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# REAGAN NATIONAL DEFENSE FORUM

## PEACE THROUGH STRENGTH IN AN ERA OF COMPETITION

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**DECEMBER 1, 2018**  
**10:00 AM – 10:45 AM**

**PANEL 5**  
**A VIEW OF DEFENSE FROM SILICON VALLEY:  
HOW CAN WE BETTER ENGAGE THE TECH WORLD?**

**Panelists:**

- Mr. Michael Brown, Director, Defense Innovation Unit
- Mr. Palmer Luckey, Founder, Anduril Industries
- Ms. Rachel Olney, PhD, Stanford University; Founder and CEO, Geosite
- Mr. Brad Smith, President and Chief Legal Officer, Microsoft

**Moderator:** Mr. Ryan Evans, *War on the Rocks*

**Video:**

[https://www.youtube.com/watch?v=d\\_71dhp8f4M&t=0s&list=PLHNOi2zcxo7sBxM7HfhmB\\_tf6QXeqj48K&index=9](https://www.youtube.com/watch?v=d_71dhp8f4M&t=0s&list=PLHNOi2zcxo7sBxM7HfhmB_tf6QXeqj48K&index=9)

Evans: Hello. So I'd like to get us started with a question that I'm going to throw out for all of you, that I'd like you all to respond to. The people in the US Government Defense Department have been talking about how to better integrate, how Silicon Valley in a tech world with our defense problems for a while. What progress have we made, and what more needs to be done?

Olney: Would you like me to start?

Evans: Sure.

Olney: All right. So I'll say, one thing that we've done really well and improved upon, and then two areas where we need to continue working. The first is opportunities for engagement have really increased. Of course, Mike can talk much more about DIU than I can. But both with industry and academia, there are a lot more opportunities for engagement through things like Hacking for Defense, or through things like DDS software, softworks, et cetera. So that's been really great. The two areas where I think continued work is needed is around ensuring that we can work with startups. And a lot of times we talk about it being a morals issue or a culture issue. And based on research

that's being done at Stanford by one of my colleagues, but then anecdotally, it's not a cultural moral issue, it's much more an economics issue.

Olney: Dealing with the US government is extremely time consuming, and often doesn't have the ROI that you get working with commercial industry. So making contract cycles not just faster, but simpler, is really important, and allowing companies to hedge their bets on the customer side, rather than dealing with a monopoly customer, is one [inaudible 00:01:39]. The second is that, we need to articulate dual use better. We treat a lot of technologies that are still in the research and development stages as dual use commercial off-the-shelf technology. But what that causes is, us to create essentially a entire group of small startup defense contractors, rather than truly buying the same thing that the commercial industry is buying that is moving faster.

Luckey: So I definitely agree that is largely an economics thing, and not necessarily a culture thing. The thing that astounded me the most, talking to a lot of people in DC over the last couple of years, is that, a lot of people read the press coming out of Silicon Valley, they read the press coming out of the tech industry, and they're like, "Oh, why do you guys all hate the military so much? Why are you guys so terrible?" And the reality is that most people in Silicon Valley don't actually believe those things. Most of them actually do support a strong military. They believe that it's important for the United States to have better military technology than Russia and China.

Luckey: They don't want those people to be defining the rules of next generation warfare. But if you're not actually in Silicon Valley, you get this distorted view, because you're only hearing from this kind of of radical minority that is controlling the dialogue and controlling the narrative, and making everyone else think that they have to cater this vocal minority. And what that leads to is weird, I guess weird strategic decisions. Rather than going in and saying, "Hey, let's figure out how to solve the economic problems as best we can." A lot of people think that what they need to do is soften their message, and kind of hide what the government really does. They're like, "Oh yeah, we'd love for you to work with our counter terrorism group. They do a lot of a medical supply delivery." And you know, I think that doesn't serve anyone's best interests.

Luckey: You need to be honest about this stuff, say, "Look, we're looking for companies that understand what they're doing, they understand who they're working with, and they want to work with US Military, and they're proud to work with the US Military. There's plenty of people out there who will do that. We don't need to cater to these people who are never going to be happy, no matter what you do on the culture side. What you need to do is fix some of the economics, and make sure that things get out of pilots, and into actual production. It's easier than ever to get pilots and to do some interesting stuff, where it gets good coverage, and the pilot gets done, and some interesting stuff gets out on the press.

Luckey: But it's very difficult to take that and turn it into real product and real programs, unless you're already in one of these large defense primes. And then what happens is, these little companies look at that and they say, "Wow, where are the success stories? Where are the new company ... " Like, there's no new defense companies worth over a billion dollars since the end of the cold war. So they're looking at the last 30 years and saying, "Hey, there's literally no evidence that you can be successful working primarily with the government, and then the investors say the same thing. And I think if the US

Government could focus on that problem rather than softening their message to make people happy who will never be happy, it would be better for everybody.

Luckey: I guess I would just try to frame this perhaps up front and build on what the two of you said by offering three things. First, there's a set of issues around cyber security, which fundamentally reflect hostilities that have been ongoing. This is not a battle that is hypothetical. Think about the 12th of May last year, the WannaCry attack on a single day, a single country, launched a single attack, and it hit 155 countries around the world. In the history of humanity, there had never been a day of warfare quite like that. And when we're talking about cyber security, you're fundamentally talking about attacks that are taking place within computers, on software, in data centers, on devices. The tech sector is the battlefield. So we are fighting that every day, and we have made some progress, but there is a lot more progress to make.

Luckey: What's changed in 2018 I think, is that we've seen these issues come to the forefront, where there is some angst among some people. And one can always debate how many et cetera. But there's been no doubt, that at Google, and Amazon, and Microsoft, you know, we've had employees who've signed petitions, saying, "Gee, we don't want our companies to do this kind of work." And I think that is something we've all had to work through. At Microsoft we've met it head on. But we've met it head on by saying two things. The first is, we want the people of this country, and especially the people who served the country, to know that we have their back. And we are going to provide our best technology to the US Military. But we've also said that we're going to engage actively as citizens in the democratic process on the issues that are raising people's concerns.

Luckey: Which fundamentally, in many ways are about the future of artificial intelligence, a future of autonomous weapons. What does that mean for the world? And of course that's of people ... of importance to everybody. And not just young people who happen to live on the West Coast. The last I'd say which I think explains a lot of this, especially when you read about the angst, is actually look at the poll this morning. If you look at confidence in the people who fight the nation's wars, the confidence is very high. When you look at confidence in the institutions that decide which was the nation will fight, namely the presidency and the congress, confidence is not at the same level. And so we need to take your word engagement, we need to show people across the country, that we're thinking about the issues that they care about, that we're thinking about them in the same kind of responsible way I think this nation has always thought about them, but doing it in a very forward looking fashion.

Brown: Yeah, Rachel and I live in Silicon Valley, so we're very in touch with the sentiment that was behind some of the employee protests that we say with Google and Project Maven that were reported on. But I agree completely with Palmer, that that's not necessarily a majority of folks in Silicon Valley, which we know is a very blue part of the country. In fact, we see that at the Defense Innovation Unit regularly, because every month we're surveying which commercial companies can help us solve this important military problem? And we're seeing an increasing number of companies that respond to that. Now, most of the folks who are responding don't tend to be the large global companies like Microsoft or Google, even though I really appreciate the stand that [inaudible 00:07:55] has taken, and that you've helped lead, and Jeff Bezos has been outspoken as well.

Brown: So even at those companies, we're starting to see the divergence of opinion emerge, rather than just one side of the argument. But, I'm here to tell you that, Defense Innovation Unit sees more and more companies responding, wanting to support the military. Part of it is what you reference the survey we saw. People do want to support their troops. But let's face it, it's also capitalistic, the best of capitalism at work, where it makes a lot of sense financially to support the Department of Defense. Because we represent a huge customer, and it's the right thing to do. Our job at Defense Innovation Unit is to make that easier. So, the Defense Department is not the easiest customer to work with. So what we're all about is, how do we work on commercial terms and conditions, work at commercial speed.

Brown: We try and get companies on contract for prototypes within 60 days. So some of the things that have not been associated with the Department of Defense, how friendly we can be to work with, is some of the mission of Defense Innovation Unit. And we have a lot of work to do in that area.

Evans: I just want to, before we go on, remind the audience that you can submit questions via the RNDF app at [RNDF2018.org](http://RNDF2018.org). And those viewing across the country can submit their questions on Twitter with the hashtag RNDF. I'd like to pose a couple questions for you guys. First let me see if I can get this slide up that touches on ... nope, we'll try later. But basically there's some great Reagan ... oh, here we go ... some great Reagan polling that really shows that ... sort of hits home with what many of you were saying, if you look at confidence in the military among younger people, it's actually not too far off from other age groups. And so, this sort of millennial problem that a lot of people have positive, might not actually exist.

Evans: Building on that Rachel, a few sort of related to throw at you. But as someone who founded a company working in this space, who also works with engineering students in Stanford and has a deep understanding of their concerns and views, what are the things that they are actually worried about when it comes to working with the government? And how is the US Government doing at welcoming these people and the innovation that they bring to the table?

Olney: So, what I would want to stress is that there are two groups of engineers that are really ... not just engineers, engineers and scientists, that are really important here. The ones that are staying in the private sector and are going to work for non-traditional defense contractors or other companies that are going to engage with the National Security Sector. But the second group are engineers and scientists who decide to work inside of the DOD, and especially those that are inside the military. And we have to be thinking about how do we engage both of those? What I would say is, engineers are the same in both of those groups. Obviously they choose different career paths. But engineers are actually quite simple to understand.

Olney: I think most people over complicate it. They're the same as anybody else in this room. We love hard problems. We're less a fan of somebody telling us, "Here, we found the solution. Go use you're engineering expertise to execute it." And so, when it comes to engineering applications, especially [inaudible 00:11:07] engineering fields, that people at a decision making level may not quite understand, leaving engineers that flexibility to figure out which technology they should be applying to that problem is really important. And so, this is both on in academia, of course you see this with Hacking for Defense,

they're throwing these hard problems at the students, and then allowing the students the flexibility to choose any sort of solution outcome to that.

Olney: Within the military, which I think is really important especially, because we need engineering expertise as a core competency of our military. I do not, and of course as the CEO of a tech company, I'm like, "No, no, just rely on me, it'll be fine." But on the other side of that, we can't rely on industry to be creating every single technology that we need to fight our wars. And so, fostering that internal talent is especially important. And those engineers want the same things that engineers on the outside want, which is to work with other brilliant engineers, right? If you're going to recruit a team, it's about having that first few key technologists that people want to work with, and then everyone else piles in. And so, really making sure we are concentrating that talent in one place is really important.

Olney: Defense Digital Service has collaborated with Army Cyber to do this really well. They have teams at the Pentagon that are working on some problems. And with that, what they did is they went out and they found some of the best talent and put it together. This is the same thing industry does with engineering teams. So that's the two things that I think are the most important. Not specifying the technology, but being really specific about the problem really baits engineers. It's even totally happened to me.

Olney: I was working on my PhD research, and I kept telling myself, "Focus, focus, focus, focus, focus, focus." I walked into a room where somebody was having a problem getting something manufactured, and I just like couldn't help it, right? I really, really love manufacturing technology. And even though it didn't touch what I was currently working on, I couldn't help it, right? I'm sure Palmer you've pulled all-nighters, because you found a problem, and you just had to work on it. Engineers love, love, love, finding solutions.

Lucky: I've pulled all-nighters helping other people solved their problems.

Olney: Exactly.

Lucky: And I didn't even have a good reason to.

Olney: Exactly, exactly.

Lucky: I've gotten better at that over time.

Olney: Yeah, yeah of course.

Evans: Great. Well speaking of some of those hard problems, I'd like to pull up the next poll item. There seems to be waning confidence, at least among the American public, on the sort of America's military edge. One of these key groups of technologies that we're told will increasingly define whether or not America keeps it's military edge or in the areas of autonomy and AI, Palmer, there's been a lot of anxiety expressed about whether Russia and China are pulling ahead on research into those technologies, and the United States is behind, because it's focused more on improving the sorts of technologies and platforms that we've already mastered. How do you view this problem?

Evans: There's also the ethical element to all this, which is more of a problem for us than of course for autocratic governments like Russia and China. So is the United States trapped in this unfavorable position? Or what can be done to change this? Or is this just normal, sort of American paranoia about the state of American power, and we're actually doing fine?

Luckey: We are in an unfavorable position, but we're not trapped there. So, one of the interesting things about artificial intelligence and autonomy, is that the more you deploy it, and the more you can learn, the better it can become. And so we're up against countries like China, that have no problem with doing mass civil surveillance of their entire population, and just collecting data on everybody, and doing whatever they want with it. And that does give them a big advantage in the sort term, where they're going to be gathering a lot more data. They're going to be able to do a lot more correlation and a lot more training, and that is going to help them. Not just in the military, but also in their private sector, which in the China is also exactly the same as their military, through their civil military fusion strategy.

Luckey: So they're going to have this really interesting loop, where they're going to get better at military stuff, better at civil stuff, because they don't have those privacy concerns that we have. Now, I'm not saying that we should start doing mass civil surveillance, so that we can beat the Chinese at AI. But what we do need to do is recognize that we are kind of at this disadvantage, because of the freedoms that we enjoy, because of the rights that we give our citizens. And we can't just be as good as them, or a little bit better than them. We have to think a lot smarter if we're going to beat them, even though we have all these privacy limitations, even though we have all these ethical dilemmas we need to work through, even though we're not going to deploy AI in these really spooky ways as quickly as possible.

Luckey: But then you take a look at places like Russia. Vladimir Putin recently said, "The country that leads in AI will become the ruler of the world." In quotes, "It will become the ruler of the world." It's like a Bond villain type of statement. And he's not saying that from a position of weakness. If he thought they were going to lose, if he thought AI was going to help us more than it helps them, he would never be out there saying that. He's saying it, in his opinion, from a position of strength. He believes they're in a better position than we are. And I think here in the US, we're-

PART 1 OF 3 ENDS [00:16:04]

Luckey: He believes they're in a better position than we are and I think here in the US, we're very good at building iterative improvements on things that we already understand. We have a great machine for building things that we already understand, but when it comes to some of these new technologies, especially the ones that have spooky implications for the things that we care so much about in terms of human rights, we are slower moving.

Luckey: I do think on the ethical side though, the right way to solve those problems is to move ahead full steam. We can't just say hey, let's slow down and let the Russians and the Chinese figure this stuff out. Because if we do that, it's going to be ... we're gonna be in a world where Russia and China are writing the norms. Where they're writing the rules of how AI is used both civilly and also in the military. And I think the United States made; did a really good job of leading in nuclear arms for example.

Luckey: The only reason why we were able to lead in that space and help define the norms was because we had a seat at the table, a credible seat. Arguably the biggest seat. And that is not the case for AI right now. And if it's not the case, if we can't get to that place in five years, or ten years or whatever it is that timeline ends up being; we're gonna be in a really spooky place.

Luckey: So we have to keep working on these problems. We need to keep in mind that the United States has a long history of doing the right thing with better technology. We can't assume that the United States is going to fail and that our checks and balances is gonna fail. And that simply by having better AI, we're gonna turn into a totalitarian regime. You don't become a totalitarian regime by having better technology. You become a totalitarian regime by wanting to become a totalitarian regime.

Luckey: The Chinese are pretty good at that, the Russians are pretty good at that. I think a lot of the countries that they're spreading their influence to they're gonna start spreading these ideas to those countries as well. And we have to make sure we're able to meet them there.

Evans: Great, Brad, you were earlier talking a bit about oh, give time for a round of applause. I take that. Very inspiring.

Evans: Brad, you were earlier talking about the reactions to this sort of ethics and policies that you face with your employees related to working with the government, particularly on defense issues. I'd love it if you could talk a bit about a few different things. One what are the lessons that you've learned. Not just from the experience of handling this with your company. But from what you've observed in other companies. And two related, how do you view this changing as what Microsoft does, and the defense space evolves over time and third, and I'd like to get all you to react to this third bit after Brad's finished. How much of this is a legacy of the sort of Snowden revelations and how they're interpreted by most people in this country?

Luckey: Well for us, we've been clear. We are gonna provide the US military with access to the best technology to all the technology we create. Full stop. We just said that flat out, but we also explained that we would engage to address the ethical issues that new technology is creating. But I think second, one really; frankly one really needs to think deeply about what's going on. Because the information technology sector is different from the other parts of the defense industrial base in this country and other countries. And unless one grounds oneself in how and why. We probably won't be successful in doing what we need to do which is to ensure this paramount need to connect Silicon Valley with the defense sector.

Luckey: And I actually don't agree Palmer to just say oh this is just a few radical people so let's stop talking about that issue. That would be the biggest mistake we can make. The number one thing that's different about IT, whether you go to a Stanford Campus or you go to a start up, or you go to a large company; is you are going to meet many, many people who are not American. That is the reality of the industry that we have. And that has been a cornerstone of this country's technological leadership.

Luckey: But suddenly, when people ask, how do we feel about taking our technology and providing it to the US military? When we gave our answer, I got an interesting email from an employee who said, well I understand. You've given me clarity thank you. I now

I have to think about this. He lives in Belgrade. I understand why somebody who grew up in Belgrade needs to think that through. But what if fundamentally means at the end of the day in my opinion is something that's not all together different from at any time in the past.

Luckey: We have to win people's hearts and minds. That's what Roosevelt did to take us into World War II. It was what Ronald Reagan excelled at in the 1980s. And especially when people have questions about gee, what does it mean to have robots that can kill people with or without human intervention. It's important to show that the country is thinking about these things. As it is, but I also think it's important, just as Reagan mastered the technology of his time for communications, just as Roosevelt did with the radio. We have to master the communications of our time so it is visible. So it is abundantly clear to the young people on who we rely that we are not only strong, but we are honorable. That we are ethical, that we are building on the great traditions of the US Military.

Luckey: In some ways, that's the point that we made, that I made to our employees. That when we support the military, we are supporting an institution that freed the slaves, and liberated the Europeans, and has focused on these issues since the creation of chemical weapons and expanding bullets in the 1800s. We want Silicon Valley just how ethical and honorable a tradition the military has.

Evans: That was good too. It's very positive audience, it's a good feeling in the room. Do you want to comment at all on the Snowden stuff and the legacy of that?

Luckey: The Snowden issues did have a profound impact on the tech sector in 2013 and 2014. Of course it's five years later. So a lot has happened since then, there have been reforms that have been put in place. Inside the United States I think that the temperature has cooled considerably. The issue that I think in some ways to think about when we get to the Snowden issues is when we go to some of our NATO allies it's still yesterday. And I don't say that to discourage them from thinking about what they learned about yesterday.

Luckey: But when I was in Bonn and Berlin just four weeks ago, these issues are top of mind. So it is another things one has to think about. If one wants to create an interoperable military based on American technology, one needs to really work through additional measures that actually one must take with those countries so that they have the confidence in relying upon it. They don't think of us like you know the Russians or the Chinese or others. But they don't think of us like themselves either. So that is something that wasn't there a decade ago, but probably still will be here as we enter the 2020s.

Evans: Michael, before I grill you. Does anyone else wanna chime in on the legacy of the Snowden revelations?

Olney: So what I would say with, I mean I interact with about 200 students a year at Stanford. Snowden was a bit of an issue then, as Brad just mentioned it's been awhile. News moves quickly. I would say right now the stronger reactions are against the political devices environment. And it's more a rebellion against federal government as a whole rather than our intelligence community or our department of defense.

Olney: And it's more a problem with, I don't know about adding technology that is under the command or control of someone that I may not agree with, and that sort of less so the

worry directly from the Snowden incident. And Brad hinted at this, and I think it's one of those things that further engagement helps with is teaching and engaging with people who are outside of government on the difference between setting policies and waging war, and how those are done in two different sectors. Not sectors, two different institutions. I think that isn't extremely well understood in the civilian space.

Brown: I agree with Rachel that a lot of Silicon Valley has moved on from that controversy even though I agree it's still tough on mine and other parts of the world. But if you think about it, what Snowden in my mind was trying to emphasize how important rule of law is. Now I don't agree at all with his tactics, I think he as a traitor. But it is about rule of law and that's a principle that we hold dear and wanna uphold. And that's where the engagement with employees, with citizens is really critical. We need to keep that debate very much alive, how important we view that in this country.

Evans: Well Michael you spent a career in tech as a CEO, what do you wish as every Silicon Valley CEO knew about the defense department that might not be as well understood as it should be?

Brown: So two years ago as a CEO at Symantec. I wasn't thinking as much as I am now about geopolitical competition in national security. And I would say that in the intervening time, I've had the privilege of really studying what the Chinese are doing; which is nothing short of a complete technological transformation of their economy.

Brown: Most of the [inaudible 00:25:32] are engineers and scientists so they see the value of what science and innovation can do to keep their economy growing which is paramount to keeping that communist regime in power. So I wish every Silicon Valley CEO could see that we're in a technology race with China. And Palmer articulated this quite well.

Brown: The stakes are pretty high, we've never lived in a time where another economy is gonna be bigger than ours. But we're facing that right now, and by some measure purchasing power parity they grew bigger than the US economy in 2013. Why is that important? My perspective is we're gonna frustrate China's rise but we need to keep in mind because economic security and national security are so tied together, they now have the capacity to really challenge us in so many areas and they're focused on technology. Their prowess there in combination with their economic capacity means we're gonna be challenged in a way unlike anything we've ever faced in our lifetime.

Brown: So some of us are old enough like me to remember the last technology race, it was with the Soviets. China is such a much more potentially dangerous competitor than the Soviets because of their economic capacity. So I wish every Silicon Valley CEO and CEOs across the country were more focused on this issue because this is a generational national security challenge. And we need something that is an answer to the civil military fusion, the tremendous amount of technology that China's investing in.

Brown: And in my mind, that's a reinvestment in ourselves. We have to create the room in the budget to get more federally funded R and D. More STEM education, more innovation moon shots they could be called. So rally the triangle that has made this country great, government, academia, and business working together. That's the origin of Silicon Valley. So it's a bit ironic that now we're having discussion about Silicon Valley not supporting the military that's the origin of Silicon Valley we need to get back to that

working together and seeing that common purpose of our nation working towards its own economic prosperity for the future.

**Brown:** If we can do that, then I feel comfortable about the challenge we face with China. If we stay divided on this issue and don't muster the resources to take on this challenge, I'm very worried about the future.

**Evans:** Just to look at it from the other side of the table, what is the Defense Department need to do, particularly in sort of conveying and reinforcing messages to Silicon Valley. What does DOD need to do better here and I guess how are you focused on that problem in your new-ish role?

**Brown:** So three things, one is get focused on the fundamental research that creates the innovation that all the innovation hubs in the US, Boston, Austin, Silicon Valley, wherever benefit from. All of the technology in the iPhone came from federal research. Apple did a beautiful job of packaging that. But most companies, Symantec; a National Science Federation Grant. Google, same thing. That's where Google started.

**Brown:** Fundamental risky research happens with federal government sponsorship. So the Defense Department needs to be on the forefront of making sure we are putting money where our mouth is. That's what the R and E organization is all about. Newly stood up under my boss Mike Griffin. I'd like to see more of a national call to action there as I mentioned cause we can get much more of a priority on fundamental R and D.

**Brown:** Just as an example, the height of the Cold War, we were spending two percent of GDP on federally funded research. Today that's zero point seven, and I just made the argument that the threat is much more significant now. So that's a trend that's very bothersome. So R and D spending is clearly one of the things that we need to do.

**Brown:** Second thing, we need to make it easier to do business with the department of defense. That's what the defense innovation unit is all about. We're the only organization across the Defense Department, so not embedded in a service that's exclusively focused on commercial technology. And the big equation of build versus buy, my personal view is that the military has historically has been too much in the build camp. There's so much happening because of the tremendous commercial applications of technology. We need to be much more buying everywhere we can, we should be looking for what commercial technology we can employ.

**Brown:** That keeps us on the leading edge in terms of what technology capabilities there at lower cost, and riding the benefits that are happening with the much bigger markets that are military. And the third thing we need to do is stay engaged in the conversation. So as you've heard you know Palmer, and Brad, and Rachel say we've got to engage in this debate about national security and technology. I wouldn't wanna see another time when at a single company they're employees who are protesting, that's their right I love that.

**Brown:** But the other side of the argument is articulated, Microsoft has taken leadership in that space to say let's have the other side of the argument on the table. I'd love to see defense innovation unit involving those policy discussions in Silicon Valley, Austin, Boston, Redmond, DC. So we need to do all those three things.

Evans: That's great, I just wanna pick on something you just said and throw a question out to the panel. First just to remind you, you can all submit questions through the app or if you're on Twitter with hashtag R and DF. But picking up on what you said about China. Why hasn't the sort of sense of China as a major adversary really taken root in Silicon Valley? Is it really just employee protests and petitions? It has to be something deeper than that. Because it's not just about the sort of you know, the fact that it's very clear that China is the major generational adversary to the United States, I think that's clear to many people.

Evans: But also these companies technology and intellectual properties severely at risk from China's IP theft practices. So what explains this sort of, and obviously different companies have handled this differently. Microsoft and Amazon on one side of the ledger, I'd say the right side of the ledger. And then you have Google and Apple doing things I find a little more troubling.

Brown: We don't have a consistent message from Washington saying this is a generational national security threat and we have to get focused around it. Even in the survey data that you saw today, and you looked at the threats; it's quite spread around the world and Middle East was on top. I'm not saying that Middle East is a safe place and we can move on. But I am saying the only threat that is potentially existential to the United States today is China. So we need to have a very consistent message and we need to have a comprehensive or stream-

PART 2 OF 3 ENDS [00:32:04]

Brown: ... Have a very consistent message and we need to have a comprehensive or a strategic approach to how we're going to address that threat that involves not only just all of government, which is difficult enough to corral, but includes all of our society back to that triangle. We need everyone in academia. We need the business community to help, too. It's that triangle that has helped us rise to the challenge that we've seen with other national threats and I or you, again, we've never lived through one that has the potential that China does.

Luckey: It's interesting, though. If you look at the poll this morning, there's two ways you can look at the poll. One can say, "Look at the difference between, say, how Democrats and Republicans, for example, think about China versus Russia." That's what everybody talked about. There's another way that you can look at that poll: 80% of Democrats said that the top four countries one should be thinking about are either China, Russia, Iran, or North Korea. 76%, only four point difference, of Republicans said that the four countries the country should be thinking about the most are exactly the same. So, should we treat this like an election for Congress, where we're gonna only pick one and worry about one thing only, or should we say, "You know, I think we're big enough that we can think about four things"?

Luckey: That's what I think we should be doing, and one can debate, "Is this country more of a concern than that country?" I do think that issues are different, countries are different, the problems are different and we need to understand those differences, but I think we need a comprehensive strategy that is in fact addressing the full range of challenges we're facing. That's where I do feel like there's the concerns that people are focused on, the looming race for AI, but I also think there is the set of attacks that are taking place

every day when it comes to cyber attacks, and clearly we need to be thinking completely left to right to address all of that.

Evans: Well, but isn't China a bit unique? I mean, we could all agree that those are the four naughty countries, right? But China, by virtue of its size, the size of its market, which Western companies want to sell to, it's just sheer capacity, and its IP theft practices which are sort of unparalleled except by North Korea, on a much smaller scale. They're more like the Bond villain family, I think, than Russia, but doesn't China pose a unique problem for the American tech industry?

Luckey: Can I jump in? Here's why they pose a really unique threat: it's because a lot of American companies really want to operate in China and some of them are not there yet. That is why they pose the most unique threat. They don't really care about operating in Russia, they don't really care about operating in Iran, and because they care about operating in China and they see it as this huge potential multi-hundred billion dollar opportunity, they're willing to say things and do things as company leaders that they would never do otherwise, and then I think that permeates the Valley too, to where you can't say things that should be common sense. If you say, "I am concerned about Chinese nationals coming to US universities, working closely with some of our most advanced technology, and then going back to China and taking that." Or you say, "Yeah, I'm concerned about industrial espionage from Chinese people coming here and doing the same thing." People will be like, "Well, that's racist! How could you say that?"

Luckey: They have to realize that there's not this cultural equivalence where we can just pretend that every culture around the world is united in some global goal for good. We do have our own interests, so we have to recognize that, but there's a big monetary incentive for a lot of Silicon Valley companies to pretend that that is not the case and to act like China's just another market. It's just another place to expand into. That's one of the things that most concerns me, is that these people are not making these decisions based on a rational evaluation of the potential threat.

Brown: Yeah, I think Palmer's made ... I agree. I think Palmer's making a very important point. My concern about China is certainly not about the Chinese people. I have tremendous respect for their long, proud cultural heritage. This is about the Chinese Communist Party. We seem to have lost the zeal to say that a totalitarian regime that is really a surveillance state is something we don't condone in this country. So, when companies are making the decision to send technology ... Very different from selling soybeans to China. I'm all for trade with China, but when you're selling technology, this is where Brad's point ... It's different and you're selling technology to a regime that uses technology and media to exercise severe control over the population, and while the common wisdom in the '90s was that was gonna liberalize the society, that the internet was gonna change China in a way that supports democratic values, we've now seen that's not the case.

Brown: Tiananmen Square changed that forever. So, the regime changed and said, "We're rewriting the history books. Western values are a threat to us, an existential threat." Certainly that's the only been reinforced in the Xi regime. So, now we face a completely different view of China. We've already seen the evidence of what they want to do with technology and media. To support that as if supporting that is just a regular course of doing business is, I think, being naive.

Luckey: It's interesting because there's a few differences about China. You know, one is it's got the largest population in the world. The second is it actually has, far and away outside of the United States, the largest and strongest information technology sector in the world. If you look over the last year at any given day at the ten largest companies in the world measured by market cap, most days there were five American tech companies and three Chinese tech companies and two companies from other industries, very different from a decade ago. The third is, as you pointed out, American companies do want to operate there, principally because the market is so large.

Luckey: There's another distinction that you alluded to earlier, which I think is interesting. One of the many reasons people are talking about this now, I think, is there's a recognition that advances in artificial intelligence are fueled by many things, but one of the important things is large datasets. So if you have access to a larger dataset, you're likely to be more successful, and if you're operating in a market with 1.4 billion people, that's potentially a large dataset. If you're operating in a market where there's more data being gathered by facial recognition, or just about anything, you're likely to be more successful, but I'd actually step back and say the real question is: what is the right strategy for the United States?

Luckey: When you put all of those things together, I think I would still argue that our fundamental strategy has to be to build commonality between our population of 321 million, the European Union's population of 512 million, and then add Canada, Japan, Australia, New Zealand, South Korea, and build a commitment to common values, build approaches that enable people to build datasets in different ways than will be done in China so that our technology can advance as well and build on what has fundamentally been our strength since we've been called upon to act outside our own borders militarily, the ability to ally with other like-minded governments, and if you can put all of those things together I think you have a strategy that helps address not just what one might worry about in China, but one needs to worry about in Russia and other places as well.

Evans: Right.

Brown: Yeah.

Evans: Well, now we're gonna ... Oh, sorry.

Brown: I just want to build on a Brad's point, that this is a time like no other, that is [inaudible 00:39:41] living memory, where we really need our allies because another way of expressing that is \$80 trillion of GDP that we can sell to as technology companies that represent companies that don't want to have their industrial capacity hollowed out by China's mercantilist policies. So, it's cooperating with India, South Korea, Japan, Germany, etc. If we put that together as a global force, then we've got plenty of market to sell into and we've got a huge group of friends who support the rules-based order and democratic values and freedoms that we appreciate in this country.

Evans: So, I want to give some time for some questions that we got from the audience, from those of you out here and out there on Twitter. We just touched on this a bit, and Brad you also discussed this, but given the tech industry workforce is so multinational, involves so many noncitizens, is there any sort of temptation among technology companies to sort of focus more on developing indigenous American capabilities and

competencies, or is the only solution is, Michael you just suggested, stronger international alliances and figuring out ways to deal with citizens from those countries that may have a little more mixed feelings about us?

Luckey: Well, I think the good news is this is typical. You don't have to choose only solution, and we need a multifaceted approach. You know, the tech sector has been very vocal about the need to really spread coding and computer science across American public education to strengthen our community colleges and universities and I think that remains a paramount need, to produce more individuals in this country who can fill the jobs our industry is creating. We have hundreds of thousands of open jobs today in the United States that require coding or computer science background. I do think that at the end of the day, this is a field where you want to tap the best and brightest in the world. Thank goodness Albert Einstein came to the United States in the 1930s. Thank goodness some of the leading German rocket engineers came to the United States when World War II ended. I don't think we should forget what has always been a cornerstone of our scientific and technological leadership, and so I would say absolutely produce more of our own, but continue to tap into the best minds in the world and hope that we can work with them to help us maintain technology leadership.

Evans: Great. Well, I think we just have time for about one more question. I think it's an important one, back to the sort of nitty gritty, but given a lot of the past work on defense innovation has been focused on supporting and creating startups through bootcamps, hackathons, accelerators ... Rachel, I believe your company just got accepted to ... Can I announce it?

Olney: Yeah, yeah.

Evans: To Y Combinator, so let's give her a round of applause for that.

Luckey: Ooh, all right.

Evans: It's a big deal. This has been important and it's worked to some degree. A lot of these startups have found themselves stuck and unable to scale. So, what's the next step to get them to scale and integrate themselves with industry, particularly as we might be facing very real concerns about just the normal cyclical recession that we might be due for another year or two?

Olney: You want me to go first?

Evans: Yeah, you want to kick it off?

Olney: So, I talked about this a little bit earlier in terms of getting better at what we're counting as dual use. I think a big cause of that is investing, or incubating essentially, startups that really don't have a commercial application yet, and in that case we shouldn't be considering it as a startup; we should be considering it just as, as Mike mentioned earlier, as a R&D investment on a core technology that we need to be fostering in the United States, but that's why these companies aren't able to scale. There's actually a researcher at Stanford who's an active duty Air Force officer, Jason Rathje, and his research shows that companies that engage with government early on in their process grow at a substandard rate compared to their peers in similar industries that don't engage with government, and part of that is requirement creep and the necessity to

constantly be engaging with government in order to do government work. So for instance, even with my company, even though we got started working on a special operations problem, I have to constantly keep myself in check to continue spending most of my efforts with our energy sector customers because that's really where we'll grow and make sure that we're building modern technology and then apply that as a true commercial 'off the shelf' solution rather than some companies that could be dual use but end up staying just in the defense sector.

Evans: We only have time for one very quick comment because we got lunch and I've been told that I would be tackled if I went beyond the time, so just maybe ten seconds from one of you.

Luckey: Government needs to concentrate their investments and generate some real success stories so that they're not just investing their money; they're encouraging investors to go in and do that. Right now, investors look, they don't see a lot of success stories, and so they don't want to invest in companies that do most of their work in the defense space. The government will get a return on its dollar beyond just the initial, "Here's the money. Make the thing."

Evans: Right, and you should all really try to tackle Michael because he's the one in charge of actually making this happen.

Brown: If I could just say Palmer's spot on with this. We're so concerned about oversight with the way Congress works with the Defense Department. We've got to change a little bit if we want to scale innovation, so there has to be more flexibility in how those dollars are spent so that if you have something innovative, it might not be tied to something that was a 10/15/20 year program of record. So, we have to break that to allow some flexibility in that big budget to do things that are new, to try new vendors, and experiment with new technologies, and that's not the way we operate today. We want every dollar accounted for. I get that. I'm a taxpayer too, but that's not the way to scale innovation.

Evans: Great. Let's give our panelists a round of applause. That was a really great conversation. Thank you so much.

PART 3 OF 3 ENDS [00:45:45]