind of all over Kentucky, Ohio, and then came to California for college. And then stuck around and then spent most of my career as an entrepreneur, and was always interested in computers. When I was a little kid, I was fortunate my my parents didn't have a lot of money. But one of the things we my dad did a good job of was a they got me a computer, this is like 90s. And so you know, they're pretty terrible. But I got an old computer and I kind of learned how to tinker with it. And then I got a graphing calculator and learn how to program that thing. And so I was sort of always interested in just playing with computers and programming. And then built a start up when I was in college and scale that up later after after college and sold it and then started another company that my co founder Curtis and I sold to Facebook, back in 2012. And then was their Facebook from 2012 to 2016. So almost almost about five years. And and then we kind of laughed. And I'd started dabbling in Angel investing, as you mentioned, starting in like 2013 2014 2015, somewhere in there. And a lot of kind of like up the middle. Like SAS and marketplaces and fintech kind of companies, many of which have gone on to do quite well. So things like notion or deal, great companies. And I was also doing a lot of Frontier tech. So just things where advances in engineering or technology let you do a thing that you couldn't do before. So this was things like genomics or self driving cars or supersonic airplanes. And in crypto was one of those areas. And so we were dabbling in that for a few years. Curtis and I were and when we left in 2016 we kind of found ourselves spending all of our time in crypto, you know, it just sort of felt to us, like the most raw part of the internet. And it reminded us a lot of when we were much younger, our kids sort of like the magic of the internet, where you could go into some chat room, and, you know, nobody knew how old you are, it was just a handle. And you could have these discussions with

people all over the world and felt like a lot of promise, you know, it kind of felt like, you know, the Internet was gonna democratize access to information and education. And you know, we could all work at home and the best and brightest people in the world would have access to all these great resources. And, you know, we don't have this global economy. And like all this great stuff, some of which actually happened in you know, was accelerated by COVID. But some of it didn't happen, like, we ended up with these massive centralized entities that control so much of the internet and have so much money and power and influence. And the tools have been used for things I think that that weren't originally anticipated, you know, in the early days of the internet. And so to us, it sort of felt like this combination of that same raw energy, but also this desire to maybe like, reclaim what the internet was supposed to be about. And we kind of just loved that ethos. And so we were just hanging out in all these chat rooms and having fun with it through 2017. And then in 2018, we decided to formalize a lot of what we were doing into a firm called Electric capital. And the thinking was, you know, we thought we would go start another company, we thought we'd do another startup. And what we realized was that, you know, we were doing all this investing, we could help a lot of people because we build and ship products and scale them. And that was actually a lot of where we're just spending time with the founders is helping them think about how to build stuff and ship products and think about product strategy, and a lot of the mechanics of how you actually do the actual startup with the protocol. And we said, you know, be great to be able to do this at scale, it'd be great to be able to hire a team of people, to support these founders to be able to support these protocols. You know, at the time, a lot of the discussion was around layer one. And so we were like, it'd be great to be able hire some engineers and run some staking nodes and be able to stake and help secure the networks. And to do that, it'd be nice to have, you know, some sort of capital base to do it. So that's how much it was born. And it was a small fund in 2018. And we've since scaled it up to, you know, a couple billion in assets at this point. So we're a little bit bigger than we were even just three years ago. But if that's crypto crypto grows and scales quickly. So that's, that's kind of us.

Jake 07:24
Awesome. Well, I appreciate the story to start out. And looking forward to digging into a couple of pieces there. One thing that I thought was particularly interesting, you mentioned sort of yourself and your co founder Curtis, thinking that, you know, seeing in crypto, something similar to what you saw, you know, earlier on growing up and like the original Internet and sort of the the future and the promise of it, and the ability to sort of

democratize access, and things like education, all the things that you said earlier, but like you mentioned that that's not really the way that it played out, at least not in a lot of ways. And, you know, you have a pretty unique perspective, having worked for two of the the largest centralized players that sort of won this first iteration of the internet, if you will, Google and Facebook respectively. So what's your sort of evaluation? Like, you know, after the fact, like, what happened to that future? And, you know, how do you think crypto is poised to maybe capture some of what what you envisioned in the first place?

Avichal Garg 08:23
Yeah, it's a really good question. You know, like, how do we end up with these big centralized powers? I think part of it is that, you know, state, like the internet was these stateless transactions. And so the data that you needed to preserve state had to be captured in a database. And so this is, you know, like, who are your friends, for example, and that database is proprietary. And so then the best business model may became, how do you get all the data into one place and own that data and then monetize it. And that might be through selling access to it or, you know, by building algorithms on top of it. That, in effect, became the business model of the internet as a sort of side effect of what was possible, technically. And so when we think about web three, I think what's really interesting is the idea that you have sort of shared state, like the blockchain is an open, publicly available database with a set of API's and sort of standardized data formats, allows you to have the database get opened up, and potentially behave more like a public good, such that that data doesn't serve as a moat quite in the same way anymore. Like you have transferability and transportability of that data. So imagine, like if, if you could take your friend graph from Facebook, and just take it with you, and go to some other social network, and maybe that other social network has a different perspective on how to filter the news, or has a different set of algorithms for the news feed, and all of a sudden, you would get a huge amount of competition that could happen on top of that data, and people would have to compete at that layer. And generally speaking, I tend to think that when you have a lot of competition, you get better goods and products and services. And so you might actually have what happened, you know, on the internet, but times 10 because all of a sudden, you can enable a new kind of innovation. And so you know, just just that one technical change, I think opening up the data layer, and allowing people to have access to it could potentially be a very, very big unlock in terms of in change in terms of what the business models could be around it, because you sort of eliminate one of the business models. And you know, kind of as a, as an investor, or as an early stage founder, when something like that happens, where you see, you

know, something that was the core of a business, you know, sort of proprietary data, and you sort of flip it on its head, and you say, it's no longer criteria, in fact, it's now open, and anybody can access it, those kinds of platform shifts where like a platform does the opposite of the previous generation of a platform, tend to be very, very disruptive. And so that sort of catches your eye, like your, your spidey sense starts tingling a little bit, as an entrepreneur, who's seen a few things or, as an early stage investor, that that might be really disruptive. And I think when you couple that with the idea of tokens, which allow value and money to be exchanged, you know, 24/7, between people or computers and computers, you know, not just people and people, but you know, people to computers or computers to computers, and create incentive structures around who has access to that data and what you can do with it and how you secure that data. That is really interesting, because that creates an entirely new business model. And so all of a sudden, now, the ability for money to flow, peer to peer, directly tied to the data are directly tied to the movement of information, I think, is a fundamental business model shift. And so now you don't have to have an ads based business, you can actually have something where people can pay directly for some good or service that they want, and in a way that they can't be disintermediated. And so this starts to strike it like really the core of the business models of the internet. And now you might have as a technical architecture that allows you to build products slightly differently, in a way that is potentially very disruptive to the core business model of a web two companies. But also you have the ability to monetize that in a totally different way. And I think that is a killer combination, the fact that you have like a technical architecture that's different. Plus, the ability to monetize it in a different way, is potentially, you know, that's sniffs very disruptive to me. And so when I play that forward, I think, you know, today it starting with layer one and defy, because these sort of, you know, if these tokens are some form of value exchange and some form of money, in some sense, not for a strict definition of money, but value exchange, it makes sense that people wouldn't build protocols to move that money around. But I think when you play this forward, the primitives that we're creating around decentralized computation, and decentralized data storage, open access to the data, the ability to pay people for access, to compute, or data, and to do it in very small increments in real time, 24/7, all of those basic primitives to me actually sniff like over the next decade, we reinvent big chunks of the internet, and we reinvent them, we reinvent them in this different way, we're actually your data is not seized and captured by a third party. And because the data can be seized and captured, and is effect default portable, you might get a very different sort of topology that that, you know, emerges, like in who has power in that ecosystem might might look very, very

different. And so what that could mean, for example, is you could own all your own data on a Secure Enclave on your phone, and then choose which social networking application you want to have, have access to your data. And maybe they even have to pay you for it, right? Because they're gonna monetize that somehow. And so there can even be new forms of monetization for the end user that are actually even more beneficial. So anyway, we're in the very early innings of this, but that's how we sort of think that at a high level was like, you know, it sort of were engineers. So we sort of approached it from that technical lens of like, oh, this is a different way to build, you know, the architecture of how to build an application, but actually that that infrastructure can be very, very disruptive over the next 10 years.

Jake 13:39
Right. So we're going to spend some time of course, talking about crypto and how it can be so potentially disruptive. But before we get there, we'd like to spend a little more time on the potentially disrupted so especially the companies that you've got experience with Google and Facebook, of course, you know, they could make various adjustments to their business model or, you know, change your focus, of course, like, you know, Facebook, focusing on the metaverse now changing the name of their company. But having been inside both those organizations, I think Facebook more recently than Google, and even, you know, interacted understand, like directly with people like Larry and Sergey and, and Zuckerberg at Facebook, as well as a bunch of other people in sort of leadership positions there. How do you think they're going to react? I know it's a little bit speculative, but like, are these companies sort of dead in the water? Or is there a chance that Facebook actually does sort of win out, for example, like the metaverse that people are sort of waiting for and envisioning that hadn't seemed to arrive yet, but it seems to be gaining some steam lately. How do you see these these tech titan companies like Fang companies sort of surviving or otherwise and sort of this crypto rise?

Avichal Garg 14:47
It's a really good question. And of course, nobody really knows the answer. I think if you look at history and technology history, it's rare that a company is able to make a transition through a platform like this more often than not, companies that were really big on the prior platform tend to miss the next platform. So classic example might be something like Microsoft and mobile, or Intel and mobile computing, right, they really missed the boat relative to arm or Qualcomm. And in part, I think it's because when you see something that is disruptive, often what's happening. And we throw that term around a lot in tech, but often what's happening is you have something that in the early days looks inferior to what you're currently doing. But

actually, it does meet some real need. And that needs starts as a niche market. And then it grows tremendously and very quickly and growth far more quickly than anybody has had anticipated, to a point where it is a meaningful market. But by that point, it's a little too late, because the incumbents have built up their entire businesses and sort of the prior market. And switching that to a new market, it can be often very, very challenging. And not just from like a technology perspective, but really, from a human perspective. You know, like, when a platform changes, you also have to change how your business works, and how your organization works around that technology. So to use a concrete example, you know, like Walmart has known that Amazon is just on a tear for like, 30 years now. Right? So Amazon is not a young company is that 30 year old company at this point, that's that's kind of like when Amazon was getting started in. So where are we? We're in 2021. Right? So yeah, it's like a 27 year old company. So it's something like, when Amazon was getting started, you know, there were companies that were started in, like 1967. That's like the equivalent, right to just put it in, which is wild. And so, you know, Walmart has known that this company is on is on a tear for the last 30 years. And Walmart has known that it's on a tear for 30 years, and like, why haven't they been able to do something about it meaningfully? And in my opinion, the reason is that changing the human organization around the technology is really, really hard, right at Walmart, who has all the power, it's like the people who have the retail relationships and the people who have, you know, the relationships with Procter and Gamble, and they understand how the supply chain works. Like that's who has a power in an Amazon who has all the power, it's the engineers. So is Walmart able to disrupt its organization internally, such that the engineers have all the power, right, that's actually really hard. And so often, the human organization changing is the hard part. And that's why when technology companies experienced a platform shift, like figuring out how to change your human organization ends up being very hard. Now, I think the one exception to this rule are founder led companies, because founder led companies tend to have moral authority, like the founder has moral authority inside the organization. And so the founder can just say, No, we're not doing that anymore. And now the company is going to do this. And if the reason is why the answer is because I think it's the right thing to do. And so for example, if you look at Facebook, you know, Facebook started as a desktop web company, and even by about 2012, around the time of the IPO, a very small percentage of Facebook's revenue came from mobile. And what what Mark did was he basically pivoted the entire company and said, we are now a mobile first company. And we can enforce that was really interesting. He would do things like this is not the only thing he did, you know, had to retool the organization and build a bunch of engineering capacity and teach designers

how to be mobile first, and so on. But you know, there's there's several things that he could do that really enforced it top down. So for example, if you went into a meeting with Mark, and you showed him any mock ups, if you showed him desktop mock ups, the meeting was instantly over. Right? It was it was that was it meetings done during like every leaf. And so all of a sudden, like you just didn't show desktop mock ups anymore, right? And then if you didn't show them in a meeting with Mark, like, why would you show them in a meeting with a VPS? Because you're not going to go to Mark anyway. Right. And so all of a sudden, you could pivot the company very quickly to to mobile, and so the company was able to transform itself. So I wouldn't rule out Facebook. And in fact, I think a lot of people have lost a lot of money betting against or maybe not made as much money they could have, you know, betting against luck. And so I tend to think like, you probably don't want to, there's like a handful of people, you really don't want to bet against Elon Musk, Jeff Bezos, Mark Zuckerberg, if you bet against them, you probably lose. So I think Mehta is maybe one of the few companies that might be able to pull it off just because Mark wants it badly enough, which I think is really impressive that he's as motivated as he is, you know, this many years into him having built this company. Now, does that necessarily mean that metas version of the metaverse will emerge? Not necessarily, right. I think there are, you know, at least two competing worldviews for how this is going to happen. I think there's a step function worldview, which is something like what you know, Oculus is envisioning. You have sort of a headset that you're gonna wear, there's gonna be VR, it's a whole new computing platform. You know, there's presence. Maybe NF T's and crypto get baked into that somehow, or you might have native cryptocurrencies to enable transactions. We have NF T's that are part of this whole ecosystem. But it's really like the compute platform shift through VR, that I think a meta is really pushing and I think there's a slightly different worldview, which is the one that I tend to subscribe to, which is, we're already in the metaverse, we just don't have something strapped to our heads yet, like you just think about where you spend most of your day as, as a member of the internet these days, it's probably online. And you'd like to sleep for seven or eight hours a day. And you're probably online for like 12 hours a day. So you're actually probably spending more time in the metaverse than you are awake, right when you take out sleeping. So, you know, I think we're already in the metaverse and then we're sort of incrementally moving our way towards that sort of just getting enmeshed in our lives and that the compute, you know, the window, the screen that we look at that Metaverse through is going to be the less interesting part of that transformation. Right? So it doesn't matter if it's a laptop or a mobile phone, or something strapped to your head. That that is that is the less interesting part of it. The more interesting part is all the cultural

and social dynamics that are happening around things like cryptocurrencies or NF T's are communities on the internet, or Dows. All of those things are really what are going to define what the metaverse looks like. And that's happening today anyway. And in that world, certainly, I think meta could play an important role or Google could play an important role or Netflix could play an important role. But I think they end up playing not the defining role. Like I think the crypto native companies end up being the defining companies, in the same way that you know, Microsoft was an important company on the internet, and they become more important with things like Azure, but they're, I wouldn't, I wouldn't suggest that they're the most important company on the internet. But you know, time will tell right, you know, I think if I were to play the other side of it, what would what would Facebook? Or what would matter? Or what would mark say about it? Well, you know, Apple was able to transform itself, apple became perhaps the most important company, because they transferred the transition the world of mobile, and they made that happen after being, you know, a very major player in the PC revolution. And they were able to do that, in part because Steve Jobs was there. So again, kind of this idea of founder led companies, because founders have moral authority can sometimes make these transitions. It's rare, but if anybody's going to pull it off, it's going to be a founder led company. So, you know, it's certainly possible that I think Mehta pull something off, and they do what Apple did in the last platform shift.

Jake 22:08
Yeah, it's a really interesting perspective. I definitely agree with sort of the founder point, especially a guy's like, you know, Steve, jobs suck, sort of generational type of founders, not just like any founder. And sort of it does sort of help, I think, to see that ZOC TierPoint already transitioned Facebook to a mostly mobile company. Instagram, I think is, I don't know if it's like the majority of the volume of of sort of their value the or not volume, but the majority piece of their value these days, but at the very least, it's a large piece that they've sort of reinvented themselves a couple of times, and certainly said something that this time is the first time that they've actually changed their company name about it. And like, No, you know, they're they're not hiding anything. They call themselves meta, everyone's talking about the metaverse like a pretty clear direction that they're setting for themselves. So it'll be interesting to see. Speaking more on like, you know, he's talking about a couple of like, really impressive people now that you've worked with in the past Duckburg being one of them. I mentioned Larry and Sergey earlier, from your earlier experience at Google, I think you were like directly with Marissa Mayer as well. Maybe with Sheryl Sandberg a little bit of Facebook, just sort of the sheer exposure that

you've had to these, like extraordinary tech leaders, and generally like entrepreneurs and leaders. What was like? What did you learn from all that exposure? Like, what were some similarities you saw between people like this? Some differences, like outstanding features, that maybe Zuck had something about him, like you didn't really see in Larry and Sergey or something like that? I'm just curious, because not a lot of people have that sort of exposure over their career.

Avichal Garg 23:44
Yeah, it's been pretty well, it's I'm very, very fortunate to have had access to all those people. It's just one of those like, Right place, right time thing. So it's just like, Google was the first place I worked. And it turned out, being at Google in the mid 2000s, mid to late 2000s, kind of like that 2005 to 2010 era was an amazing time to be there. Because the organization was still so small. And it was when I joined it was like 3000 people. And so yeah, my first manager was Marissa Meyer, who's gone on to do amazing things. And, you know, you had access to Larry and Sergey and Eric. And Sundar was just was not CEO of Google yet. Sundar was just this senior pm that you sat next to on the couch while you were waiting for Marissa, you know, is a wild time. And, and same thing with Facebook, right? It's just like all these leaders there were, they were not sort of who they are today. I think, you know, having had the good fortune to have seen a lot of that. I think probably my biggest takeaway actually is that most of these people that you know from arm's length look superhuman are actually not and I don't mean that in any sort of derisive way. It's I you know, I think it's remarkable what all these people have accomplished and you know, what their skill sets are and how talented they are. So it's not intended as a slight against them in the least But I think what I realized was I've met a lot of people in my life that are of that caliber. And one of the big unlocks for all of these people was that they had the good fortune to find something that they really believed in, and have people who supported them early and get a little bit of luck flowing their way. And the combination of those things created this feedback loop where they had, you know, increasing amounts of success. And they believed that they could be successful. And they believed that they could accomplish great things, and they had people around them who believe they could accomplish great things. And that actually is a really, really big unlock. And I think when you look at a lot of other people that, you know, like, as an angel investor have invested in, and you kind of look at who they were, when they started and who they become, by the time everybody learns about their billion or 5 billion or $10 billion company, it was a really impressive who they became, but they didn't start as that person. And so one of my biggest takeaways from having worked with all these amazing people, is

that the amount of human potential in the world, we're probably only tapping, like 1% of the human potential in the world, because most people are actually capable of a lot more than they think they're capable of. And, and what they need is just to believe that, and then what they need is some people around them that believe that, and then you do need access to certain resources, like, you know, a good education and capital, and a little bit of luck. But it's actually really inspiring, because I think you realize that it's not like the Elon Musk's of the world are somehow, you know, rare breeds, it's actually that like, we could have 1000, more people like that very easily. And then we could have like millions of people who are, you know, doing remarkable things in the world, if only we had systems that created those kinds of people, right? If only we had systems where people actually got great educations, and could get access to capital. And there were enough people who believed in other people, and you had enough people who believe in themselves, and so that that actually takes you to this place of realizing that actually, not a huge amount of capital is necessary. And actually, most of the world's potential is actually untapped right now. And then actually, we could have, you know, 1000, more great leaders like that, or we could have millions of more entrepreneurs, and actually, the world could support all of that, because actually, probably, the number of opportunities that are unperceived, right now is in the millions, like there are probably millions and millions of great ideas, that that we just haven't had the founders go pursue yet. So anyway, you know, I don't know if that's what everybody would take away from that necessarily, or what you were intending, but like, my biggest takeaway was actually, these people are remarkable. But actually, I think we could have, you know, we've probably only created 1% of the remarkable people in the world that we should have created, like, we actually should create 100x More remarkable people. And if we could figure out how to unlock all that we'd actually unlock a lot of human potential, and we would accomplish great things. You know, like, imagine if there were 1000, SpaceX caliber companies or, you know, 1000 people working on, you know, scientific researcher, 1000 extra people, you know, trying to solve clean energy problems, or, you know, just like the amount of amazing things that we could do, I think would, you know, we just, we just haven't figured out how to do that yet. It's actually one of the reasons I, I feel like, I find a great deal of satisfaction, doing what I do is like, in effect, the way I think about my job is finding these people who have so much potential, that they don't even realize how much potential they have, and giving them just a little bit of money, and a little bit of advice, and a little bit of support along the way, in hopes of unlocking all that potential. And it happens. And it's remarkable to see when it happens, I mean, look at somebody like Blake Shoal, who's founder and CEO at boom, supersonic, and they're building a

supersonic airplane. And Blake is an old friend of mine. And it's just remarkable to see how far he's come in last few years. And I think, you know, five or 10 years from now, people are going to be talking about Blake as like the next Elon, because, you know, willed supersonic flight into existence as a founder. And I know Blake, and I think he's a great example of that Blake is a very smart guy. He just, you know, if you look at his prior track record, you know, he struggled with his previous company, because he had a sort of mobile ecommerce shopping app. And it just wasn't the thing that he was put on earth to do. And when he found the thing that he truly, truly believed in, he just moved mountains to make that company exist. And you know, I think is going to change the course of human history as a result. And I think it's like a fascinating case study and how much untapped entrepreneurial energy and potential there is in the world.

Jake 29:36
Yeah, it's a super interesting takeaway. I don't know if that's to your point, like you said, you know, if that's what most people would take away, but I think that's like a super, like layer zero, I guess you could say I'm borrowing that term from like crypto or they say it's like, what's under the layer one of like Bitcoins, sort of like the people I think that's like a very layer zero perspective that that you gave on sort of some of the commonalities between these sort of legend that you worked alongside was sorted before they were legends in a way. And I think it is extremely hopeful and like optimistic the point that you make. It's really like sort of remarkable how these people you know they do, from the outside looking in, they do just look like superhuman, especially like someone like Zack. But you know, he still has 24 hours in the day, Elon Musk still has like 24 hours in the day, and they just have to figure out how to make things work. And there's presumably, like you said, like, just a ton of belief behind it. And so some luck and some smarts, and maybe maybe a lot of both, but either way, it sort of makes it happen. I'm going to ask you like, somewhat of an impossible question to answer maybe, but I'd like to sort of hear where you might go with it. You did, I think that the startup that you spent the most time working on, I believe, was education focused with online learning. And that, you know, seemingly would have to have some sort of would say, play some sort of role in helping that, you know, 10x 100x 1,000x million X people realize the potential that they're capable of, but they just, for whatever reason, can't really fulfill at this point, what do you think could be an element or to have the solution to sort of untap some of that human potential to go from maybe 1% to even just 5%? Or 10%?

Avichal Garg 31:21

Yeah, it's a good question. So for context, this the startup that I started, the idea was to use machine learning and really basic techniques, statistical techniques, to personalize content delivery, for education. And it's actually quite effective. I mean, all, you know, in v1, all we really did was we could assess very quickly the things that you knew already, and then just not bore you by removing that content. So like, if you already know how to add, we don't need to show you a bunch of content on how to add, let's like, move you on to subtraction. And if you already know, addition and subtraction, let's just move on to multiplication. And it turns out, just like doing that makes people way more engaged, because now you're not boring them with stuff that they already know. So that was like the high level insight.

Jake 32:07
Same time, you're not challenging them so badly that like they can't do the thing. And it's just like they sort of quit, right?

Avichal Garg 32:15
Yeah, that's right. Yeah. And so and so there's a whole like set of other, you know, how do you make it actually personalized? How do you like challenge them in the right ways, and like, you can get increasingly sophisticated on these things. But it turned out just like doing some really basic stuff had had like pretty significant improvements. But at the end of it, what we realized was, no matter how good we made the software, we were not going to be able to solve the systemic problem around the delivery of the software, which is to say that, so much of what happens, we were sort of really targeting us k to 12 education, and really focus more on like eight to 12. So eighth grade to 12th grade. So much of what happens in the US public education system has misaligned incentives around the software that no matter how good your software is, you're not going to be able to fix some of the fundamental problems. Now, some of those problems are societal problems, you know, like, what do you do in a situation where you have a disadvantaged community, and both parents have to work. And so the oldest sibling has to take care of the two youngest siblings after school, like does that does that kid does that 13 year old that needs to take care of the, you know, the nine year old, and and the seven year old when they come home from elementary school and make sure they get home and get fed? And then, you know, does that person have time to do their homework? Do they have time for extracurriculars? Do they have time to read and study? You know, so there are definitely like structural societal problems. And those are very, very challenging. And then the other big sort of challenging problems around the software is just the incentive structures in schools. And and what do we ask of the different constituencies? And who has an incentive to try new things

and try new models and take risks? And how do we reward that? And it turns out in the American school system, one of the biggest challenges is that there is not an incentive structure to take risk and to try new things. Because if you try new things, and they don't work, often you get punished. Right? You're You're, you're not really rewarded for it. Like if you do a way better job as a teacher, and you have, you know, a 2x improvement, like, do you really get paid more? Do you really get rewarded in a meaningful way? Do you get accolades publicly? You know, like, the incentive structures just don't reward, reward that and there are massive incentive structures for for disrupting the status quo. And so you can't have a system where the ecosystem around the student is not really setting them up to be able to fix the fundamental problems. And what you have is a system that was really designed in like the industrial revolution to, you know, to produce certain kinds of workers. And that's not the ecosystem that we live in anymore. And so this then I think, comes to like a philosophical question of do you try to reform the system from inside or do you try to say, you know, what the system Is it can't be reformed, and we just need to go outside the system. And after many years of trying, I came to the conclusion that actually trying to reform the system from the inside was just too slow. Like, it just was not going to happen. There are too many entrenched interests in that everything from how, you know, funding works for public schools, to how teachers are compensated to, you know, what the incentive structures are for trying new things like just all the way down to the incentive structures are misaligned, to actually try new things and take big risks and, and see, you know, big change, it's a really the way to succeed is to sort of circumvent the system to circumvent the system altogether. So for example, I think things like, lambda school, very interesting, right, let's just like sidestep the entire system, things like Y Combinator, right, instead of going to grad school, we'll give you some money, and you can just tinker with it, and you effectively get a PhD in the thing you're tinkering on, except you got paid to do it, instead of having to, like struggle through and paid it, you know, pay to do it. Or, you know, what Peter Thiel is doing with, with the teal fellowship, I think most people don't realize, but Vitalik was a teal fellow. And so he came up with Aetherium as a teal fellow, or Dylan Feld, who started figma, which is a $10 billion company. You know, and so you can have like, pretty dramatic influence, if you sort of like, sidestep the system, I think. And so I've come to believe actually, what we need to do is have a lot of experiments happening outside the normal K to 12 education system. And, and in many of those cases, actually, if you could have alternative means of making the business model work, it doesn't even have to be a great business model, it can just sort of be a break even one or you know, as Thiel is doing, he can be philanthropic, like he didn't make any money off of figma, or, or a

theorem. But actually, like, it doesn't take a lot of dollars to do it, what we what we really need is experimentation happening. But that experimentation likely needs to happen outside of the K to 12 boundaries for us to really see meaningful breakthroughs. Because the system itself is just so entrenched in so many ways, that until we sort of move outside the system, we're not actually gonna be able to experiment in any meaningful way.

Jake 37:00
Yeah, I think, first of all, a really interesting perspective. But I think the teal fellowship in particular is sort of a point that, that supports what you're saying earlier about, like the the extreme level of potential that might be out there on top, it could be that we're only tapping 1%, just by the fact that he invested in like 20 or 25 people a year. And, you know, for so many for not that many years, and resulted in people like metallic and Dylan and Laura Demming, and many more, it's just like, sort of hard to believe until you consider the fact that like, maybe they were tapping into this other thing, where they're just happening a whole lot more of the potential that exists out there by smart people in the world. By giving them a little bit of money and a little bit of support to sort of believe that they can do more than they might have thought previously. We'd be remiss not to cover crypto, I know we've spent a lot of time on some other things, but it was really interesting stuff. But I do want to talk about crypto a little bit what you're focused on mostly today with electric. There's a couple of questions that I sort of came in with, I particularly wanted to run by you just given listening to you on other podcasts and reading some of what you've written about. And I think the first thing that's an interesting perspective that I've considered, but haven't heard a whole lot about anywhere else is this concept that like we could potentially be in like a MySpace era of crypto, where everyone's talking about like, Oh, it's too late, even in like 2017 2018 people are saying like, Oh, it's too late, after that whole hype cycle, or in the middle of it or whatever. And now a lot of the same people, you know, a lot of people are saying, Oh, it's sort of like to lay like, you can't get the 100,000x or 10,000x or even 1,000x Bitcoin anymore. And same with Aetherium. Maybe. But it seems not totally out of the question to me that it could be too early, that Bitcoin or Aetherium, or whatever sort of is dominating today could be my space, and we're sort of yet to see the Facebook of sort of the crypto era is that maybe I'm sort of putting words in your mouth? And I certainly don't mean to, but what are your thoughts on that? And sort of in terms of like the timing of where we are in the lifespan of crypto?

Avichal Garg 39:11

Yeah, all good thoughts. Um, you know, another another way to think about it that I'm sort of talking about more recently, too, is, if you just look at the numbers, I think Coinbase at their last earnings call had something like 65 million users. That's that's accounts that's not like monthly actives. And Facebook has something like 3 billion monthly fees. You know, so you're just talking to totally literally, you're talking two orders of magnitude difference, which means we're something like one or 2% of the way there. And that's like really hard, I think, for most people to get their heads around. Because I think humans, you know, we're not really wired for exponential growth. Like intuitively, we don't understand exponential growth, because we're biological, macro biological entities. And you don't really experience exponential growth at the macro biological scale, like you do with the bacteria or the virus scale. But the example I was uses like You don't go to sleep one day, and then you wake up tomorrow. And there's just like a giant tree outside your window. That was a seed yesterday, right? Like, you just don't experience exponential growth as a biological entity. And so our brains are not set up for that. And not only our brains are not set up for exponential growth. Intuitively, we also are really bad at large numbers. You know, like, as primates we can, we can, like, tell the difference really fast between like two and four, or like to an eight, but like a pile of 123 versus a pile of like, 400. We're kind of badass. That's why you have those like jelly bean in the jar guessing games, right? Because like, as monkeys, we're just like, bad at guessing beyond like 50. Not only that, but we're bad at low probability events, like our brains are wired or not wired to handle this properly, right. So what's an example? Like people worry about plane crashes, and they don't worry about driving their car, when statistically, you're way more likely to get hurt in your car than you are on a plane, right? Like, we're just low probabilities. So you take these three things together, and you say, we're bad at exponential growth. Our brains are bad at large numbers. And our brains are bad at low probability events. And it turns out these early stage markets, like startup technology markets are the intersection of all those three things, right. They're low probability events of success, with like, really large markets when you're talking about enormous numbers like in the trillions of dollars, and it's all about exponential growth. And so in general, I think our intuitions about about real estate markets are just really bad. And you have to like unlearn a bunch of what things feel like intuitive and actually, like, do the counterintuitive thing a lot of times, and so, whereas it feels like we may be, you know, we're 10 years into this, you know, 13 years into this crypto ecosystem, and, you know, like several years into Aetherium, and like, look at all this stuff that's happened, I suspect, we're really under estimating how big these things are gonna get. I think we're really under estimating how

large these ecosystems are going to get and how much they're going to matter. You know, another way to think about it is like, we have a tendency to look back at history and say, Oh, that was exponential. When you look at the growth of the internet, you're like, Wow, that was exponential. That's crazy. And when you project forward, you project forward linearly. And this is always a mistake that people have made for the last 20 3040 years of technology, like, you can see it's exponential behind you, but you're not willing to extrapolate exponentially in front of you, because that just feels ludicrous. And so if we were to play that forward, you might end up with crazy math, you might end up with something that says, like, you know, the crypto ecosystem is going to be worth $100 trillion, or $200 trillion. Or that something like, you know, is obviously not financial advice in any capacity or form. But you know, you might look at what you think is going to be a digital store value, something that might be a digital gold. And you might say, well, you know, could it be bigger than gold? Could it be worth 20 trillion? So 10 trillion? Or could it be worth 50 trillion? That seems ludicrous, right? That a thing that's only been around for 20 years, might be worth 5x, more than the market? For thing that's been around for 5000 years? That seems like a ludicrous statement, but it might actually be true. And actually, the history of technology would tell us that actually, probably a lot of that is true, despite how crazy it sounds, probably a lot of those statements are more likely to be true than not. And so then you play that for and you say, Well, if that's true, is the way that we're building stuff today, actually the right way, if only 1% of the way there are 2% of the way there. Is it possible that when we get five or 10% of the way there, we realize that the way we're doing things is just wrong. And actually, we need to change how we're doing them more fundamentally. And I don't think that's out of the question, either. And so it's entirely possible that three or five years from now, you know, when these things are worth 10, or 20, or 30x, more UD Fi is worth a trillion dollars instead of 100 billion or, you know, there's $5 trillion of stable coins, you know, instead of 100 billion would be on Pick, pick whatever metric or usage you want to only pick, is it possible that one were 10 or 20x bigger that all of a sudden you look around and say, I know what, we kind of screwed that up, we should actually do this a different way. And so I think there's a there's actually a pretty significant nonzero chance that that's the case. And then the example people always use is something like MySpace versus Facebook, because people forget that, you know, when Facebook started to really take off MySpace already had 80 million users. So to put that into context, right, Myspace had more users than Coinbase does, at the time where Facebook got started and started to disrupt them. Right, just just to tell you how early we are, right? Like Coinbase, doesn't have as many users as MySpace did. I mean, you know, to be

fair, it's different user definition, right. KYC users on on a financial product versus in people signing for social network is apples to oranges, but but you get the idea, just in terms of like how early we are. And so yeah, I don't think it's out of the question at all. And I think it all comes from this sort of belief that I have that our intuitions around. So many of these things are just so flawed, that whatever your intuition says, you actually want to step back and say, Well, maybe the opposite is true. And in a lot of cases, actually, because of these sort of weird biases that the human brain has, I think, actually the opposite ends up being true.

Jake 44:46
Right, yeah. That's a really interesting take. And I guess I'm curious to take it one step further and understand how you are you know, given this context, how you're, you know, operating as an investor in the crypto space Another analogy, you know, there's like the MySpace Facebook thing, something I've thought about is like, imagine just like a horse race. And if you're 70% of the way through a horse race, and like, you know, one of the horses is twice as far as the next best horse, which is six times as far as the horse behind that that's like, roughly equivalent, like Bitcoin market cap to Aetherium to everything behind it, you know, obviously, like the first horse is going to win that race. And in technology, traditionally, it's been like, because of network effects. There's like a power law distribution, where there's maybe one big winner or a few winners that are degrees of magnitude behind each other or something like this. But if you're 1%, into the race, it doesn't really matter if like, one of the horses is twice as far as the other one. Could be that a horse that hasn't even like, gotten off the starting line yet is the big winner. So how do you think about like, I think a lot of people sort of take for granted Bitcoin they take for granted Aetherium. And they assume like, you know, you said we might rebuild things in a few years, but they assume like everything built now there's sort of, you know, the more that gets built in like, the more the tear to stay, and there'll be projects that fail, but generally, like, we're right on the right path. But what if we are like 1%? As an investor? Like, how do you sort of protect yourself from the possibility that perhaps almost nothing that exists today is going to be like those fundamental big winners? Or do you make exception for like Bitcoin is maybe the the winner of store value, or Aetherium? is the winner of like the the main stock smart contracts? Protocol? How do you think about all that?

Avichal Garg 46:33
Yeah, I love that analogy, by the way, things are good when the horse race one, that's a that's a good, clean way to think about it. I'm saying the way

the way you do it as an investor is you just you have to think probabilistically. Like I think you can't be tribal about it. And I think you can be a maximalist and I think you can't be absolute about these things. And so we have to say is okay, well, what is the what are the likelihood that this thing that's competing with Aetherium? Or that, you know, is competing with some existing defy protocol? What is the probability that this thing might win? Right? Is it 10%? Is it 1% That this new thing wins? Is it point 1%? Like what probabilities it's more than zero, we know that it's not zero in most cases. Again, it's like the history of technology tells us that new new things come in all the time. And, and markets change, right? The type of market participant, the user that is going to be here in five years looks very different from the type of of user that was using defy or using crypto five years ago, right? 2016 versus 2026, users are going to be very different. So you know, entirely possible that that happens. And so it's really a question of what probability to put against it. And then against that probability, you have to look at the market size potential. And you have to say, is the price that I'm paying today for an investment, given the probability of success and the potential size of this as a winner? Does it make sense? Can I actually given those numbers make a case that I might 100x my investment? And if the answer is yes, you probably should consider it, right. And in a venture portfolio, at least, it's a very particular style of investing, right? It's a, it's a particular style of investing, that says, I'm willing to take a bunch of 1% bets, things that might only have a 1% chance of winning, or one to 10% chance of winning. But when I stack enough of them, one of those things will hit. And that thing will 100x. And that will return the entire fund. And if you're good at spotting those kinds of things, you can actually build a track record doing that. And that's, that's essentially what we've done, as angel investors and venture investors now, is you build a track record of year after year doing that, and some of your things do fall apart, and they don't work. And a couple of things really hit and the things that really hit and aggregate more than make up for the things that don't back to your sort of intuition about the power law. And so yeah, you're actually as a venture investor, if you think there's a 1% chance of that thing might work. It's really a question of price, right? Like, if there's, you know, to use an extreme example, there's a 1% chance that the thing might work. And you know, that thing is valued at a million dollars today. But you think it might be, you know, capable of taking a big one because of technical merit, and the team behind it, and who knows, right? Whatever else, or Aetherium, or pick your favorite thing that you think needs to get disrupted, then it might be worth doing right at that valuation, it might be worth doing. So it really ends up being a question of probability and price more than anything else. And then you have to think that way as an

investor, and then you constantly have to be paranoid about how you're the stuff that you do have conviction in is wrong. And so it's sort of this constant mind game of, you know, what do I have conviction in? And how might I be wrong, and then reevaluating all the things that you have conviction in to make sure that you still have conviction in them, and then placing a number of well diversified bets in your portfolio so that any one of them returning the portfolios as possible, but it's it's a whole I mean, it's a very it's a weird, it's a weird industry and a lot of ways because it actually flies in the face of a lot of conventional wisdom about how you should invest because it's a very particular style of investing.

Jake 49:55
Yeah, that's a useful lens, I think to look at it through I tend to look things in terms Like probabilities and potential, myself, just like sort of managing my own little small amount of money, but, but I think given, you know, you're holding other people's money as well, and obviously investing that. And I think it's just, obviously, there's a ton of upside, and a lot of people are doing like really well, but I think it is like really challenging to operate in a space that's so potentially large with so many really interesting projects. And just like a lot, you know, it's moving so quickly, and there's a lot of noise to like, fight through. You know, certainly, again, you know, larger words, but challenging as well. I know, we're coming up on time. So I'll make this the last question. I've heard you talk, like a number of podcasts about how, you know, there's a number of factors that you look for in founders, you know, the team might be great at the technology might be real. But if the token mechanics aren't there, you know, it's not something that you're comfortable investing in. And I want to just like better understand, and hopefully other people can kind of get out understand better understanding as well of like, how you think about looking at token mechanics, and like how coins, can you know, or tokens can sort of accrue value, I think value almost as like a definition has just sort of gotten sort of mixed up with all these crypto projects going on. It's like everything is valuable. Now, it seems even if there's like, if it's just like, totally speculative or whatever, and I'm curious to hear, like, what you think is legit, what you don't think is legit. And if that's too broad a question, maybe you can just like, pick an angle to go at it. But

Avichal Garg 51:34
yeah, it's, um, what's more art than science, all this token economics stuff, it is one of the interesting things, I think in crypto that makes it really fun and intellectually interesting, because you don't know the answers. In a lot of cases, you know, people are constantly inventing new ways to do stuff.

So even the idea of, you know, like, liquidity mining, like putting assets into into a smart contract and getting rewarded for it. And whether you think it was like F coin, or, you know, synthetics that invented this a few years ago, it's a relatively new phenomenon, right. And so what's what's crazy about a lot of this token economics stuff is if you look at how the token economics were set up for projects in 2017, era versus 2019, versus today, it's evolved. And it continues to evolve. And, and people are starting to get very clever about who owns how much and making sure the community owns the vast majority of it. So you're rewarding community participants, you know, think about value capturing the right ways. So it's not just a pure utility token, but there's some sort of value that is accruing back to the token in some form, whether that's a buy and burn mechanic, or, you know, some sort of assets that are sitting in a pool and your LP tokens entitle you to your pro rata share of those. And you can even control with that liquidity goes like people getting really smart about how to use these tokens to sort of try to capture value in interesting ways. And I think there's still a long way to go. You know, I think if you look at, for example, some some early data that's people are playing around with now, about what do people actually do with the tokens that they get through LPs, and you just see that the vast majority of them are sold relatively quickly on market. And so you know, I think, like, for example, what ens did with their AirDrop and giving it to people who had been long term ens supporters, I think, was really smart. Right. And so I think people are starting to get very more sophisticated in sort of how they think about who to reward with tokens. And I think that's where it gets really interesting, because ultimately, the goal of the tokens is to align incentives for the marketplace participants and reward the people who are doing the most work on your behalf in the marketplace. We're still very early days and figuring out what exactly those models are. I mean, I think there will come a day, I don't know, five, maybe 10 years from now, where we'll have seen all of these experiments run in parallel. And we'll have a much better handle on for certain kinds of marketplaces, what are good token models, you know, like, do you want in fact, when you give away 60%, or 70% or 80% of the token supply to the network? You know, what kind of airdrops, you know, work really well, what kind of, you know, inflation rates work really well, you know, who you should give those inflation rewards to? You know, there can be a lot of, I think, open questions at all these, these layer ones, and all these different projects, and all these protocols are sort of experimenting with, but I think it'll probably be another five years before we really start to see long term which of these things works and which ones don't. And why. I think it's fascinating, like, nobody really knows the answers to this yet. And today, we can reason through them. And it's evolving very, very quickly. And it's one of the harder things about being an investor

in the space. It's just like understanding the history of all of these token economic models and what's worked and what hasn't, and why. And then staying on top of all the experimentation that's happening, but I think we'll have a lot of clarity. And if I had to guess, what, a lot of clarity in five years because we'll have, you know, seven or eight years of history and some of these ecosystems, and I think we'll have a lot of clarity in like 10 years, when we see sort of the Cambrian explosion we're seeing today we have enough time for that to play out. And you know, I think what are we really interesting too, is you just like theory and go through this with You know, ERP 1559, and sort of a fee change and gas change, you know how some of these token models can evolve too. And so, you know, if you think a growth model isn't working, can you evolve it towards something that is, and so I think that'll be really interesting to to see which of these models, various communities say, well, that actually feels like what we should do. So let's evolve what we have today to something better, and let's evolve it to that other thing. Because that's better for some reason. So I think all of that is gonna happen in the background too. Like, I don't think these things are static, like just because you picked a token economic model doesn't mean you have to stick with it either. So all that experimentation and sort of convergence I think will happen over the next five to 10 years and it'll be really interesting to see what comes out of that.

Jake 55:39
Yeah, I think the Spark Notes for this last portion of the conversation on crypto has basically been that it's still extremely early. I think I'm on the same page as you seem to be there and for a lot of people it's sort of scary to think back it's already seems pretty big and all over the place but for others like I'm sure you and I it's it's really exciting to watch and thrilled to be a small part of it. Thank you, you know, we can close it there. I know we're running up on time but thank you again IHL for for coming on the show today. I really enjoyed the conversation and looking forward to listening it back myself and sharing it with others but where can people go to follow you and electric and see where all this goes over the years to come?

Avichal Garg 56:22
My pleasure thanks for having me. I'm on electric you just got electric capital calm are pretty easy to find. And for me, I'm probably easiest place is Twitter. So just add a vigil at my first name on on Twitter.