POD OF JAKE
#127 - ARIEL SEIDMAN
AI-GENERATED TRANSCRIPT

Jake 0:10

Thank you, Arielle, for coming on. And joining me on the podcast today, it's great to have you have been looking forward to this conversation for a while. You are the CEO and co founder of Hive mapper, an interesting company that's on a mission to build a new global map of the world. And you're doing so in a very decentralized and sort of incentive aligned manner, with contributors from around the world, driving around their local cities or towns with Dash cams in their cars and doing some other things to sort of help to build this map in a way that hasn't really been done before, and would have been hard to do before crypto. So looking forward to digging into that. But before we get into it and talk about hive mapper, we'd love to hear you know, for those who don't know, you, if you could sort of tell your story from his earliest billing, as you're willing to start to where you are today and talk about some of the decisions you made along the way? Well, thank

Ariel Seidman 1:02

you for having me, this is quite the honor and appreciate it, you've had a lot of other great gas. And so you know, when you reached out, I was definitely like, let's do this. Yeah, so my journey starts way back, when when, really my first job out of school was at Yahoo, it was at a tie in 2005 2006, when Yahoo was still very much competitive with Google, in search. And so I sat in the search division in product management, and was looking after basically all local data, and then Yahoo Maps as well, and really helped grow that from very little to, you know, in maps, I think we got up to like about 80% market share. People don't realize that about 30% of all queries, going into a search engine, have some geo map local dimension to them. And so it's just a huge category of query is that you see every day in a search engine. And so when we were building Yahoo Maps and Yahoo Local Data, we would mostly just licensed data from third parties, right, and you kind of aggregate all these cleanses, improve upon them, where you could with other data, augment them, and then package it up into a UI build algorithms on top of that data. But it really wasn't our own data, to basically roll out Google Streetview. And then other modes of

collection as well, like airplanes and so forth. We saw that their market share started to increase dramatically. And fundamentally, it just came back to like, they had better data. It wasn't UI, it wasn't like other stuff that happened. It was like they were just collecting much higher quality data that was much fresher. And so at the time, we like went to try to get more funding to basically do what they were doing, right? Because we felt like we need to pony up and go collect our own data. I forgot we I think we went in and asked for like $220 million, and a CEO at the time, we came back with like, you know, something like 10 or $15 million. It was like geez, like what he gonna do with this, like map half California, and then call it a day. So that was obviously really frustrating. So I just decided to leave Yahoo, I was very frustrated. But what I did recognize was just like how crazy expensive the approach that Google was taking. And if you could dramatically lower the cost to actually collecting and building this map data that you would then be going after Google's Achilles heel. So the first company I started called gigwalk. was tackling that problem. We ultimately were not super successful. But the basic idea was we had 2 million people, roughly with iPhone and Android devices all over the world collecting data. Many actually Google Maps was a customer of ours, Bing Maps as a customer of ours, Bloomberg, financial, Procter and Gamble. So these companies would basically put tasks into the system. And they will say, we want to collect data about like stop signs, or the price of tomatoes, or what is the end cap at Walmart's and targets look like? Does it have this product? Or is that product? It worked from a certain perspective, but the economics of that business were horrible, because we didn't actually own data. So we were basically just a data collection service. So put that like, you know, that ran its course it was not very successful, like I said, then but I said, okay, like the core problems still exist in the world, which as we have not figured out how to dramatically lower the cost of mapping. And so I started hive mapper in 2015. Initially, we started with drones. And the idea with drones was, you kind of get a two for one, right? You get the aerial perspective. And you also get the street level perspective, because of the angle of the camera on the drill and the fact that they're flying below clouds and they're flying so close to the ground. So that was appealing. It ultimately didn't work. They didn't scale. Why didn't it scale because battery technology and drones never really improved significantly.

That was a big issue. The second issue was government regulation, right? Like every little city was like no drones here. No groans they're like you tried to do that into the world, it wasn't going to work. We were generating some revenue from that business to be clear, things like five or $6 million a year. And we were basically using all that revenue to fund the big pivot for the company, which was, okay, let's do street level mapping through dash cams. At the time, you were using a third party dash cam, this is like, 2018 timeframe. And that worked, right? Like, as an entrepreneur, you kind of figure out like, pretty quickly, you know, is it working? Or is it not working? And if you're intellectually honest about it, you can you can tell. And so we figured out it was working, and we were paying people cash, right. And so there were two issues. One issue, well, there were a lot of issues, but it was even though it was working one was the Dash Cam, was a third party dash cam. And so we couldn't make the experiencing tirely passive, like we really wanted to and making the experience entirely passive was really critical. That was one. The second thing was that we couldn't verify or ensure that the data was actually authentic to where it was collected, right. And so what does that mean? The means is like somebody could spoof the camera to say, Hey, I'm actually collecting in Venice, California, when in fact, they were in like remote in a little tiny town in Kansas. And if you can spoof the network, then it basically kills customers trust in the data, if it kills customer, if customer trust in the data gets destroyed, then you know, you got a big problem on your hands. So that was one thing. The other thing is that from a cash based system, what we saw was that the people who actually collected the data did not care about the network as a whole, right? They were just coin operated. It's kind of like the renters mentality versus the owners mentality. You know, some people had, like their camera pointed the air, and they'd be like, Well, I still gotta get paid. Because I have the camera installed, we're like, but you're just looking at the sky, like there's nothing useful there. Right. So that's when I saw helium. So helium is a decentralized wireless network, that is crypto incentive, where it aligns all the financial incentives between the people who are actually helping build the network, in those, you know, that are actually providing the network. And I thought that was really, really smart. And so we decided to do two things, we decided to a build our own dash cam from scratch. And then be is adopt many of the helium concepts from a

business model perspective related to crypto into hive mapper, we raised $18 million in 2021. And then launched our own dash cam, get a lot of pre orders for that. I think it was like 7000, pre orders, something like that for the dashcam. The dashcam start to ship and November of last year. Fast forward to today, what are we like April 3, April 4, and we're up to like about 100,000 unique road kilometers per day, we're up to about 1.5 million or 1.4 million unique road kilometers mapped globally, to put that into context. And so for months, we've done 1.4 million unique road kilometers, and there's about 16 million road kilometers, unique road kilometers in the world. So it is growing at an incredibly fast pace, is probably growing 5x Faster than Google's review, I would argue probably closer to 8x or 9x. But that's where we're at today. It's been fun to watch the growth of it. And a lot of the things that we thought would work are working. So yeah, so that's where we're at. That's our that's our crazy, wild journey that we're on.

Jake 8:39

Awesome. Well, I appreciate you sharing the story and starting from the beginning and your time at Yahoo and going on to gigwalk. And ultimately hive mapper, first with drones and now with crypto. So obviously been paying attention to, you know, some of the new and exciting technologies and trying to use them to bring this dream of, you know, building a new global map of the world in a more decentralized way to fruition. And hopefully, crypto will finally be that thing. I think it certainly seems it seems like a very interesting application. A lot of people are building in crypto, you know, for the sake of crypto, we talked about this a little bit before getting on the recording, but it feels like we're due for some apps that are actually utilizing crypto in a way that, you know, companies couldn't have been built prior to it sort of the infrastructure is now here. There's enough of it and like what what interesting things can we do so helium is one very interesting example. And I know you guys are are close and partner with them directly on certain things. And now here's hive mapper, which is another one thing that I'm sort of curious about, as you mentioned, you know, obviously gigwalk like you guys had, you know, pretty material revenue for a while but just sort

of felt it wasn't working or issues with the business that you know, were too much to be overcome with like tweaks here and there. Hive mapper. Similarly Drones, you recognized the same thing. But then when you tried, you know, you're using the third party dash cams, you realized, you know, actually, this is working. But there's still like a lot of problems like as cash base, like you said, no ownership mentality. How do you like, you know, it seems you said like, if you're intellectually honest, you can sort of tell the difference between if it's working, and if it's not, but from the outside looking at, it wouldn't seem that it would be super obvious. Like, it could be pretty difficult sometimes, because there are, you know, even if it's working, there are a lot of problems. And if there are a lot of problems, you can be like, Well, maybe it's it is working, but there's just a lot of problems right now, how do you know? Like, how did you distinguish at that time, like, this is the path we need to go and these problems are fixable. But this is sort of the right direction to march forward?

Ariel Seidman 10:49

Yeah, I think the key is that, you know, the analogy I would use is like, pushing a rock up the hill, if if you in order to grow the thing that you're growing, and if you're constantly like pushing the rock up the hill, that's a problem. But if at a certain point, the rest of the community, the people who are actually injecting, you know, oxygen and utility and value to the product, or helping you push the rock up the hill, then all of a sudden, it feels like, you know, you don't have to quite work as hard. I mean, obviously, you're working incredibly hard. But the collective effort of everybody, right customers and contributors, like the entire ecosystem, is pushing momentum forward with you, then you know, you're onto something. Now, look, you're still going to have problems, right? Like every day, there's going to be a new issue that's going to come up that you're going to have to solve. So that doesn't mean you're devoid of problems. But it does mean that you get the sense of, you know, it's not just you and your core team that is pushing the rock up the hill, you now have, you know, whether it be 200 people, or 500 people, or 1000 people or 3000, people, whatever that number is, everybody is like collectively trying

to push that thing up the hill, and it feels a little bit lighter to each individual who is, you know, participating in that and pushing up the hill. So that's the distinction that I would make. And, you know, that's just like, you develop that from experience, to be honest with you.

Jake 12:27

It's just like a gut feel, basically.

Ariel Seidman 12:29

Yeah, it is, like, you just you just smell it, right. And it's like, you're a heat seeking missile, and you're looking for that. And if you don't see that, and if you don't feel that, then you just gotta like, figure out like, okay, maybe there are some things I can fix here, maybe there's not, you know, but like, once you, once you, once you experienced that, then you know exactly what it looks like. And then just gotta lean hard, hard into it, and, you know, attack that problem very aggressively with as many resources as possible. Because that moment won't be there forever, either, right? If you don't take full advantage of it. So that's always been like, my, my thing is, like, when you start to see that everybody else is on, you know, quote, unquote, on the same team pushing the rock up the hill, then it gets a lot easier. And then what happens is, you know, at some point, you reach the top of the hill, and then you come when you're coming down, you're coming down with like, a tremendous amount of momentum. Right? And that's amazing, right? That then you're like, really, you know, accelerating to a place where you could that achieve a true true global scale?

Jake 13:34

Yeah, it's interesting to you brought up the point about, you know, one of the issues that crypto solved in this case was the lack of an ownership mentality, where, you know, you're basically like renting,

renting labor. And like these people, you know, people could point their dashcam in the wrong direction, they just don't really care, like they want to do sort of the bare minimum, or whatever, or, you know, maybe, you know, maybe some people are trying hard, just out of integrity, or whatever it might be that just the pride of doing a good job. But the incentives aren't quite there, where it really matters, like you're either doing enough to get paid or you're not. But being a part of, you know, a community and an ecosystem and getting rewarded and tokens and being incentivized for the whole pie to basically grow and hive mapper to become successful. There's a whole nother element of wanting to do a good job, they're wanting to do a great job and sort of contribute beyond maybe what you know, strictly what you're getting paid to do specifically and actually just trying to do a great job and, and help build the thing and you know, a lot of people want purpose and whatever. And like maybe they find that with their day job or their family or their friends or whatever it might be, but like having a thing that you're doing on the side with like a global community, people around the world, doing something that might actually prove valuable as well in terms of, you know, monetarily. It's very interesting and like, I'm kind of surprised that there's still not that many projects. acts like helium is another one that we talked about. But still not that many projects. I feel like that are really doing this in a way where people are going out there and doing something in the physical world and taking advantage of that. Crypto, you know, that feature basically, of token onyx, which is the ability to align people around something. Do you agree generally with that? Are you seeing other things out there that are making good advantage of this? What are your thoughts?

Ariel Seidman 15:26

There's nothing, not as many, right? I think, like, look, the crypto winter or whatever we're in right now is definitely had an effect, a dampening effect in terms of new projects getting created. I think that's one. I think the crypto industry as a whole did themselves a little bit of a disservice. Not a little bit, a lot of a disservice, right? Because there were a lot of scams, right? And so I think that for a lot of entrepreneurs, who kind of said, Ooh, this is

interesting, they didn't want to be quote, unquote, tainted by all the scams that were that existed in the crypto industry. And I think that it's incumbent upon the crypto industry as a whole, to call those things out for what they are, and suppress them. I mean, look, in the web two era, there was a lot of scams, but like, you know, the the primary way which things got discovered in the web two world was through Google, right, and Google effectively just suppress them or ignore them. And so they never got exposure. Unfortunately, that's not the case in the crypto world in this day and age, with social and a lot of other things where these scams can kind of spread. And so I think that, you know, job number one is for, you know, those, and I think Coinbase is doing a really good job of this in terms of leading the industry now, and is being very vocal about this as like, look, we got to get rid of bad actors, right, we got to get rid of people who are in this for the wrong reasons. And once we do that, then I think it'll start to attract, you know, really a new group of entrepreneurs that are high quality that are going after and tackling many of these different problems. But yeah, look, the industries that we're we're talking about are massive, right, like the wireless industry that helium is going after is trillions of dollars per year, right? The mapping and GEO, you know, there's billions of people who touch Google Maps every single day. There's millions of businesses that pay for Google Maps, API's, and, you know, every single day and you know, in large Psalms, so there's many other industries that can benefit from this approach as well. And so we just haven't, we were just just just starting to touch the surface of it. But it will take time, right? I think like the thing with wireless, the thing with maps is that this these are not like overnight successes in the sense of fully monetizing them and fully capturing the revenue opportunity here, you got to first build the coverage, right? Because your coverage is effectively your product. And then once you have a meaningful coverage, right, because most customers don't want to deal with things that don't have, you know, good reliable coverage, then you then and only then can you turn around to customers and start to sell right. And so I think that that's a big challenge for us. That's a big challenge for helium, that's a big challenge for many other participants who are going to take the same approach is you need a set of folks who are going to come along for you over many years, who are going to continue to believe continue to execute, understanding that

these networks on the global scale that they're needed, do take time to fully evolve.

Jake 18:31

Right, and I think people so I mean, I'm hoping we see some more projects like this. And I'm, I'm just hearing, you know, what I've heard, you know, did a lot of prep for the podcast today and heard you talk about hive mapper, at length on on other podcasts and write about and, you know, read the website and everything like that. And it seems to me that the general sort of business of maps is relatively unknown and under, like, not understood by the common public, relative to how important it is, and like how valuable it is, like you mentioned earlier, 30% of search queries involve geo maps in some way. You mentioned Google Maps, probably as a standalone worth, like somewhere around $100 billion, something like that. And I don't think people really like you know, as a consumer myself, like, it's like, okay, I use a map when I'm using GPS to go somewhere in the car or on foot. And, you know, I'll use it to look up like, where's the restaurant near me or whatever it might be. But people don't understand like the business to business application or like why someone would be paying Google Maps for their mapping and things like this. So before we dive into like Hive mapper, can you sort of explained the business behind maps and why it is so valuable to have, you know, excellent, frequently refreshing worldwide maps?

Ariel Seidman 19:58

Yeah, So the first thing to remember is like, what is maps mean? So Google, obviously, from a search numbers back search engine perspective crawls the internet, right? And if you crawl the internet, you're literally like, grabbing every single web page understanding what's on that webpage, what web page links to which webpage, right? And that understanding of the web is incredibly valuable, because then you can satisfy people searches, right? When they come in search for, you know, information related to medical issues or to like, like you said, restaurants or to like, whatever the topic is, they have that

existing understanding. So maps, is, you know, crawling, but instead of crawling the internet, you're crawling the physical world, right? And so you need to see all these different parts of the world right to answer questions. So if somebody has a question about, you know, Lagos, Nigeria, or Nila or Chicago or Los Angeles, you have an understanding of every single block, you know, what's the address is? What are the turn restrictions on that block? You know, what businesses are on that block, you know, how many liens are on that block. So it's a really, really hard problem in terms of crawling the physical world, and then you have all these, like, privacy issues, national security issues, right layered on top of it, etc. So we'll get more into that. But the other thing to remember with maps is there's different types of people who use map. So let's start with a consumer. You alluded to this, you know, that's people like you and I, Hey, we gotta go to the office, we gotta go to the airport, you know, how do we get from point A to point B? You know, we won't understand the traffic, we will understand turn by turn directions, all that kind of stuff. So that's, you know, many billions of people every single day use that. Obviously, Google Maps is the biggest but also Apple Maps. Then there are businesses like Uber like Yelp, like Airbnb, like the US government, like your local city, like insurance companies that integrate maps into their own applications, right. So let's take Uber, you open up the Uber app underneath, you know, hey, I want to I want a taxi, Uber cab here. That's all driven, mostly driven by Google Maps, right? You're like looking at different properties on Airbnb or Redfin or Zillow, you know, the context in which you're looking at those different properties or lives on side of the map, right? Then you want to like go and look at him and go look, Google Streetview. That's all like, that's Uber or Redfin, or Zillow, or paying Google Maps. And there's millions of businesses who pay Google Maps to integrate the products into the services. There's a third growing part. So those are the two primary ones. Today, there's a third growing one which are cars. So not cars in the sense of like it, you know, like a lot of these high end cars like BMWs, and Audi's and some like Ford F 150s, they have a map integrated for human consumption, right, so does Tesla's that's not what I'm talking about. What I'm talking about here is the car itself is using data from the map. So for example, the car says, I'm automatically driving on the highway, the speed goes from 65 miles an hour to 55 miles an hour, the car automatically slows down,

right? That's the car consuming data from the map to then make a decision about how to drive the car, or how fast to drive the car, right, the car starts to like, get off the highway, and there's like a turn. And so it needs to understand what the bank of that turn is. Right? How aggressive that turn is, and then modulate how fast it should go around that turn, right? You need to know how many different lanes there are, right? It's a one lane to exit are there two lanes to exit and need to know whether or not there's an HOV lane, or if there's a bus line like all of these detailed information. That's the car consuming the map data, and then making decisions based on that. And that is a incredibly fast growing, you can understand like, why the freshness there is so important. And so you're gonna see more and more of that, and there's billions of cars, you know, in the world. So like that will take time to deploy to every single car. But that's, that's what effectively is happening now. And so that's a third large consumer of map data. The thing that most people don't realize is the freshness, right? If you came to me and said, Hey, build a map of the world once and you know, on a scale of one to 1010 being the hardest, I'd be like, Okay, that's like a seven, you know, maybe even a six. The hard part here is maintaining the freshness of the map and doing it cost effectively. And that's where you go from like, you know, problem that's like a six or a seven to a problem. That's like a 10. And I would argue that Google doesn't do that well today. And Google doesn't do that. Well today, because the cost structure that they have to be updating the maps is so incredibly expensive. And so they do a reasonably good job in places like San Francisco and LA and London, but you go outside of the United States, you know, beyond London, Paris, you know, Madrid, Berlin, etc. Like there's a steep, steep drop off in terms of quality and freshness beyond that.

Jake 24:57

And how do I think about the difference between I mean, first of all, that's, that's super helpful sort of like, overview definitely helps my understanding a lot, and probably people listening as well. But um, how do I think about the difference between Google Maps, which to your point, there's somewhat limited freshness, and especially outside of, you know, major US or European cities, and whatnot, the more you know,

developing of an area is, the worse it's going to be or the less fresh at least it's going to be probably. And even, you know, stuff that you would imagine would be pretty, pretty reliable. It's probably not like I heard you talking about Toronto, I think is surprisingly, not very good in terms of the mapping, so and freshness. But how do I think about the difference between like Google Maps, and which is like very comprehensive, but maybe not super fresh? Versus like a ways where I don't really know how comprehensive it is. But when I you know, if I use Waze on a car ride, when I'm driving, like, it's got, you know, the police is here, and there they are, and the crash is here. And there it is. And it seems like extremely fresh. But maybe I'm sort of missing like, is there some? Do you need to combine these things in a way that's not currently being done well enough? Or is there a level of sort of freshness, even beyond ways or at least equivalent to what ways it does at its best in its best areas, but doing it on a worldwide scale? Actually, I think about like the remaining problem that needs to be solved.

Ariel Seidman 26:30

Yeah, so So what Waze is reasonably good at is like it there's Well, there's a couple of things. One is yes, if there's if there's very, very good density in the city, then ways like for police like okay, yeah, there's a police here, like, you do run into this issue of trust with Waze, right, which is, it's literally just somebody has a tap of button. And so you need multiple confirmations to like, truly trust it. Right. Yeah,

Jake 26:55

I should. I should mention, sometimes the COP is not there. And the accident is not there. So it's not perfect or anything, but it's, it's reasonably good.

Ariel Seidman 27:03

Yeah. So the trust is a big issue. The other thing is, and this kind of gets to this idea of imagery, where we think that we have a leg up relative to ways which is you don't really understand the severity of the problem, right? So for example, a car accident, if you really understood that this was like a three car crash versus a fender bender, you know, you're gonna be there for a while, right? And, you know, if you could see it with an image, you can see it right, like, holy shit, that's a three car crash, I'm gonna be here for a while, right? Or like, oh, you know, up ahead of me, as I'm going to Tahoe, like I start to see the traffic deteriorate? What is the cause of that? Right? Okay, I hear the weather, it hasn't gotten good, you know, isn't as good up there. But like, I'd like to see that. Right, I'd like to understand what are we dealing with, you know, 50 miles ahead of me, or 7575 miles ahead of me. And we think imagery really helps satisfy people's curiosity. But more importantly, really gives them a trust, trustworthy verification of like, here's what's actually happening, right? You don't have to trust that somebody's description of the problem or hitting a button, like no, no, here, just look at the image. And you will see for yourself. And we're just starting to see the hints of this, which is really exciting, where you have this combination of humans inside of Hive mapper to the contributors, who can start to alert the rest of the network of some of these problems utilizing imagery, right, that are coming off the dashcam, with AI that is starting to detect some of these different issues. And it just, it paints a much more authentic picture of what's actually happening. And it paints that picture much faster, because you don't need five or 10 or 15 people to confirm it. And it really satisfies human curiosity, which then kind of lowers anxiety levels, right? When you're stuck in traffic, what's the first thing that you do you're like, trying to move the car around, so you can kind of potentially get a better angle and like, whatever is causing the problem. And so but if you can just see the picture of what's actually causing the problem, then it kind of lowers the drivers anxiety. So it's new, what's what's kind of just started to happen, and I'm very excited to kind of see where this goes.

Jake 29:16

That that's helpful as well. One of the things I picked up in sort of, you know, prepping and everything is the you know, usually you see and I could give them business, if you can make something like 10x cheaper, or you know, even 100x to be super ambitious, cheaper than like, you're gonna be able to deliver a product that's just like next generation versus whatever the previous thing was. You guys that you know, with, you're selling your dash cams for $500. And granted, it might not be like one to one a dash cam is might as useful like one dash cam in one car for you guys is maybe not as useful as you know, one Google car that's going around and mapping their maps but at the same time It's literally like 1000 times cheaper, at least that's what I saw, like 500k for one of those Google cars and $500, or there abouts, $600 for one of your guys, dash cams. So is that sort of the key innovation, there are one of the key innovations where you're just with the cam in existing cars and the, you know, incentivization, provided by the tokenomics, you know, involving the crypto and everything like this starts to just make it way more economical to be able to increase freshness to a degree that just is not economically feasible at Google's price, you know, per vehicle.

Ariel Seidman 30:38

That's exactly it. Like, what we're seeing right now is just like, there's roads that Google has never seen, right, like, literally never seen. And by the way, this is not like in places that are, you know, in the remote parts of the Amazon or something like that. We're talking about, like Abu Dhabi, we're talking about like Irvine, California. And, you know, they're showing up on a map right now. And they're showing up, you know, in some cases, Google's never seen them at all, or, in some cases, Google hasn't seen them in eight years. And we're now seeing them like every week or every other week. That's, that's part A, then we start to see parts of a city that Google has never seen, because they're access restricted, right? If you're talking about gated communities, right, Google Streetview car cannot get into most of these gated communities, right? Well, there are still deliveries happening in these gated communities, whether it be FedEx or DHL, or some other delivery company, right, they're ultimately have to deliver goods and products and services. There's Uber cars, or Ola

cabs that are going inside of these gated communities and other places that you know, have some sort of privacy restriction, OR gate associated with them. So we're getting an access to so many different places that, you know, Google Streetview, will never be able to see, like, I mean, they could increase the number of cars that they have, by, you know, 100 to like, match what we have, but they'll still never get access to them, because of just how they're getting deployed. And so we're just seeing like the tip of the iceberg associated with that. The other part about this is that it's a little bit nuanced. But I think is important nuance is that the world is a messy, chaotic place it and it is for us, and it is for Google Streetview, as well. And so what does that mean, I think about this in terms of shots on goal, right? So Google, when its cars are out in this messy, chaotic world, it gets one shot on goal of a given location, if that given location, you know, you see this all the time, especially in cities like New York and others, there's trucks, there's buses that are obstructing your view of all the different signs, all the different issues, all the names of the businesses, all the addresses, right, the really valuable information that make up a map. And so that's a problem for Google Streetview, in the sense that they're not going to see that same location for maybe another 12, at best, another 1214 months, probably more likely, two years. And whereas we will run into those same issues, right, we will get obstructed by buses, and trucks, and so forth. And you know, for that one moment in time, we will not be able to make a good map, right. But guess what, we're gonna see that location, maybe a week from now, two weeks from now, you know, at worst, maybe a month from now, so we don't care that much, right. And so that's just because we have many, many more shots on goal, we can build a much better map over time than Google. And so I think that goes back to like, just our approach in terms of being super cost effective versus Google Streetview, is enabling us to then see so many different parts of the world and then build a better map.

Jake 33:32

Yeah, that that makes sense. And so we've referenced sort of the tokenomics, that helps enable this a few times, but we haven't actually dug into how this works, I think that'd be really useful for

a just for people to understand and be for people who might be interested in actually, you know, following up listening to this and go into buying a dash cam and getting involved and, you know, understanding what exactly they would be getting involved in. So I think there's the one aspect of it, which is, you know, pretty reasonably easy to understand, like, you buy a dashcam, put it in your car, go drive around and sort of get rewards through what you guys have called the honey token, to you know, for that work that you're doing and contributing. On the other side, it's not so obvious to me, especially because, like we talked about earlier, some people don't really have a great understanding, although, you know, maybe a better one now of, you know, what the map business is like, like, now we understand, you know, Ubers paying Google Maps for their maps and Airbnb and Zillow, and some of these cars with their autonomous functionality as well. And I understand there's basically a mechanism where, you know, the drivers with Dash cams are earning the tokens and then the people who are basically hive mapper customers in the sense, the businesses rather are sort of, they have to, like buy the tokens in order to basically pay and so there's like some burning involved, but could probably give a much better explanation with some particulars maybe?

Ariel Seidman 35:04

Yeah, for sure. Okay, so before we get to like the exact tokenomics, and how that all works, but let's just back up here, because I think it's an important concept to understand. So ways. We talked about ways, you know, ways was definitely crowdsourced. Right. But let's dig into what that means in terms of crowdsourced, right, there were definitely there were two modes of contribution within ways, right one is you and I driving around with the Waze app open, and they're effectively pulling all of our GPS coordinates, right, or what's commonly referred to as GPS traces, you know, from our app, and then they're trying to derive information like okay, geez, we've never seen anybody go down this, this, this path over here. Is that a new road? Right? Okay, we see 10 People going down this now, obviously, we don't have cameras, so we can't see where they're actually driving. But they basically try to then use those GPS traces to infer and determine,

Okay, is this a one way street is a two way street? You know, everybody seems to be going about 40 miles an hour. So we assume that the speed limit is 40 miles an hour, right. So there's a whole bunch of algorithms that they then use on top of those GPS traces to try to form the map. The other mode of contribution in ways was or still is, effectively map editing. What does that mean? Those means, like, there's about 30 to 40,000 people according to the Wall Street Journal, that are sitting behind a computer that called Waze map editors, and they are very tediously, on a computer screen, editing the map. So they're literally saying over here, there's a one way street, right? The speed limit over here is 45 miles an hour, right over here at the corner, there's a Starbucks right? Over here, you're not allowed to make a right hand turn because of one way street, it is very, very tedious work. So look, my thing is, is that all those people were working for free. They were unpaid contributors. But without them, there is no map, right? And the economic interests of all the different participants were not aligned. Right? You have employees that if the map become very successful, will do very well. You have investors that if the map does very well, they'll do they'll make out as well. But all these people, you know, who are actually building the map, and let's be clear, without them, there is no ways basically got gotten nothing, right, like zero, their economic interest was a big fat zero. So I think that's wrong. And I think that crypto helps address part of that problem. Not all the problems associated with that, but part of the problems. And it basically says that, look, if you're helping build this map, right, you're building an economic interest in this map by contributing to it right, you're providing value, you're providing a service to all of these customers that then want to use the map. And so there are two primary modes of earning today. Earning funny that is, one is by driving around with a dash cam. And you know, used all the Dash Cam, it takes about 1015 minutes to install, connect to your Android or iPhone. And then you just drive like you normally what we don't want people like quitting their jobs and driving big, you know, you can do whatever you want, but like the system was not designed that way. You know, but if you're just driving great, like five mapper, and the hyper dash cam wants to be part of that drive. So that's one mode of contribution, and really the primary way which you earn honey tokens today. And then there's a second one, which is around, how do you help train the AI systems?

Right? So what does that mean to help train the eyes AI systems? So these are people sitting behind our computer, and they're saying, Oh, that's a 35 mile, like our AI system is saying, We think there's a 35 mile per hour speed limit sign? Can you confirm this? Or is this wrong? Right? We think that, you know, we've blurred all the faces of people in this location in all the license plates, please confirm that we did this accurately. So that's another mode of contribution, basically training our AI systems by editing these different objects and things in the map, or confirming or denying the accuracy, the AI. And so you know, as as more and more customers then use the map. Right? And so I'll pause there any questions we want to dig in before we get into like how customers, you know, buy and use the map and then how that ultimately flows back to the contributors.

Jake 39:37

Yeah, I think that makes sense on the contrib contribution and like earnings side, and let's go to the the other side of the equation.

Ariel Seidman 39:44

Okay. So on the other side of the question, the important thing here, remember is there's two entities, there's hive mapper, Inc, right? The company, it's a normal company, we do business in cash, you know, like US dollars, all that kind of stuff. And then there's the mapping network. So I've mapper I think it's effectively licenses data from the mapping network. That's the important thing to remember here in terms of these two different entities. So hive mapper, Inc, you know, like any normal technology startup, you know, has marketing people has salespeople, we go out, we find a customer, right? Who says, Yes, I would like to spend $100,000, utilizing this Map API, right. So the Map API can be as like, hey, for, you know, 10,000, unique road kilometers, I want all the imagery, and I want all speed signs, and I want all stop signs. And I want all traffic signs. And I want all parking restriction signs as an example. Okay? Mr. Mrs. Customer, that's going to be I'm just making this number up, that's going to be $100,000 for the year, right. And you can use up to 10,000, unique

road kilometers. And you can spend that as you know, how you would like. So that's $100,000, in Fiat cash, that's all you know. And then what we do hide and operate does is we then turn around to the mapping network, and we say, we would like to license X amount of data, and you know, we will pay you the fee. Right? So right now, it's two cents per map credit. So what what happens in that transaction, we buy map credits from the, from the from the mapping network, that then gives the mapping network the rights to basically burn effectively by money from existing contributors, or whoever wants to sell whoever has found honey can sell it. And so we then say, Okay, we're gonna buy, I'm just making these numbers up, I'm gonna buy 50,000 Honey tokens from all these different contributors that people who will sell it to me at this x price. Okay, so now there are 50,000 Honey tokens that have been effectively removed, right. And as a result of burning or removing those 50,000, honey tokens, the mapping network now has the rights to effectively mint, a new 50,000 Funny tokens that can be mined for work that is right for like helping grow the map in terms of map coverage driving around or, you know, helping train our AI to help improve the map and the map quality. And so what you're then seeing is a replenishment, right of funny tokens that then, you know, as more contributors drive more they'll earn these additional now 50,000 Honey tokens, whatever the number was, that were burned as a result of that. Right. And so that's kind of driving the value back into the honey token. That is the core entity that all these these contributors are earning.

Jake 42:42

Right. And have you seen this sort of the supply and demand dynamic, you know, play out in the early days? Is it like balancing reasonably? Well, I believe there's like 10 billion honey tokens, and that's like a hard cap. Are there any issues, like foreseeable issues and resolutions that you have sort of ready to handle? You know, various things that might come up? Or is this? I don't know, actually, how, you know, precedented this model is other than helium, which does something similar. So I'm curious if you've thought about, you know, basically the the various challenges that could come up and how you guys are ready to resolve them?

Ariel Seidman 43:26

Yeah. So look, in the early days, you're definitely like, there's about 4 billion not about there are 4 billion honey tokens that can be mined by contributors of the of the 10 billion, like right now. And so in the early days, when this was all public, the it was we were basically saying, Okay, we're gonna start to reward these honey tokens to contributors for their work. There's not a lot of burning transactions happening. Why? Because there's not a lot of coverage, right. And so, you this, we are kind of in that phase of the chicken, the egg, right. And we are like dead set in that in that core time period right now. I think you just gotta be very open and transparent about that. It's like, look, we're all building map coverage here, right? If we build that coverage, and then we can, you know, turn that map coverage into high quality data products, right, and then we can go market and sell that, then we have something, right. And so a couple of notes. One is that we were definitely very conservative about the number of funny tokens that were being minted every single week. Why? Because the worst thing you can do is you can basically just go way too aggressive way too quickly, right? And then you don't have enough funny tokens to kind of get you over the hump of building up really, really strong map coverage. Right. And so we've been very cautious, very conservative, and I think We the foundation actually published a document which that is, basically given the current minting schedule, it would take hive mapper, 7080 years to go through all four, 4 billion honey tokens. That's a long time. That's probably too long. And so there were some modifications that were made to that, to try to reduce that. And and so that has happened over the last two weeks. And we're starting to see that play out. But look, I think that it will take some time to build a map and the map coverage, right. And, you know, there are customers who have already bought and, you know, there are definitely customers that we're talking to right now. They're like, look, like, once you have these regions of the world covered, right, I'm in, right. And so obviously, those regions of the world are getting prioritized. And you can definitely earn more right now in certain regions of the world, because we know there's customer demand on the other side, but there's no like, I mean, I think the thing here to remember is like, you just got to, there's a problem,

there's a problem, like if we're doing cash, if we're doing crypto for doing like crowdsource, you know, unpaid work like ways, like, you just got to stare at his face, it's probably in the face and like, deal with it. Because, you know, this is where the value gets graded. Now, the good part about this is that if you, once you reach the other side, and it looks like basically, given the trajectory and the momentum that we have, we will reach the other side. But if you reach the other side, it's not like you're dealing with 50 competitors on the other side. And so once you do reach the other side, then you have something that is really interesting, really valuable, really unique. But yeah, you just gotta like stare it in the face and dig in and go for it, and make it happen and execute day in day out.

Jake 46:48

Yeah, that all makes sense. And I think, you know, I know we're going over on time now. So I'll make this the last question. But we've talked quite a bit about sort of understanding the value of maps in general beyond what most people sort of interact with on a daily basis, talking about the problems with existing solutions, why Google Maps to expensive everything like that. And then the solution that hive mappers bring to the table with Dash cams, and crypto. And everything that you guys are doing, though strategy, I think is it makes a lot of sense to me at least. The other thing that I think is kind of interesting, looking forward to the future, which I've heard you touch on a little bit is, you know, maybe the market for maps, and the demand for maps, and you know, fresh maps, globally comprehensive maps, maybe that even has a lot of room to grow beyond just the Ubers and Airbnbs, and villas and the cars, like you mentioned earlier. And if you think about all of those things, you know, the cars for the autonomous features and everything that's very new. Uber and Airbnb, obviously are very new, the whole space is relatively new, you know, the internet itself, you know, with Google, and everything is not that old Google Maps. One interesting space that I've heard you bring up was augmented reality, and how AR may you know, be I think the right way to think about it is like these AR providers, whether it's meta whoever it might be, they're gonna need mapping and this imagery that hive mappers collecting, can you talk a little bit about you know,

that as well as any other sort of emerging sort of Frontier spaces that may make this mission even more valuable, sort of the prize at the end of the tunnel that you're going for?

Ariel Seidman 48:30

Yeah. I mean, I think AR is is fascinating. Let's take Niantic right. Niantic Labs is the one that created Pokeyman go, which was probably, you know, the first real eye opening experience where they are. And I think even they would admit, like, you know, the the next version where it's kind of more integrated into your glasses and other type of stuff like that is like ultimately where this is going. But yeah, so the core issue with AR is that fundamentally trying to communicate or, you know, having experienced like a game experience, or whatever it is in the physical world, but where you're augmenting that physical world with some new some virtual object, right? So let's say you had like a snake like part of a game or like even a little entertainment bed, or whatever it is, where you're trying to wrap a snake around a fire hydrant, right? And if that fire hydrant isn't physically there, it doesn't make sense, right? The whole story kind of falls apart. If you just see this like snake like wrapping around nothing. And so understanding that there's a, you know what the object is, so A, there's an object there, and b There's a fire hydrant that the snake is wrapping itself around is critical to the storytelling experience. And so understanding the physical world at a very, very, very granular level really brings these stories alive, right rings this mode of communicating alive in a way that we just don't experience today. And so what does that mean is like, you just have to have incredibly fresh maps. And those maps have to have a very, very detailed understanding of all the different objects inside of them, in order to enable developers to create compelling stories, and compelling communication experiences on top of it from a day to day utility perspective, right, when people walk around, you know, especially in busy parts of the world, you know, how do they navigate, like I was trying to nap, I was in Vegas, and I was trying to like get an Uber get out of the hotel, and get to like the stand where you could get the Uber it's not easy, right like to like navigate these like massive hotel complex as you think you're going to the front door, now you don't go the front door,

you have to go down this, like, you know escalator and then grab another escalator, like you could imagine, just like how helpful you know, maps integrated into an AR experience can kind of help you navigate through the series of doors, down the escalators, through another hallway down another escalators to like open we get to the place where you can pick up your Uber. So there's a lot of experiences like that, that I think are, you know, we haven't seen quite frankly, and they will require incredibly fresh maps. But they're, you know, they're definitely like two to four years away in terms of reaching some sort of global scale. And there's still like a lot of hardware that needs to get built to support that. So we have a little bit of time before we get there.

Jake 51:22

Yeah, well, we'll see what Apple's next announcement has. I know, there's rumors that they might be doing something there. But I think it seems like we have at least a couple years, like you said, until this AR is sort of ubiquitous or even beginning to become so. But anyway, you know, I think we've gone over on time. So I appreciate you doing that. But it's been been great talking with you about, you know, hog mapper and your story of how you got here and everything like that, and very excited about what you guys are doing. And looking forward to following along. Here forward, it sounds like you've got close to one and a half million unique kilometers mapped. And I think you mentioned there's like 60 million practically in the world. So you're like, a 40th of the way there, which actually, given what you were saying about you've got like, you know, the tokens were being issued at like a 70 year long pace or something like that, like you're ahead of schedule, I think from from my perspective, and so it all sounds really interesting, and I'm seeing a lot of people contributing in the ecosystem are very excited about it. So if I drove more, I should get a dashcam I don't really drive a whole lot, but it's interesting, and I'm glad we got to talk about it, and people are gonna get to hear about it. So thank you again for taking the time.

Ariel Seidman 52:36

Yeah, you should bought you should buy one and then recruited an Uber driver or Lyft driver and then you guys can split the tokens between the two of you. Yeah, there

Jake 52:44

you go. That's clever. I don't need to do do the driving myself all sorts the dash cam and figure out a deal. But anyway, thank thank you again for coming on and taking the time really appreciate it. Where can people go and you know, follow you and and follow hive mapper. And, you know, maybe go and buy a dash cam if

Ariel Seidman 53:03

you just head over to Hive mapper.com and learn all about the project. And you can follow us on Twitter. We're pretty active on Twitter as well. And you can see like a lot of the different dash cams that people are out there mapping with today to kind of get a feel for where they're mapping all the different dashcam setups that people are doing all over the world is kind of fun to see how this has evolved over different cultures and different types of cars and different places in the world. It's fun to watch