



Stanford eCorner

The Path to Palantir [Entire Talk]

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Stephen Cohen reflects on his journey from Stanford computer science student to co-founding and building Palantir Technologies. Cohen extolls the joys of hacking projects in school, shares thoughts on the future relationship between man and machine, and shares stories from the colorful early history of Palantir.



Transcript

Thank you. So I was thinking it would be fun to come here, come back to Stanford, my alma mater and just tell a few of the stories, basically the path that led from really where you all are sitting right now to the stage up here in Palantir and all the other things that have happened in the last eight years. So, firstly, how many grad students do we have in the room? Okay. And then how many undergrads? All right. And of the undergrads how many SLE kids do we have in here? Do we have any SLE kids? Okay, that's actually kind of funny unto itself because I was going to start the story with the story of SLE, my beginning. I was a SLE kid, my beginning here at Stanford. That's actually pretty funny there, there aren't too many in here. So, I was fortunate enough to grow up around here in Fremont and during high school, I don't want to date myself here too much, but I worked on an online grade book software company during the first dot com bubble and so in those kind of formative adolescent years was able to jump outside of the kind of narrow high school bubble and see a bit about how the world worked in the world of entrepreneurship. You can probably take a few guesses at how much I knew about what I was doing that I was attacking K-12 when still being in K-12 and education isn't exactly the most lucrative market, although it's gotten a lot better since then. But it was very helpful to get to kind of see things from an outside perspective, see what actually worked, what didn't worked.

I snuck in here, went to a few lectures at Stanford. Basis has a business plan competition, I jumped into that and I don't think I ever won a single business plan competition. I learned business plans are not my forte but I also learned that Stanford had the most intense concentration of traditional talent I'd ever seen anywhere and there is this special energy, this aliveness to everyone here and this openness towards the world that I was so excited about being a part of. And my number one - the consuming desire was to take the talent here and to just work on changing the world, on transforming things. And so, you know, those first few weeks freshman year are always daunting; show up there in the SLE dorms in Florence Moore - was in Fason, and you talked to the kids and they are just as brilliant as you imagined and its traditional talent is just overwhelming, how much is there. But the - I had this nagging feeling, whereas the traditional IQ was incredibly high and incredibly concentrated, what I was really looking for was this type of worldly wisdom about how to take the world of ideas and actually connect it to the real world to actually generate an impact with all this and this is what draws so many of us here to Stanford in the first place and I was struck by how little of that knowledge kind of existed within the institutions. I've learned since then that so much of entrepreneurship simply can't be taught, we have formats like this and I think they are fantastic for sharing the little bit that can be shared. So much of it just has to be learned through experienced but this kind of recognition that there is a difference between traditional IQ and the kind of entrepreneurial disruptive force and that that later category needs to be learned outside the traditional bounds of institutions like Stanford. It was a very important starting point for just how I went about doing things here and hopefully that may help inform how you do some of the stuff. So kind of recognizing there was no single linear path that would lead to an entrepreneurial outcome, I immediately tried to jump to non-linear paths which for me meant working on products.

I love working on products, of course since my last one was a K-12 grade book, I don't exactly know if my choice of product at this age was particularly great but I had some fun ones in those opening years. This was at the beginning of wireless internet taking over, everyone had these routers, no one had any idea where to place them. So I had this idea that I would hack the network card in my laptop and I got this old crusty card from my house in Fremont. I got - I played on the varsity tennis team in high school and I got an old tennis container and a tennis ball, put a laser mouse on top of it so I could track 2D coordinates with this card and then I hacked into the driver in this laptop so I could pull up the signal strength readouts and effectively build a 2D topological model of the signal strength in a room like this. Now what did this actually amount to? Well I was this freshman a few months into Stanford and I've got this card that's roughly sized like this and I am walking all around Tresidder and everywhere else with this tennis ball duck-tape contraption in rows probably looking like a crazy person just back and forth mapping out all the signal. Obviously that idea didn't exactly evolve into Palantir but... But, yeah, you know after that I started working on an augmented reality toolkit; it was actually part of my senior project work. And what it did was it would take webcams and it would find these elements in a scene and basically project a 3D matrix onto that so it could determine the 3D coordinates of what it was seeing. Anyways, you could rig this thing up to build a 3D mouse. So, I wrote a 3D mouse, I connected it to Quake II which was just recently open sourced and there you have it; you have this new way of interacting with video games with your computer.

You can just move around and move your hands to do things kind of Minority Report-ish and I figured that this could be next big thing. And I talked to a good venture capitalist friend of mine, Ashmeet Sidana, who I think now is a partner at Foundation Capital and he said, Stephen, it's a great idea but it can't impact the real world. The entrenched players in this market, these console manufacturers, they are the ones who control the distribution and because of this - the central feature of the marketplace it might be a good product, it might be a good idea but it probably won't be a reality. And so of course this like really bummed me out. This is not what you want to hear here and any entrepreneur has plenty of stories like this where they get the bad news but sure enough years later, how many of you all have used a Connect before, right? You probably have played with PlayStation 3's variant of it. We got that exact same technology and sure enough it came from the console manufacturers who controlled most of it. So he was right but my - the story I am trying to paint here is one of working outside the traditional balance of the institution here at Stanford while still leveraging the resources that were available and still longing to find a way of connecting that world of ideas and products to the actual real world. The next kind of story in this adventure was doing research with Andrew Ng, jumping in and learning as much about AI as possible. How many computer scientists in the room, could you raise your hands? So what is this like 15%, maybe 10%. So the computer scientists here can particularly appreciate this.

I grew up watching Star Trek: The Next Generation. We've got Commander Data. We have artificial intelligence in the ship's computer, it's everywhere and it's this incredibly powerful idea that computers will eventually catch up with generalized human intelligence and so as a computer scientist when you first start learning about modern AI, as statistical machine learning, at least for me the very first thing you notice is this stuff is very, very hard. Anyone who has taken CS229 knows that feeling in particular. Andrew Ng is the best teacher for it; highly recommend doing anything you can with that guy. He is great. And as I learned AI I tried to mine that treasure chest to find something; an idea so powerful that it could punctuate from that world and transcend into ours and have a big impact. I had the same kind of nagging sensation I had that freshmen year in SLE that these kids, despite being really smart, there is something that may be missing. And, with the AI research, I think modern artificial intelligence is - it has these brilliant, elegant models, these kind of topological visual analogy models for how to do classification, how to divide up problems. But they are incredibly quantitative and they tend to deal with problems that have a very well defined structure.

And there are some very clever algorithms and there has been a lot of clever algorithmic breakthroughs I think in the last 15 years but the nagging sensation that I ultimately couldn't kick is that in the final analysis AI is probably more 'A' than it is 'I'. It's a little more artificial than it is - the problems are particularly artificial and the solutions are not quite exactly what I would call intelligent. They tend to be a little more linear. They at least don't analogize to generalize intelligence in the way that one would hope. So once again, frustration; it didn't lead where I was hoping it would but I decided to switch my game up a bit. I had been trying to find brilliant ideas and then find people at Stanford to help work on them with me and I decided to invert the model and try to find the brilliant people to work with and see what ideas they had. And so I went around and asked all my friends who were the most brilliant people they knew and tried to meet them and asked them the same question and followed the trail of brilliant people. And there were a lot of people who were pointing at this guy, Peter Teil, as the smartest person they knew. He seemed to be at the top of list. And so made it my goal to find this guy and talk to him and see what could get done there.

One of my good friends, Joe Longsdale who I think just did an interview in the daily, if any of you saw it, he ended up - we ended up co-founding Palantir together along some other folks as well but he was working with Peter at Clarium. Clarium was Peter's or is Peter's global macro hedge fund. He put in together right after he sold PayPal. Peter was one of the founders and the CEO of PayPal before it was bought by eBay. And sure enough, Peter was undoubtedly and still is the highest IQ guy I've ever met in my life. He is incredibly brilliant. Everyone was right. But the thing that was striking, this is back in 2003, the PayPal mafia still hadn't started too many of its companies, I mean the PayPal mafia as a term wasn't even that well known at the time.

And this whole network, they all had this energy and they were all putting together the wisdom of how to actually transcend that world of ideas and punctuate the actual world. And this wisdom was being put together in an ad hoc fashion.

It has been formalized now more through these talks, you can listen to Max, you can listen all these guys talk about their experiences and you can learn a bit about that kind of grab bag of tricks but they were focused on the same problem. And they've recognized it as the problem it is. And I think you can define the smartest, you could call it traditional or standard IQ. It's defined by what I would call confidence, a clarity and then a gracefulness in the execution when given a really tough problem. Whereas entrepreneurial talent or entrepreneurial potential, it's almost always defined by being able to summon this incredible interpersonal intensity and commitment to work on really hard problems for sometimes sustained amounts of time. And so when you see someone demonstrating that, that's when you say that's going to be a good co-founder and if they are brilliant too, well then hey you're really lucky, right. You definitely want to work with that person. And so next thing I knew I was interning at Clarium 40 hours a week, I was trying to graduate early which I don't know by some stroke of luck I actually managed to finish a few quarters early here. And I was - so I am doing 40-hour job, 20 units of CS and you know everything else that we all do here at Stanford as undergrads. And the only way to make it work, quite frankly, was to get in this habit of just blitzing three days in a row.

So for one quarter, that last quarter at Stanford, with the exception of the first and the last week of the quarter, Tuesday through Thursday I just wouldn't sleep. I would literally just work. I mean it was wild and I couldn't even imagine doing it now. I mean now if I don't get my eight hours of sleep I am quite a grumpy guy. But anyways these Tuesdays through Thursdays, I would just, you know, around 2:00 or 3:00 in the morning go down El Camino to the Denny's that's no longer there. It's now Su Hong. But I would go to that Denny's and I would say hi to Vladimir, he was the late night waiter. We became best friends. Embarrassingly got to know each other so well that he would just let me go behind the kitchen to the back and get the food myself which was quite something. But honestly it felt natural at the time.

It didn't even feel like that much of a push, just it felt like what you needed to get done and so I think its critical why you're here. If you find opportunities to engage, if you feel a resonance with an idea or a project or a set of people, just run with that. This stuff is so much of opening your mind and your heart to the possibilities of doing it, of being that engaged with an idea and even if it doesn't work, then you just gain so much from that experience. But so this strategy of focusing on finding the smartest people and surrounding yourself with them, I want to caveat it with an important footnote here. I don't think a people first strategy in isolation ever really works. I don't think that's successful. And one of the core reasons is that you want to surround yourself with brilliant people but also people who are getting stuff done and doing interesting things but in general those people only got that way because they love doing interesting things and they've learned from those experiences and they've changed them. So if you kind of do this like if you take this pro networking argument to an extreme, of just trying to find the brilliant people, if you're lucky, you'll actually, you know, get in front of them, you'll talk to them but when you are there you are not going to have anything substantive to discuss. You are not going to be in the world of ideas the same way that you would be if you really cared about them and focused on the substance first and so your best case scenario is kind of having a shallow interaction with them where nothing truly substantive can come about from it. But if on the other hand you care and you are deeply passionate about these ideas, about the products, about the things that can change the world and then you also focus on finding the brilliant people who want to work in those spheres I think this is really the right recipe.

And this was essentially the recipe that led to the early days of Palantir. So when Peter finally sat down and I guess this was like mid-way in 2004 and said I've got this idea, Stephan, let's take some of the ideas from the PayPal anti-fraud platform and let's try to generalize them to solve the countries counter-terrorism problem. And we'll start by selling it directly to the US government. And while we are at it, let's solve the generalized enterprise information management platforms that are out there. Let's hope big enterprises use a Silicon Valley approach to understanding their data. In this kind of context of being around these brilliant folks but also deeply caring for the ideas and the products, this was obviously a winner. This was what I had been looking for that whole time at Stanford. And so it was always right next to the Stanford institution, but never quite linearly connected. Yes, and so away we went, away we went. Those staying up Tuesday through Thursday, pushing and pushing I went from my last CS final, which I totally bombed, I think I got a C minus or something for the first time in that class.

I went from that last final to a little office, 3000 Sand Hill where Peter had actually started PayPal and that was the first day of anyone working full time on Palantir. We had very little time, only about eight weeks before a killer meeting with a guy named Gilman Louie who was at the time President of In-Q-Tel. In-Q-Tel, for those who haven't heard of it, is the intelligence community's venture capital fund. And they do a great job opening doors for companies in Silicon Valley and elsewhere that want to work on the US government's challenges. So we have this meeting, it's only two months away, and we don't exactly have too much product at the time so in this prototype crunch time in about eight weeks threw together a basic prototype. I would have to say - CS people in the room can understand this - it would be a little admittedly, it was a little admittedly light on the backend elements, the initial prototype, a little more focused on the lights and the fireworks and the front end. But it was a success and Gilman liked it and he began to open the doors for us in the US government. But before he left that meeting he said the most funny thing, which was, if you guys can't help us fix our counterterrorism problem, you've got a bright future in

video games. So I took that as a ringing endorsement. I'll share a few funny stories from those times, a few illuminating ones.

There we were crunching away and we were every other week basically flying out to Washington D.C. trying to meet with folks inside the government, get as close to our potential customers as possible. And just showing them our platform, showing them the prototype and asking them, what do you want? What do you need? But the real information came from looking at the point of resonance with the platform, getting them in front of it and seeing what they used, what did they like, what were their eyes attracted to, what was actually going on? Where were the real opportunities to add value there? And so we would go out there, we would gather this feedback and we would then drink a whole bunch of these things and crunch and get it integrated and do it again. And one of the kind of points that I think demarcated an element of success was when my government sponsor was introducing me at one of these meetings and he said 'everyone, I want to introduce you to Mr. Two Weeks. He can build anything you ever want in two weeks. So ask away.' And yeah, needless to say, again, it's another one of those that's what you want to hear. It's what Peter would say, it's the right kind of problems to have. But it was definitely - definitely increased my Red Bull consumption. And so in this process of fleshing out the product and finding the exact market fit, finding exactly how these pieces fit together to fulfill that vision that Peter had originally outlined, you know, there's not really any easy path through, and there's not really any linear path through, it's the same thing where you throw the entrepreneurial intensity at it and then you kind of see what sticks.

But you can look and I think it's very important to look for the demarcation points that actually indicate you are succeeding. And so the final demarcation point where I would say Palantir went from more of a provision idea to a full conviction for me personally, when I knew that we really had an opportunity to change things and impact the world, it was one of these meetings, get the Mr. Two Week introduction and it was a conference room with maybe 30 people in it. And these are all government folks, all in suits. Government meetings are not terribly exciting; they tend to go at quite a slow pace. But this one was more exciting. People were energetic and they were really excited with what we had and they could see the disruption. At the end there was a moment where the meeting was breaking, everyone was walking away, and out of the corner of my eye I see at the other end of the room, two senior government executives fully in their suits and what not, grown men who have been in government service for over 20 years, stand up and give each other hi-fives. So when your government guys are doing the hi-fives with each other saying to themselves like how this is going to change things, that's when you've done it. I mean not done it, but you're in the position to do it.

That's when I knew that if we could just follow through with this, if we could make it work, we could really, really change things. And that moment of founder conviction, that - it was a very important moment. Roughly around that time too the conceptual vision for the product stabilized and those are the moments where you start to gain clarity on kind of what the heart and soul is of what you're doing. And for Palantir what the fundamental aspiration the platform is, it's basically to enable humans to perform the analytical reasoning that for whatever reason machines can't seem to replicate. There's a certain form - and we could say the kind of simplistic version of this is to enable the ideal human computer symbiosis, but I think that doesn't quite do justice to some of the more subtle aspects of this, the idea here, which is firstly accepting as computer scientists and engineers and just people who are in the technology business, that there's actually a lot of computers can't do. It could be for practical, empirical reasons, it could be for theoretical reasons; I find the theoretical possibilities quite interesting themselves. But accepting that there's these realms of reasoning that computers are particularly bad out without human health, like for instance figuring out what the right framing is for a problem, you can't even really describe a problem to a computer without a framing on it that pre-exists. So you certainly can't hope for computer just to kind of tell you 'hey, here's the right framing.' Computers are very bad at finding patterns and data unless there's an incredibly dictionary-long instance of a very well constrained, well understood problem, then it can begin the finding certain patterns. And for the vast majority of human analytical problems it's just not it. It's sparse, it's isolated, things are connected in ways we can - we have a stronger intuition for rather than a rational reason.

And so because of all these facts, really the right kind of future economic relationship for man and machine is one that deeply respects the capabilities of what only man can do, or just at least for now what only man can do. And also of course you want this to be the computer scientists who are recognizing this so the machines can do the absolute best of what they can do the algorithmic reasoning; write the computational machinery that they - the computational processes that they can execute trillions of times faster than we can. And so this is the Palantir idea. The ultimate Palantir aspiration. But I think that this idea is actually just one part of a much broader opportunity I wanted to talk about here before we open this thing up to questions. And that opportunity - well I'll sketch an image. So take the entire domain of human economic activity. Take all the things we do, all the things we want to do, all the things that make that up. And now draw a line that divides on one hand the precisely definable and on the other hand everything that's not quite that all of the related phenomenon that for whatever reason can't quite be precisely pinned down. So we can probably precisely pin down, yes or no, am I hungry? But we can't precisely pin down how hungry am I, what does that feel like? We can assign a number, we can make an approximation, but that is a phenomenon is at best exactly that an approximation.

The fundamental fact of it, is it exists in something that's much less precise but just as real and just as tangible. I think that

line that separates that precisely definable from that which is not this is basically the line where algorithms can - let me backtrack for a second. This may just be obvious from like a technology entrepreneur's standpoint but I'll say it verbatim. I really believe that with all the advances we've had in computing, computers will do all things computers can possibly do. So when it comes to - if you accept the kind of the extrapolation there, then the next question naturally becomes, what can computers do? If the answer is everything then we can expect computers to be coming and taking away a lot of what we do day to day. But I strongly believe it's just not. Actually there's a lot that computers really can't do. And there's - also - I'm very interested in the reasons why quantum computing - I hope we don't have any administrators in here - but I spent last quarter sneaking into the history corner Tuesdays and Thursdays auditing the quantum computing course that Stanford just started teaching. Because it's deeply fascinating stuff and potentially in quantum computing there are some answers to why classical computational algorithms might not be able to get certain human reasoning tasks done. But nonetheless, recognizing the depth and the subtlety of the qualitative domain, and recognizing it as disjoint and separate from the quantitative domain, this lets you start seeing problems a little differently.

There's a lot of interest in Salesforce, other CRM products, a lot of web analytics, and these are all essentially domains where we are collecting - we're building a quantitative universe. I mean the space of all big data is one where we build a quantitative universe and then we study it. And one approach to this is to say let's get as much data as possible and then let's develop the most sophisticated algorithm as possible for finding patterns in the sea of quantitative data. But I ultimately don't believe that will be terribly successful. I think the much more important questions are let's study the human aspects of this, the qualitative aspects of the problem. What are we trying to get done? What's actually happening? What are the subtle aspects of this process that when we actually clarify, then we can actually learn that's where we want to collect the data, that's what we want to analyze, that's what we want to figure out. And through the study of the qualitative phenomenon that dovetails right next to this quantitative phenomenon in the actual universe, through this we can then optimize how we use our computers to actually do what we want them to do. And this place, this is where I think we're going to see a lot of technology companies in the 21st century. I think this is much closer to the actual 21st century big data analysis problem, at least much more so than getting more and more fancy algorithms to kind of do the same problems we've already seen. So, yeah, with that I will turn over to you all for some questions.

Did Gilman Louie actually invest? Oh yeah, yeah. How does this insider views apply to natural language, the natural language processing via computer? How does this perspective shine on that? Yes, so the question is how does this perspective kind of shine on the natural language processing problem? That's a great question. So I mean immediate thing is that you probably don't want NLP, the stuff you do like - good NLP will probably be a lot like Google where it's disconnected from the intentional aspect, the actual direct value creation aspect that us humans are actually focused on. It will probably remain more of a tool than kind of a full turnkey technique. I'm less bullish on translation technology that can capture all the suddenly and complexity of grammatical constructs and believes that all that will kind of converge with this natural translation of meaning, than more of kind of the brute force stuff, like we'll do a lot of synonyms for some phrases and then hopefully the other smart human mind put together with the rest of the context. I think the latter is where we'll see most of the advances. But yeah it's a question worth studying. So you said there was a line dividing the domain of quantitative and qualitative things an algorithm can approach. So does that intrinsically mean that the line itself, where you draw it, is a qualitative line? And if so re-defining the qualitative problems to make them quantitative problems, can you apply an algorithm there to do that? This is a great question and you've picked up on the subtlety in this explanation that at least the computer scientist in the rooms will probably find very displeasing, distasteful. I have a hard time with this idea unto itself because of exactly this.

The problem with - The question please? Yeah, so the question was kind of in a nutshell the line that divides quantitative phenomenon from qualitative phenomenon, must it be - doesn't it inherently have to be a qualitative line? And then kind of further is there hope of developing algorithms that could perhaps figure out where this line is or maybe pull some of the qualitative problems into the quantitative domain? You know I think the line's constantly moving, I think it's fuzzy and whatnot. But the logical issue here that you highlight is that I'm defining qualitative negatively, not positively. Because if we could define qualitative phenomenon in a very tight, precise description then of course we could just turn into a quantitative phenomenon and we can use a computer to solve it. And so it's one of these things that touches a bit - I've warned you all I was a SLE kid here before I started talking so you could hear a little bit of a SLE, a little Mark Mancall or Susan here. But in essence there are these kind of ambiguous aspects to a lot of these human phenomena we experience all the time, including subjective phenomena, that because they defy that precise logical description, we cannot turn them into algorithms. And I don't see that phenomenon is being fundamentally tackleable by these quantitative approaches. But we can definitely chip away at it. So yeah, the real invitation with this framing is to look at problems, to dive into those qualitative subtle aspects. I was talking about going back and forth to D.C. working on developing our product, and you know there's all of these kind of product development formalisms; agile; you guys have probably studied a whole bunch of them in some MSME courses here.

But the kind of framing I had, just reflecting that problem is there's a lot of really deep, subtle stuff that users ultimately don't know what the product is they want. I mean how could they, that's why you're the entrepreneur. If they knew, they would just make it themselves, they wouldn't really need you. And the only way you actually seek satisfactory answers to these questions

of what's the right product, what's the right feature is to look at these subtle aspects and study them in their own right, and really appreciate the depth of them as a phenomenon unto themselves. Not just kind of crassly reify them into a logical conception that resembles much more quantitative-friendly truism, if that makes sense. Who else? So there's a lot of literature recently about left brain and right brain and who's going to - what should you be teaching your children to do, right? So should you be focused on quantitative computational or creativity? And not necessarily to say those are separate but I am using shorthand here. So thinking about Palantir and what you do, you're using computers to surface things for people so that people can do what they do best. Is there a best background for the person? Who's the best user of your app and what kind of background do they have? Yeah, that's a great question. That's a great question. To sum it up, it's kind of reflecting on this qualitative, quantitative thesis, what makes the best user for Palantir? How does that relate to it? So the strongest users we've had, they actually have some of those entrepreneurial qualities.

They really want to get things done. They want - in their enterprise they care deeply about solving the actual problem, accomplishing the mission. So they have that entrepreneurial quality and they almost always categorically have another feature, which is they're incredibly frustrated with the organization's kind of existing technology base, the inability to use all these wonderful quantitative tools to actually impact the mission. So starting from that base the frustration and deep concern for the mission they see Palantir as a lens through which they can better understand what's actually happening in their organization, what's happening in the ground reality? It's - at the end of the day a lot of - they're essentially respecting the deep and complex subtleties that are actually out there in the real world, but then by appreciating those complexities able to map a lot of that information back into Palantir, and then take advantage of our facilities to enable collective learning, collective pursuit of the objective there. But, so the relation, I don't know if I can break it down into what classes people should take or what folks should study and I wouldn't dare to jump into that debate anyway. But in essence I would say it's a deep appreciation for the complexities and subtleties of the ground reality. But then also just a deep desire to get leverage on it collectively as an institution by pulling it into Palantir, being able to model it in an accurate way and something that does justice to those underlying truths. So I have one question from Professor Kosnik and one from myself. So the first is, he told me that you interview up to 50 people a day, are you guys expanding? 50 a week. Yeah, I have my poor executive assistant here, who can attest to the scheduling nightmare.

So with 50 people a week we talked about how it is really important to find those interesting people, what do you look for those interviews or how do you know that yes, this is someone that's going to be able to work for me? That's the first question. And the second question is you had all these different ideas you're really passionate about. How do you find which ones to focus on, and which ones to spend those times going around with a cart in Stanford versus other ideas? I think you have to push a lot of carts around Stanford before you come up with right idea. So you know definitely keep your eye on the zany person with something not working, they may be coming up with something that will work a bit later. Yeah, so the first question, what do we look for at Palantir? What's going on in these interviews? So I like to try to meet every single person we hire, perform the last interview in the Palantir process, sometimes earlier interviews. And there's a lot of subtlety and complexity to it too, so I don't want to pretend to break it down into a basic rubric or anything else, it won't do justice to it. But the essential qualities that we look for even though they come in many different - various forms in different people in different positions of the company, is the highest concentration of talent possible. That's number one. Number two, long-term time horizons. And number three, what I'd like to call generative personalities.

So I'll break those down. Talent, as I was mentioning before, I think talent can really be identified by firstly like a confidence in solving whatever problems that talent is kind of directed at. And then in the kind of competent problem solving in the competent execution looking for answers, there's actually just a deep gracefulness. So it's not just that the person knows how to answer the question, it's that they're even graceful in the process of answering it. This almost always means they add clarity; they clarify the problem structure and the solution structure. So I mean in kind of algorithms problems and whatnot this is at least easier I think to identify because the problems are much more well-constrained, but they're very hard. So the people who are able to confidently answer the question, clarify the basic construct of the problem and then even execute it in a graceful way, those are always the most talented. But it applies just as much so to domains outside of computer science, you know in sales context, in engineering contexts. You want a good salesperson to be able to clarify what the actual problem was, what was the tactical ground reality? How did they proceed through it? What were they trying to accomplish and how did they do? What did they do right, what did they do wrong? This is what you want on the talent side. Second thing is long-term time horizons.

This one's critical and it's another one that no one hit me over the head with when I was here. When you have that talent it's very hard to create a substantial store of value unless you really want to work on the same thing; unless you really are willing to dedicate your talent to kind of focus it through some duration of time on a particular task. And what we find out there is it's in many ways kind of a self-directed construct how you look at the world, whether or not you focus on a handful of problems and drive your satisfaction from solving them longitudinally, versus if you're kind of always jumping from one thing to the next you actually don't like to stick with anything for the long-term. And this is, I don't mean for this to suggest that like just do one thing and don't vary it. Like if anything you just heard from this talk, I was doing a hundred different things. But you

could still there's still some common threads to it. And that commonality, that's the long-term time piece, that's kind of - that's what we look for Palantir. And the third and last trait is the generative personality. And this is - you can be very talented, you can have very long term time horizons, but some of you might even have a professor that does this, they applied their talent and that long-term time horizon to kind of showing why a lot of ideas don't work or why they're silly and they're more hesitant to construct and be generative about proposing solutions. And it's very important I think in any startup to generate as much momentum as possible.

And so that means you want to take that talent, that long-term time horizon and focus it in the most kind of creative, energetic way possible. Does that make sense? That's what we look for. How do you bridge that gap between the engineering gracefulness of design and thinking and execution with the sales side and having clarity of I guess communication of the intended purpose of your solutions to a client base that's maybe not quite as aware as they could be? Can you say that - can you repeat that one more time? How do you bridge between engineering and sales so that you've got that gracefulness comes out in your salespeople when they're speaking to your client base? Oh yeah, no this is a very good question, basically how do we reconcile the engineer and the engineering aspects with the sales aspects especially hopefully in a way that constitutes some gracefulness of execution? And I would say the first thing is we probably focus a little less on the gracefulness of execution and more on this kind of substance forward perspective. We like to get the engineers and the people who actually add value as close to the front lines as possible interacting with the clients. It's basically we want to share as much of our fundamental substance with each and every party we work with as possible. Probably have time for one more here. Go ahead. I know you obviously mentioned your platforms are being used by the US government in terms of counterterrorism operations, but has Palantir considered marketing its products to other countries who are dealing with domestic armed conflict? And if so are there any set of legal ramifications to that in terms I guess even violating international law, I think, if your technology is fighting counterterrorism operations in places. Some of that's being called into question, does Palantir have any culpability in that, or is that..? No, I mean I don't - counterterrorism was an initial impetus for the company but it's a very, very small aspect of what we do these days. And with the principle customer being the US government, there's not unlimited leeway in other parties we work with and there's a lot of scrutiny.

And we just as founders care about it very, very deeply. So although there's always legal aspects, you get good lawyers, they help you out with these things. What really matters more I think are the moral aspects, the mission and the purpose, and we focus the most on that and making sure that we're having a positive impact. All right, well - There's still 10 more minutes if you wanted to... You know I'm going to leave that time for you all to come up here and address questions individually. But thank you very much.