Liberty. Equality. Data. Podcast #13

The Promise of Telemetrics in Athletics and Every Day Clothing with Quin Sandler, Plantiga's CEO

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wearables, data, hardware, investors, gait, measure, sensors, performance, movement

SPEAKERS
Chetan, Quinn

Chetan 00:31
Welcome Quinn to Liberty equality data. Thanks for having me. Absolutely. So we're gonna dive into today and talk about all the fun things. For our listeners, Quinn is the CEO of Plantiga, which is an exciting wearable company, and wearable tech company, rather. Why don't we kick things off Quinn, and if you want to just give a brief overview of the company, that would be great.

Quinn 00:58
Sounds good. Yeah. So again, thanks for having me here. At Plantiga, essentially, we developed a very small sensor pod, think of it like an IoT device that you can embed in a shoe, an orthotic and insole that really just needs to be put underneath the arch of the foot. And it measures all things biomechanics, which just means movement, joint angles, forces, things like ground contact time, how long your foot's on the ground, flight time, and stride length. It measures how you jump, your jump performance, your speed, how you accelerate, how you decelerate. So, there are a lot of different things that we measure, but we basically recreated what you would call a gait lab gait is "g-a-i-t", you would get in a university or some type of lab, we've recreated that in footwear. Right now we have a real big focus on enabling supporting injury prevention, performance, etc, around athletes, so lots of NCAA and professional teams. But on the healthcare side, we are seeing a real big push into the clinical space, we're in one clinical trial for a muscle dystrophy disease where we're tracking movement in the biomechanics of this population on a daily basis. So that's us in a nutshell.

Chetan 02:17
Fantastic. Cool. So um, yeah. So I think the first part of the podcast, I think we want to kind of dive into your origin story a little bit and just understand how you got here. Before that, maybe if you just want to share a few, a few just headlines about some of the successes of late. And the reason I say that is that when I was a grad student in AI, my advisor, his strategy for giving a talk is yet you always give the exciting bits at the beginning of the talk. So people stay engaged and are excited to actually hear about

everything underneath the hood. So if you want to just give a few sort of headlines, and we can dive into how you guys got here.

Quinn 02:57
So we are probably the only footwear-based variable in the NBA so we track your hometown, we've been with the Warriors for a couple of years, we track Klay Thompson's rehab, we've done Russell Westbrook, John Wall when he was with the wizards his Achilles, we've tracked a lot of high profile customers ("clients") we track some big PGA players just picked up the Chicago Bears. Oh, you football has been a big customer, the Dodgers has been a big customer last couple of years. US Tennis Association. So we track on a daily basis many of the world's most elite performers. On the military side too, as well, you might not know their names, but some of the craziest Navy Seals, you have we also track as well. So anybody that is doing crazy things with their body where it is either life or death, or make or break with crazy pressures. Those are the types of folks that we're tracking, supporting and helping.

Chetan 04:00
That's awesome, great, so give us give us the origin story. How'd you guys get here?

Quinn 04:05
So I founded Plantiga with my dad, as a side project a decade ago, I've been self-employed, and I've been in startups since I was 20. And I'm 40 now so 20 years. I started this with my dad and my dad had spent 25 years around the gait lab measuring, learning, and educating about movement and health, how people walk, run, and jump, whether that's with a neurodegenerative condition, sport performance, you name it.

04:36
In about 2017-2018, we went through what's called the Creative Destruction Lab, or the CDL, which is an accelerator in Toronto. During that time, my dad had some colleagues and they built a prototype of this IMU sensor and it's very thin in sole. And through some of my dad's colleagues, we went and we went down and met the Lakers in LA. I remember going down there was just me, my dad couldn't travel at the time, so I go down there and I remember showing Gary Vitti, who was the athletic trainer for Kobe Bryant had been with the Lakers for 30 years, even like Kareem Abdul Jabbar. I remember showing him a demo and him thinking, "Quinn, this is amazing. I'm measuring asymmetries and jumping on the court. Is it okay, we'll, we'll buy them for the whole team." And I was thinking, "Buy them for the whole team? Like, what I'm showing was the only prototype we have, like, there's no whole team here".

But it definitely showed me that we were on to something and that there was this need, especially on this elite athlete, performer world. That was very helpful because we ended up getting a pilot program with the Lakers while we were in the CDL. During that time, another colleague of my dad worked at the Mariners. So we kind of got kind of a demo there. They were very excited. We did some data collection at their spring training facility and got a pilot program with them as well. So we ended up the origin stories kind of as we're doing this, it was a side project kind of going back and forth. But 2017-2018 is when we actually got these pilot programs and ended up raising two and a half million dollars in a

pre-seed round at the end of them accelerator kind of hired our first employee and made more than just that one prototype.

So that's kind of officially how we started, maybe to kind of end with maybe not the most, like happiest of news, but during that time, my dad also got very, very sick with prostate cancer any passed away. Oh, wow. It was a very, it didn't feel like it was awesome to get all those things because of what had just happened. So in time, obviously, you make peace with just how life goes. But the origin story is very much entwined with my father. My dad filed the original patent that we just got granted last year, which is a very strong piece of IP around motion capture sensors embedded in shoes and insoles. But my dad drafted that. It's really all thanks to him. And you know, we kind of fight on in his honor.

Chetan 07:07
Wow, what a story. On a lot of levels. And I think it's very rare for any startup to begin as a father-son, collaboration that isn't something that I normally hear. And your dad sounds like a really special guy.

Quinn 07:24
He was; he was. My dad's name was Norman. So internally, we do a bunch of AI kind of our internal name for our AI is *Norman*, which is just a good name for an AI. So Norman is our digital movement, health coach. He pops up everywhere. So in his honor, still very much there.

Chetan 07:44
Amazing. And so your dad was a researcher in gait tracking? Is that what you said?

Quinn 07:49
Yeah, so my dad, it's been so he was an engineer, and he spent a lot of time around gait lab. So like, working with the equipment, helping run the testing, he was involved a little bit in research as well, but really a background and biomechanics.

Chetan 08:03
Got it, and we see a university, an academic university, so he went to

Quinn 08:07
UBC. So the University of British Columbia, is our university up here, our big one.

Chetan 08:15
Okay. And I'm sorry. So what is gait lab?

Quinn 08:22
A human being's GAIT is basically just the word for how you walk and run. A human's gait is literally how the limbs move. So it's gait spelt G-A-I-T. So every university has a gait lab, which means whether it's Spinal Bifida or MS, or stroke, they're collecting, they're tracking. Every rehab hospital has systems that measure gait, whether it's optical camera systems or motion capture. I say "gait lab" because they exist everywhere. There are 1000s of gait labs around the world. But they're usually lab-based systems

with a bunch of technologies of motion capturing cameras and force plates and things like that, that look at how people move.

Chetan 09:14
Got it. And so your dad's key insight is that he could make assessments about gait more effectively with a wearable in the insole, is that so?

Quinn 09:22
His insight was this: He can make amazing assessments with the tools on hand, but who had access to those tools? Very, very few people. So his insight was more *if you could democratize a gait lab democratize the access to this movement data*, which is one of the best lenses into human health. Look, you have a stroke if the way that you move could flag early signs of Parkinson's before any diagnosis like it is such a valuable lens into human health. And he could do that himself but you have to run collect the data, big cameras. It's filled with friction, it takes time. Literally, sometimes you would come in for testing on a Friday, you won't get the report to the following week, like, it's just was filled with a lot of friction. His mind was ***if you could streamline that, if you could make it mobile, and ultimately build it into someone's shoe, it would literally impact every part of a human population from young to old.*** That was the insight. So that's kind of started that journey.

Chetan 10:28
Got it. Okay. And so once he had that, then the next step, first of all, that's a very powerful insight. I wanted to dive into that a little bit more in the podcast, especially the larger consumer use case, which I think exciting. But I just want to drill down a little bit into, you know, translating everything in a gait lab into a wearable. So that sounds like a pretty big step.
What was involved in creating the original tech for the wearable itself?

Quinn 10:56
In 2017-2018, Analog Devices put out a very powerful 16G IMU. So if you just use an inertial measurement unit, so it's kind of what it started in planes, but it measures rotational and linear accelerations. So essentially, what the thing does, it's what's in our iPhones or Google pixels, it literally what determines what they call pitch, roll, and yaw, like where something is in space and time. Up to that point, they were big, they were expensive. They were power-hungry, so you needed bigger batteries and clunkier equipment. So we started to see sensors come online about six, seven years ago, that was the first time where it was small enough and optimized for power and battery consumption, which looked like okay, this actually might start to be able to measure the things that we want in the environments that we want to measure them in.

So lots of prototypes, we're on our fifth generation of hardware. And, you know, it's one thing to collect raw sensor data. an IMU sensor also is very noisy, and it has a lot of offset bias. Every time you turn the sensor on, it reports something different. So there was a lot of work on the firmware, software, hardware. In the early days, my dad was very involved in the first couple of prototypes. Since then, we've had a pretty amazing engineering team that has kind of continued that work. But lots and lots of like, we're on the verge of like a deep tech startup is, yeah, we make aware of what we kind of identify as a data company more than anything, it just happened to build proprietary hardware. But ultimately,

very hard to make an inexpensive off-the-shelf sensor like an IMU report accurate, valid and reliable data like I'm in a lab. Literally, it took us four or five years right now, some of our metrics were off by like a half a percent from the gold standard it literally took us four years of work to get them.

Chetan 12:55
Interesting. Recruiting for your company, when you guys were in the early days, how it sounds like what you're doing is very niche, and very specialized. And I'm curious how you found your original sort of engineers?

Quinn 13:14
Yeah, totally. So Mechatronics is the combination of mechanical engineering, electrical engineering, and software. So basically all the things that you need to basically build robots, but you could almost think of our system as a robotic system of sorts. Mechatronic engineers that had backgrounds in sports, or physiology or Kinesiology. That's where the first three or four came. Two of them are still with us today. And so finding someone that understands the space, but also the engineering technical problem that you have, that was hard to find, but that's where we found is those programs with that type of background.

Chetan 13:59
Got it. Very cool. And so the beginning days, early days, you guys, you guys raise funding.

Quinn 14:04
So we finished the CDL download accelerator, we're raising a pre-seed round of two and a half million since then we've raised about another four to date. So I think we're about six and a bit that we've raised to date over the last five years.

Chetan 14:21
Five Years. Got it. Okay. Cool. And the reason I'm kind of asking a few these questions is just that a lot of our a lot of your audience are builders or investors or folks who are thinking about other crazy cool problems. And I think your journey can be really inspiring to a lot of folks. Yeah, so

Quinn 14:35
what I would say in the early days as well, you know, with more of that context of who might be listening, we were very conscious about tying into some government military funding. So if you think about what we're doing, there's a lot of work around elite operators or soldiers, whether it's in the US or in Canada, trying to better understand the demands performance in breaching the door. So we got some very big contracts, which helped offset the money that we had to raise from us SOCOM, from the DOD and from the Canadian Armed Forces or the caf. So depending on what people do I know in the US you have AF works and things like that. I think those things were amazing for being able to get some early funding to do some early work in environments where if you're building a wearable, highly receptive to new, new, just new things, highly, highly receptive was our experience, and probably to the tune of a few million bucks that we picked up from there.

Chetan 15:41

So yeah, so now that you've kind of shared a little bit about the very, very early days, you have some funding, you start rolling, when were you guys able to now you guys obviously have some really exciting successes as you had shared earlier in the podcast. I'm curious in the last five years, when did you really start feeling like you had a product that you could actually deploy out in the wild with some early beta users?

Quinn 16:04
Like eight weeks ago? No, I'm joking, kinda. So we're on generation five is the first generation that we have that is reliable all the time. And I mean this to be absolutely, runt, even with big customers like think when we started with the Warriors collecting on Klay Thompson, we get broke the first couple of times, oh, my God, just the intensity. I remember with Russell Westbrook with the Houston Rockets, we collected a bunch of data and the battery died on one like that. So we had a flex PCB, and the interconnect between the flexible Printed Circuit Board and the battery broke, we had lots of issues there. And I remember him literally looking over my shoulder being like, where's my data man, like it was brutal route. So to be honest, it has been filled with so much pain and iteration in learning. And because hardware, it's not easy, like software, you got to go and redo. So we like started with a flex PCB, then we went to a rigid one based on the interconnect issue that we had. We were wireless before, which were not now. So we had lots of data loss and data packet loss. So we've, we've gone through so even though we've had all those customers, we were literally with like, like there's teams, I'm not even able to deal with the Chicago Cubs. We completely messed up that relationship is we went in there, they bought some that literally were like glorified prototypes, and almost to a tee, every single one failed during spring training. And it was just a cluster of trying to like walk back from that funny enough. They're very curious. I'm going to meet them at winter meetings and like, they're just into wanting to see what our new stuff is. So like, ultimately, it didn't distort but three years ago, I'm thinking I've like permanently messed up that relationship.

So honestly, our latest version, which we've been working on for a year, so we knew it was good about a year ago. This is the one that is just awesome. We have no firmware issues, no upload issues, no battery, no time synchronization issues like it is good, but literally took us four or five years to get to this point.

Chetan 18:18
So what do you think is the secret? I feel like we live in a society where everyone is so quick to judge, everyone has such high bars, and there's all these options. And why do you think these teams were able to put up with kind of some big failures from the tech in the early days? Is it that the promise is so amazing of your tests?

Quinn 18:40
That promise so if you could imagine like this actually is a good segue into the problem. If you imagine you're a physical therapist or a strength coach at an NBA team. And I'm working on a player that makes $40 million a year and he's an injury. Think of an Aaron Rogers right now with the Jets, whoever it is, you're doing your rehabs you're training, I'm being able to measure you in a lab. I can get you on force plates and cameras and all sorts of stuff. Okay. Looks good. When you go out to the court, oh, is it ever scary? There's nothing out there. I don't know the demands of the court to the capacity of your ability.

And it is unsettling. If you're a performance or team we like I don't know how they move on the court. And you're kind of guessing. Should we do that drill? Should we do that change of direction, which is also what happens is so many athletes have secondary injuries, they like get setbacks, and it's kind of a little bit of like a shitshow. And so the promise of being able to measure lab-grade data, but in what they call ecologically relevant in environments in the real world. Is this kind of sought-after thing that's been wanted for years even before we came along, now we're able to deliver it, the promise was there. So they were very open to wanting to try it. But that's why because the promise was a big deal.

Chetan 20:13
Amazing. Yeah. So here's a good segue, we'd love to hear a little bit more about what you can do right now for free. Yeah.

Quinn 20:19
So we essentially make a wearable, right, but we're a data company. So it's really just the data that it generates and the insights that we're trying to drive.

Chetan 20:30
you have a wearable and each soul and each shoe, right?

Quinn 20:34
We have one pod and each foot. In some customers, we literally embedded in the orthotic that the athlete wears, so you have an orthotic, which is like a custom medical device effectively, that like puts the arch support and things like that, we can embed it in the arch. Or you can literally embed us in the midsole. So we're working with like, big footwear brands, actually, I can't say their name of but like top five in the world that are putting the pot in the actual midsole, or you can put it in our insole. So you have one in each foot. You put them in,

Chetan 21:07
What are they measuring? What are the different variables which they measure?

Quinn 21:10
So we measure 270, different parameters, parameters, so a lot, but things like ground contact time how long you foots on the ground, we look at dorsiflexion. So like range of motion of the ankle footstrike patterns, we look at flight time how long your foots in the air stride length, the variability in those, the ratios of those, we look at limb speeds, or how fast the limbs move, we have proprietary metrics, which calculate the load of what they call mechanical load, basically the load that is experienced on the tissue. So too much load is where injuries kind of come from. So we manage and measure the load. We also measure the change of direction. So how fast you can move, right? How fast you can move left, in jumping, how high you can jump the forces coming off the ground.

But ultimately, what that does, is we take all that data and then the answer is, well, who cares? Like what do I do with that? A big thing is we build a signature. So you use us five times and I know how you move not even how you move compared to a population, but how you move is you. And then we measure against that. So once we establish your **movement signature**, we then flag a standard

deviation outside of that. So literally, if I'm a coach, it looks like you're the same as you were yesterday. But our data will be like, whoa, whoa, whoa, whoa, whoa, things are different. Higher Ground contact times here a little bit slower, here, jump heights are not nearly as high. So it's the insight around the flat almost, it's literally a check engine light, something's going on engine light comes on.

On top of that, we built AI that can auto-detect movements. So if you think of a sensor, it's a very dumb thing. And so you have to teach it. So we can teach our sensor to know, hey, this is when the athlete is walking, then let's compare that walking to the last 10 times that we walked. This is how the athlete is jumping. Let's compare that to the last 10 times and so on and so forth. So it's all that data, but then it's establishing the baselines. It's tracking how you stack up against yourself what they call n equals one, but comparing you against you is the best way of doing any type of wearable or health data. population norms are so contextualized which means like what is like what is normal, if you if you look at basketball players, by nature, they are abnormal, that's why they play in the NBA or the NCAA. Right? So you don't really want to compare against population, although that's people like that, but you really want to compare against yourself. So that's a lot of what we focus on.

Chetan 23:54
Got it and so on. So the types of use case he was used for. So one, you mentioned the check engine light. So yeah, that's it so as to prevent you can flag when someone should be concerned about It sounds like once someone's in rehab, you can measure how well they're doing rehab is that

Quinn 24:15
is probably our biggest use cases what they call Yeah, well in return to play or rehab. Think of it as a diagnostic tool as well. We've done a bunch of work in fall prevention, so And like any older adults who you can do a walk test, and there's things around gait speed, so just how fast they walk, their stride length variability, so the variability in short strides or big strides, things you can't see with the naked eye. But that act is precursor before people fall so shows instability in how they move. So you can use us in fall prevention. You can use this in injury prevention, in rehab, and then obviously optimizing performance.

So let's say we do a sprint we realize okay, your first four or five steps are kind of slow. I'm gonna put in place a program, but then how do I know if it's actually being effective? While you use us to basically be like, Hey, are you actually boosting your performance is the program I'm giving you doing its job. And so that's kind of where we come in. And then I think the last one, which is probably a bigger area that we really haven't explored yet, but a little bit is occupational health and safety. So think of all of the people whether it's kind of nurses, or doctors or people like EMS, and even people that work in factories, if we've had some really good discussions with Amazon, is there's a lot of muscle skeletal issues, which just means my ligaments, my tendons, my joints, people hurt their backs. And so much of that is because people are moving improperly, they're lifting improperly. So there's an area of applying our system in the Occupational Health and Safety category that I think would be massive. We're just obviously not there today.

Chetan 25:59

Got it. Interesting. And so I'm coming back to that first sort of bucket right there, which was sort of prevention; in the NBA right now, or are you able to is that one of the main use cases, so our players essentially getting alerted when there's a warning sign in the game.

Quinn 26:17
little bit, their, their, their, their health and performance teams are. And so right now, the main use case is *baselining*. So they're healthy. We just went through camp before the NBA started last month and a bit just saying, hey, look like let's put these on folks. Let's have them wear them, while we're training while we're playing scrimmage, games, etc. Let's kind of build a baseline. So in the year, when they might get hurt, we're gonna have really good data from which to drive Hey, are you getting back to where you were pre-injury? That's a big, big use, and then kind of the players who are injured, they're now wearing us every day to see are they actually improving the way that we want them to.

Chetan 27:03
Amazing. That's, first of all, congrats. I think that's so exciting that you guys are actually being used and solving a really cool problem. And, you know, I think that, generally speaking, I think the wearable space has been kind of an interesting space to sort of look at from the outside. I feel like there was a huge promise like 10 years ago or so there's a lot of wearable, sort of tech companies coming up and then only

Quinn 27:26
2014 was like the heyday there was like wearables are going to change the world.

Chetan 27:30
Exactly. And I feel as any new thing comes, like, there's a huge hype cycle, and then it sort of falls and then drops off, stabilize, back up. And so and I think part of it is that at least for for everyday consumers is that people didn't see the huge sort of big use case or the big benefit from from doing I think there's definitely some benefits, walking steps health, health monitoring, sleep monitoring, I think is one of the one thing that folks really appreciate. But I felt like there was more excitement than the actual delivery. And I'm curious, just being an entrepreneur in the space entrepreneur in the space, what are the the larger trends you're seeing in wearables overall? How is the thinking changed over the past, you know, 10 years or so?

Quinn 28:18
To echo what you just said, I think there has been a lot of hype with a lot, really a lot of what do I do with the data? Yeah, I don't know if you've ever heard this. I have a business coach, and we kind of talk about this, like CEO roundtable one. Like, are you a vitamin? Are you a cancer drug? Like, are you building something that someone cannot live without? Or is it just a vitamin, and I think the wearable space in general has suffered from that? And I would be lying if I said we didn't also like you're trying to find your fix. What I know is, that the more we focused on the problem less on the technology, the better success that we've had. So the problem is, how do I measure movement in real world environments? Heck, if you could do it with a little coin, I could put my pocket. It doesn't matter if it's sensors in your shoes. that's the issue. How do you solve that issue? Now we're starting to kind of get that better success but yes, it's it's it's been a challenge.

And to your question, What trends do I see? If anything, I'm seeing this push to *unobtrusive data collection*. If you look it I think that's kind of where we come in, which is exciting. But anything that has to do around smart fabrics, I think is really exciting. I think their issue is you have to power them still so people have to put on like battery packs. Bra, on the side. I feel like you're gonna have to sort out that hardware issue. But I think any wearable that's unobtrusive and melts into the background of what I already do, those *are the ones that will be successful: built into a shoe built into a shirt built into my pants, those things are going to be what successful, what I think and this is maybe my, my bet, but you can't have a human being. Think about it. That's why the aura ring and rings are super cool. It's like, it just needs to be there*. And then all of the passive data collection, I think is powerful. I also think we focused on healthcare professionals that work in sport, but the connection between the healthcare professional and the patient or the individual with objective data around their health, that is like non-negotiable, that's not going anywhere. And wearables have huge promise there

Chetan 30:44
What's interesting. I think what you said makes a lot of sense, the idea of things kind of being sort of in the background, or you have to think about it. But another thing I think is interesting is I think that wearables can fall into two camps. One is going to is ***enhancement*** is that I, my life's pretty good, but I want to be better. And the other thing, which I think which you guys fall into a bit, is where you're actually ***preventing*** illness. Right? So that's much more of like a pain killer like nobody wants to get sick. Like that's, that's a really terrible condition. Totally. And I think what's interesting about your angle is that your tech can actually do both. You prevent, you can be a check engine light, so to speak, but you can also be a performance-enhancing piece. And do you feel that most of the other kind of the, I guess the the exciting trends in the space, are they tending to do both or one or the other?

Quinn 31:40
I think it's nuanced. So just on that point, *about performance or prevention, it's two sides of the same coin.* So imagine this cycle is more cyclical. Imagine I am not healthy. And I'm using a wearable plenty or something else to get healthy. Well, you have to be healthy to perform. So now I'm performing at a high level, something happens and I go back, and I'm not, I'm dealing with an injury or something. So you go through this cycle over and over and over again, it's kind of continuous, you kind of slip back and you go forward, like that's what human health is. And so I think the ones that will be widely used will follow or fall into both camps. And so what I think is the ones that just say, Hey, we're aware would help you to form the best, like, I don't know, if you're going to be around, you kind of have to do both a little bit. Because I think it's the same continuum, just kind of opposite sides of the same coin.

Chetan 32:39
Awesome. So I want to dive a little bit into kind of your I think, the I think I love what you guys are doing now with athletes, I think that is obviously a huge need their huge potential there, I want to speak a little bit about kind of your larger vision of how this can be useful for everyday consumers. But before we go there, I want to chat a little bit about investors. You know, investors are something that I think a lot of young entrepreneurs have to think about. And you guys have a unique space, you're in the hardware space. And I'm curious how it's been in that journey, you know, obviously, hardware has a bigger, a bigger fish to fry in many ways than software, and, you know, with some of those failures, and, you

know, how has that communication been with investors along the journey? How do they feel now, what's gotten them worried what's gotten them, you know, comfortable or less worried, if you could share a little bit, that'd be super helpful.

Quinn 33:33
So having investors is one of the most challenging but necessary things that you have to do, especially if you're doing hardware or anything that requires more capital. If I'm building a software, alittle piece of software, you don't necessarily need that it's a different story, hardware you do I need to go and do PCB runs and hard and higher firmware engineers. So it's been really challenging, honestly, like the money that we've raised. We have institutional investors. We have amazing operators, we have the founder of Oura who is an investor. We have just some amazing folks. But it just takes a lot of time.

The question about how have investors been not that good in terms of us struggling with hardware, like, you know, you make a pitch that your system is way more stable than it actually is? Maybe that's what you think, like you're not lying. But then you get out there rubber meets the road, it starts failing and breaking and investors are like what, you know, and so you have to manage that. I think that I've had periods where I've been much quieter with the investors that we have now I'm very unemotionally honest, I don't really care if they're upset or not. I've learned the best. The best way is just to communicate exactly what you're learning in real-time, give or take a month, you know? So

But I do see there's an appetite. Like there are lots of investors that like hardware, you just have to go, what if I actually, that's a big lesson that I've learned, *pick your investor target list very, very clearly* do not go after an investor who does not invest in hardware. What are you doing? Like and I've died made this mistake, even as like last year, like spend the time going after investors who are excited about health care, and hardware or wearables in performance of whatever but like, be very thoughtful, in who you're going after, we'll increase your batting average substantially. And I don't think I don't think I fully appreciated that. Find the people who cares about the firm, find the people that you think would get what you do, and go and talk to those people.

Chetan 36:02
With the investors who are more hardware savvy with the kind of the founder of aura, did they were they more did they expect some of the failures and some of the

Quinn 36:11
solid? Exactly 100%? Yeah, yep.

Chetan 36:14
That was cool. They were like, okay, yeah, it's par for the course. Yeah,

Quinn 36:17
like, obviously, they're not stoked on it, but they get it. So they're not like mad. They're, it's more like, ah, that's too bad. But we understand that hardware is challenging you Okay, so, like, I had one investor who had had experience in hardware, maybe this is four years ago, maybe 2018 2019. We're suffering from Wi Fi issues, we blew a couple big opportunities with customers. I blew a SOCOM

caught not blue, but like it didn't work out with these names with it with this navy seal group. And our investors are like, Oh, my God, okay, so what's happening, but they dug in, they're like, Okay, let's go find some consultants, let's get an external review of the actual technical stack and the hardware, maybe we need to drop Wi Fi and wireless and go storage onboard. And they were very helpful in navigating that with me, maybe they didn't love it. But since they had experienced on hardware, they had a Rolodex of folks that we can go and talk to that worked at this chip company. And so again, it just comes down to make sure that you're choosing investors that understand your space, even *if you get a term sheet from two, I would go with the group, even if it's a lower valuation, I go with the group that has some background in what it is you're doing.*

Chetan 37:35
Makes sense. Great. So I'd like to move forward and kind of think a little bit talk a little bit more about kind of the larger vision of what you guys are doing. So have you got obviously guys have a little bit of momentum right now with with athletic teams? And what are you guys thinking of that larger vision with? You're speaking about some of those deals with some shoe companies? Is that something that you see as a near term thing? Or is that a little bit further out?

Quinn 38:01
I think it's, you know, if you look at phase one for us is like elite athletes. Phase two might be your prosumer, competitive health conscious individuals, your bio hacker types. And phase three would be your general consumer, like your parents and my parents.

I think we're working on Phase Two concurrently with phase one, with larger brands that could help us with distribution. What I do know about phase two, though, which would be like your marathoners, your runners, your weekend warriors, they might own an Apple Watch for environment and an Oura like, like, literally, we have a couple 1000 People that have signed up on our website who want that product as soon as we're ready to go to more of like a competitive athletic consumer type. That's obviously super exciting. But one thing that I can tell you is we ask in our signup form, why people are interested to a tee, every one that comes to us has some underlying movement mobility issue. Everybody, hey, I hurt my knee. 10 years ago, it's never been the same. Hey, I hurt my knee biking last year and I'm running, I kind of still feel pain.

So everybody, even if it's reporting, even if it's for performance, there's this subset of learnings that we've had where it is people that are dealing with mobility and movement on the neurodegenerative side might be one of the most exciting. I have a couple of people that are using our products that have Parkinson's and neurodegenerative conditions called FSHD. And they use us daily because for us, you know, if you use a wearable like a whoop or something gives you like a strain score for them. They're using us as a way of understanding cause their movement is so closely associated with their general health. They use it every day because they want to check in on that.

And so when I think of like broad consumer play, I am very clear I'm very aware that it's going to be even in the consumer side, with individuals that are managing issues related to movement and mobility. That can be neurostroke, Parkinson's, people that have like underlying hip issues, knee issues, Achilles ankles, they're still athletic. That's the population that we're going after, for sure. And that's hundreds

and hundreds of millions of people. But it is not, hey, I'm 25 years old, I'm healthy and have had no injuries. I'm great. And I want to perform like they might buy us, but it's going to be like a vitamin, the thing that's going to really stick is if you're dealing with something, or you, you've dealt with something really bad, and you never want to get back there. That's also a theme that we've had is like, I'm just worried. Like, when I ruptured my ACL, it took me out for like, two and a half years, and I just don't want that to ever happen again. It was depressing. I'm sad. So I want to buy your product. So I'd never have to have that happen again.

Chetan 40:57
Got it. Okay. With your second tier vision with sort of the *prosumers*. When do you expect that something might be on the market?

Quinn 41:09
I think we're going to focus maniacally kind of on this NCAA and pro for the next 12 to 18 months. I think we're starting that kind of phase to now almost like pilot programs with some footwear brands, which could be really exciting. You know, I don't want it to be too long. But I'd say between a year and a half and two years away, which now that I'm 40 years old, if you said that to me when I was 20, and like, Oh my God, that's a lifetime. That goes by so fast. It's crazy. But I think about a year and a half to two years. In fact, we literally want to roll out a beta program with like three or 400 individuals in q3 next year, so it is yeah, it's gonna come soon, for sure.

Chetan 41:48
And is that vision? Would the sensor be in the in the foot in the shoe

Quinn 41:53
itself? Or in the shoe itself? Yeah, yeah.

Chetan 41:55
Okay, got it. Yeah, amazing. So me, I

Quinn 41:57
think that's the ultimate in the shoe. Yeah. Well,

Chetan 42:01
it's like the next version of like, the, the the Air Jordans, right, the aerosol said like kind of 80s. And now you have like a wearable tech piece. Yeah.

Quinn 42:08
And actually, like, technically, you need to have wireless and piezo, electric self charging. Once you don't have to remove the sensor from the shoe. Imagine that, like, *I literally see a time in the next couple of years, where sensors will be shipped in shoes, whether you turn them on or not, is going to be up to you. But they're going to literally be embedded there, you can turn on it for five or 10 bucks a month, but it's literally going to come in the footwear.*

Chetan 42:36
Amazing what an interesting vision was interesting vision for the future, I think. I think it's a very, very cool angle for wearables. And I think it'd be something that I think, could offer tremendous value for a lot of folks. And this is medical vision.

Quinn 42:50
The cemetery of wearables, companies is substantial, substantial. Going back to like Jawbone like I remember that company, I met a bunch of folks here, like I've been around enough to like, I know lots of people that I've met at conferences that those companies are no longer smart jewelry is like so many of them have come and gone.

I think the enduring ones, which is probably also what influenced our decision is it has to be rooted in healthcare costs. The *wearable has to be rooted in health care performance is a part of that, but you have to be healthy to perform. But it has to be rooted in longevity, and health care, and living a happy fulfilling life because I'm, you know, managing my body more* like that's the that's what I like about all the CGM companies, which I think is amazing. Ultimately, all of those decks calm based ones, the levels, the various all those companies, they're awesome, because they're appealing to people wanting to take take control of their own health. And so they'll always be around like that's now a category that I don't think will ever go anywhere. There's different takes on it. But like, that's smart, because it's based in healthcare, human health.

Chetan 44:07
Totally, you know, as you're kind of speaking about your product, actually, about my dad, he had a stroke a number of years ago was a small stroke, but and he's recovered a lot of functionality, but his gait has been affected. And he actually doesn't actually always have the awareness of if it's getting better or not. It

Quinn 44:22
flares up, I would imagine, sometimes it's better. Sometimes it's worse, you know,

Chetan 44:28
and to actually understand. So my mom actually has to look at it and tell you no, say if his game is getting better, getting better or worse, and to have a piece of tech that can objectively measure that. Especially

Quinn 44:38
if it was just imagine your dad just put on his shoes, even if he didn't even look at the app and your mum did. Like just was like, Hey, we're doing well where maybe we've been walking a lot and exercising and eating well, and your gait speed and a symmetry so they're like really stable the last couple of months. That the feedback loop that's like okay, whatever we've doing has been good for you. And so let's stick there. And so that's where I think we're going to be more on that general consumer, when *the hardware is just in the shoe always there, I put on my shoes like normal, it collects the data, it's just passive.* That's what I think will be like plantago specifically will be like pervasive. I just know that we have to get there a few some logical steps. And that's why like, whatever an NBA team loves

our product and uses it because they have like a very, like burning need for it. But everyone's going to need this at some point.

Chetan 45:32
Absolutely. Now Quinn. And this is super exciting vision. Really appreciate you taking the time to shop. With us, I think we really used to have a lot of builders out there and all that entrepreneurs. So you know, just in sort of a closing sort of few moments. Is there anything else that you'd like to share? And would you be open to sharing how folks can find you online and more about Plantiga.

Quinn 45:53
open for people to reach out to so any builder that I might not have the time, which I'll tell you, but like, definitely ask questions.

Chetan 46:01
Awesome. Thank you so much, Quinn. And thank you all for tuning in for the last little while. And looking forward to seeing you on the next Liberty. Equality. Data. Podcast.