

Lisa Porter

[00:00:00] **Jordan Schneider:** Lisa Porter, welcome to hot space summer. I'm trying to talk and another edition of China acquisition talk.

[00:00:05] **Lisa Porter:** Thank you. Thank you for having me.

[00:00:07] **Jordan Schneider:** Okay. So, Lisa, you've been in this game a long time having to interact with lots of people who don't have stem degrees. What college courses would you most like to assign to every acquisitions or policy person in the defense universe?

[00:00:22] **Lisa Porter:** I may be a little biased here because as you're not going to be too surprised, one of the answers to that is some basic physics I think would go a long way. Understanding some of the basic laws of conservation and how things move and don't move is very valuable. And I think people, especially in the space community, have these models of how things work that aren't really.

Governed by laws of physics. So like star wars, the millennium Falcon, right? The Battlestar Galactica notion that things zip a lot around in space. Things move very slowly in space, right? They move fast in their orbits, but if they have to go from one orbit to another, that's a very slow process.

It takes a lot of propelling. It takes a lot of time. So this notion of how things move in space is something that if you don't develop an intuition for, unless you've done a little bit of physics and Eric's nodding his heads. And I think he, he can appreciate that.

[00:01:13] **Jordan Schneider:** So you mentioned star wars which is, fascinating and shocking to me, how much of a touch point all this scifi stuff is. And on the one hand, we've had guests on the past talk about how these sorts of pieces of culture inspired them in high school to go try to build a transponder or what have you.

But there are also, the sort of downsides that you alluded to. Can you talk a little bit about the before, before we go to our next course. Can you talk a little bit about the impact that popular culture has on technology development in the Pentagon in general, and then in the space domain in particular.

[00:01:46] **Lisa Porter:** Yeah. I think for the Pentagon in particular, when people think about space as a war zone, war fighting domain, they tend to think about the way spacecraft are moving and how they're going to get out of the way of threats. [00:02:00] They think about it by applying those models from star wars, we all have those images of the millennium Falcon just zipping away and, things firing out. I mean, I'm with you. I, I loved star wars as a kid, too. I'm old enough to remember the original star wars movies. Totally inspirational, the physics courses then give you that sense of, okay.

What's real. And what isn't inspiration is great, but it doesn't mean you should be deriving your sense of what is correct from the movies. So that's been a problem for the Pentagon

because when they think about space as a quote, war fighting domain, they're applying the wrong analogies often to how to think about defending an assets resilience, right?

How long it takes to move from one orbit to another, how much propellant you would have to carry to defend against incoming threats, if you want it to move out of the way, which is what people think in their mind, they're just going to zip, just like millennial, Falcon,

[00:02:51] **Eric Lofgren:** Hey, Lisa, we've been hearing a little bit about a nuclear reactors spacecraft that DARPA has been putting up and other, what's your view on these or is it like proliferation, EW [electronic warfare], cyber, like that's the real war fighting domain.

[00:03:05] **Lisa Porter:** Yeah, so the war fighting domain actually I think extends from lower earth orbit all the way up, to CIS lunar beyond and interestingly general Dickinson who's, the new space comm commander, he recently gave a talk about this and made this point, right? So when you're talking about getting to the outer reaches nuclear power is always a good option.

And I think it's a smart investment for the lower earth orbit. Like you were just bringing up. And that's where a lot of the near-term focuses. Now. That's all about making sure the proliferation is there to sustain really good connections. Really good comms and of course, really good awareness right.

Of what the threats might be doing. And you probably aware of space development agency, I'm sure you both are. And that's, the example that I would put out of what the DOD is doing. And I think it makes sense, right? Because that's a physics based and physics derived idea of how to think about ISR in space in comms in space.

[00:03:58] **Jordan Schneider:** statistics. [00:04:00] Why should anyone care?

[00:04:01] **Lisa Porter:** . Because I think, statistics reminds us that our intuition about numbers is often not correct. And it reminds us how to think about probabilities in a little bit more disciplined way, the probabilities of certain things happening versus not happening. Not to get too far straight into the topic here, but if you think about the way.

This country is struggling with the efficacy of vaccines and whether or not vaccines have an impact. They're not looking at probabilities correctly and they're not doing things in the appropriate context or probabilities. And by they, a lot of the members of the general public and the media, frankly.

So in general, that's

[00:04:40] **Jordan Schneider:** can throw the we can throw the regulatory bodies in there too as well. I think

[00:04:43] **Lisa Porter:** . Absolutely we can. And, you know, I'm, again, I was a nuclear engineer undergrad, so I saw firsthand what happens when people don't put the effort into understanding probability and statistics, right? They tend to overinflate those things that have a very high potential for catastrophe, but a very low probability of occurrence.

They don't know how to manage that understanding. So we're seeing that now with vaccines, that in, in the history of a lot of different investments, and frankly, you'll see this in the biotech industry as we go forward, not just for vaccines, but for some of the interesting other applications that are going to surface where people get freaked out about GMOs.

And they just do not understand how to apply scientific thinking and statistical rigor to how they assess risk. So that's why statistics to me is so important. It allows you to understand better your risk calculus.

[00:05:30] **Jordan Schneider:** Yeah. We're gonna, we're gonna take the detour because you open the door. It's just looking at the FDA when they're trying to make these decisions based on like, how are people gonna respond? And are we losing our confidence? No, you just follow the numbers and hope that you have an educated and functional enough populace to lead you where you want to go.

And when you try to play games with this sort of stuff and and massage it, you get these absolutely ridiculous outcomes. Like the president of United States telling everyone to get a shot, 75% of the country already having one. And [00:06:00] then them still saying, oh, well, we're not so sure about it.

So it's

[00:06:02] **Lisa Porter:** and you get a lot of confusion, and people are now more confused than ever. The clarity of messaging is completely gone and you're right. The confidence in just understanding how to communicate facts in a clear way is really important in any kind of regulatory body. I totally agree with you.

[00:06:18] **Jordan Schneider:** so maybe taking that and bringing it back to the Pentagon context, like what, where do you think that works and where do you think it doesn't work in like the defense, industrial community

[00:06:31] **Lisa Porter:** oh, there's a whole bunch of ways to answer that. I think in general, the way we, and it's interesting that Eric is on the call because, I'd be interested to get his perspectives and maybe the dialogue among the three of us here, the way people assess risk and the way they assess priority to address risk and therefore the funding right associated with risk.

Oftentimes you will see the development of programs that are way too expensive way too, exquisite, because they're addressing the one threat that has, 0.01% probability of occurrence. And if they just took that off the table and said, you know, what, if we addressed everything else would be good enough.

It would have already been delivered for one 10th of cost. And be up there and be effective in space or in other domains, I'm just picking spaces and example. And so that's why these concepts of let's do risk assessment and management and then allocate our funding accordingly, is a process that I'm sure Eric, I'd love to hear your thoughts about, but I think it's one that is not there yet.

Let's put it that way in the Pentagon

[00:07:37] **Eric Lofgren:** Yeah, but I feel that a lot of the Pentagon processes are trying to take, what are fundamentally anticipations or, questions where there's not a single answer or conflicting views should be able to prevail. And then we try to force it into these boxes and, and then we over-optimize for those things.

And to the exclusion of others. So I feel like [00:08:00] it's our reliance on, I guess, a very linear view of statistics rather than. I guess being able, I don't know what the alternative is, cause like in the market and in science we have these kinds of Republic of science, right? Polanyi's words. And in the market, you just have people with private capital able to make their investment decisions regardless.

And they actually want to conflict with the prevailing paradigm. So how do we need more than defense or is that the wrong way of thinking about it?

[00:08:26] **Lisa Porter:** That's a good question. We're really getting, we're really getting into this interesting dialogue that I hadn't necessarily anticipated, but it's my fault because I opened the door as Jordan said. I think, and we can talk about this in the context of Silicon valley, which is where I think, some of the conversation you guys wanted to take on because what you just described, Eric.

Is essentially what I championed, which is the benefits of a free market, right? So free market ultimately will prevent stupid. It might take awhile. But there's a reason Theranos no longer has the shine on it, right? Eventually the market will say, this is not a good idea. This is not a defensible idea.

And it dies right in the department of defense. Stupid has a long tail because there's no correction for, there's no free market corrective factor. And that's the thing you have to be mindful of, very mindful of when you look at Silicon valley and you say, I want to adopt that kind of innovation culture into the Pentagon.

You have to realize that those correction factors are not there in the Pentagon. So you can't just abandon discipline as part of the investment thesis of what you do. You have to still recognize your responsibility when you're a steward of taxpayer dollars is not. Just throw a bunch of money at stupid and assume the market's going to correct it because it doesn't, there's no market in the DOD, right?

It's not the same correcting factor. So I think this is part of the challenge of DOD. Has it recognizes that it's been slow and it recognizes that it's become stale, right? In some contexts and you guys have mentioned DIU, you brought that up when we were talking and places like [00:10:00] that, that are set up to try to deal with that.

But there's not a recognition of okay, but those models and those cultures are different and they, and if you're not careful and you adopt some of something and not all of it, you can actually end up in a worst position. So if you try, avoid bureaucratic slowness, which is, goodness, the DOD is champions in that, but you adopt something that allows you to just invest in stupid Willy nilly.

You've just replaced one bad outcome with another. That's what I'm trying to say.

[00:10:29] **Jordan Schneider:** It's fascinating hearing this in the context of what's happened in China over the past few weeks where we've seen the government be very explicit, that certain types of market-driven investment is not something that the party is all that interested in supporting and going forward.

And, it's one thing when it's video games targeted at children and pet food and afterschool education programs, which are probably crazily overpriced anyways, but it also bleeds up at the higher levels where you're talking about tens of billions of dollars being allocated to industries based on sort of national priorities, which are not necessarily being allocated in the most sort of rigorous way.

And it's a common I've asked this to a few guests now, like to a, to what extent the Lockheed's of the world are like Chinese SOEs and be to what extent the Chinese defense into, the Chinese, like broader state on industry runs like the Pentagon, because it seems like a lot of the efficient inefficiencies that Eric has opened my eyes to over the past years.

I see over and over again in the particularly in the Chinese context,

[00:11:33] **Lisa Porter:** Absolutely. I mean, So Jordan, I think you know, about the hearing I, was involved in a few weeks ago and you're touching on a point that I was trying to make, which, it touches on the concepts of industrial policy and things like this. Where is that appropriate?

And where is it not? And I think you asked, about, or you commented to me about civil fusion, civil military fusion, and w and what does that mean? And how much is enough? And, the Chinese approach in general is not something we [00:12:00] should be emulating. So that was the macro point that I was making.

Is that what I, if I were to take a step back and say, **what is China been most successful in doing to us in the past few years, it's been to convince us to doubt ourselves** and our way of doing things and to be absurd with how they're doing things and to be worried about maybe we should do things differently.

Whereas in fact, if we are, if we continue to do things the way we do them too, to include right, Big proponent of making this explicit. It's not just innovation that leads to success. It's innovation in combination with the free market and with the rule of law and with intellectual property rights and all of those things together that enable this country to, to punch way above its weight.

And, I actually just saw this happen to see it last week, but it came out a couple of weeks ago. Pricewaterhouse released the top 10, I'm sorry, top 100 companies in the world. Did you guys see this by market cap? 59 of the top 100 are in the us and 65% of the total market cap is in the United States.

So we're a country that has less than 5% of the world's population and closer to four. And yet we're generating 65% of the total market cap of the world. So our system works pretty

well and China knows that. And they don't want us to continue on that path. So they're trying to convince us that, maybe we got to change our ways and look more like them.

And so this obsession with the civil military civil fusion, and maybe we have to have more government fusion with the civil side and look more like China and our obsession with how much money is China spending on certain technologies versus the outcomes. Which is what you should be measuring. That's that has me concerned because I think China's got us off our game.

[00:13:47] **Jordan Schneider:** Yeah, push back a little on that. I don't think China is doing civil military fusion as a sort of backdoor way to get America to change its policies. But maybe we can take the I think there are other more central motivations to that, [00:14:00] but anyways let's turn to that.

[00:14:01] **Lisa Porter:** And it has the, it has that outcome. I'm looking at outcome perspective and whether they intended to, or not, they've had that effect on

[00:14:09] **Jordan Schneider:** that's

[00:14:10] **Eric Lofgren:** And the same thing actually happened in the Soviet times. We explicitly picked up a five-year defense program. It's now called future years defense program, but we essentially, we looked a lot more like the Soviet and that through the fifties and sixties adopting a lot of those centrally planned types of structures.

And we actually, a lot of people believed in the techno structures, right? The big primes would actually keep growing and always stay advanced of any kind of disruptive startups. And eventually they would merge with the government. So it's an interesting.

[00:14:39] **Lisa Porter:** A little bit of human nature, what you're raising, right? So people tend to get obsessed with what their adversaries are doing, but, because it's the Olympic timeframe and I love the Olympics. I'm just, I just really love sports. And there's a saying an adage that I didn't make up, but I just I've been saying it lately.

Cause I love it. Winners, focus on winning losers, focus on the winner And we have to remember that fundamentally, we should do what we know we want to do and stop obsessing about what others are doing. And if that's our main focus and we recognize we must have it mostly because we're doing pretty well.

Let's double down on what we do well and continue to push forward. I think that would be a much better mindset now, Jordan. You're right. I'm not sure that China actually explicitly set out to say, our overall objective should be to get us off its game, but it's been very effective. And when you think about it, that's a better strategy than most things you can do to us.

[00:15:30] **Jordan Schneider:** so let's take this back to space because space is a really interesting edge case in which the us government is maybe not for a long time, but certainly for the past 50 plus years and likely for the next five to 10, going forward the U S government as well as other governments around the world are the major buyers of launch services.

And anything else that you can get that space adjacent. So how are you thinking about. Broadly how the U S government should be shepherding this commercial [00:16:00] revolution, which we're starting to see in space.

[00:16:01] **Lisa Porter:** So it's been a very exciting time for space and I think it's important when we look at this sector that we look at it holistically, so all the pieces of the space sector.

From, the launch and the spacecraft all the way downstream to the services that come about, they all have to work together. And if one part of that chain doesn't work, then nothing works and there are weak links in that chain, at least from an economic perspective, right? In particular launches, one that you referenced in spacecraft production.

These are capital intensive. Endeavors where the return on investment takes a long time. So they're not attractive to a lot of the investment vehicles that are out there, particularly for more of the downstream services, where of course the capital investment is lower and the returns are faster and higher.

And so the government in particular defense community really does have to be paying attention to that and saying, okay, how do we ensure that we bolster, if you will, or support those parts of this ecosystem that are a little bit fragile. And that's what I think you're seeing. Done mostly well in the past 10 years, although lots of opportunity for improvement, but the space development agency in particular, I think that if you ask, what are they trying to do?

They're trying to show with some investment that we can get a more robust spacecraft production tempo, right? That the concept of actually producing spacecraft, not one every five years, several every year up to tens to hundreds of per year, ultimately we'd like to get to. The launch side.

We still got to work on some more, as we know, because people talk about this concept of proliferating constellations, and there's a lot of excitement around that, right? there's a lot of excitement, even of potential commercial opportunities there as well, but you gotta be able to replenish your satellites and the vehicles you use to deploy them are not the same as the vehicles you use to replenish them.

And people haven't all figured that out. . And if you think that through getting back to statistics, why does statistics matter? Because rent [00:18:00] failures are random. So if you have, let's say, I'm going to make this up. If you have 18 planes and 15 satellites per plane, that's roughly, it's a little less than 300 satellites in a given plane.

You might have three failures per year. If you've got a five-year lifetime, okay, you don't want to replenish all 15 and applying, you'll only want to replenish the three that you need to replace that year. That means you need a vehicle that can get about let's say one to two metric tons up to let's say 800 kilometers, every two to three weeks.

This is math. This is why it's statistics matters. Okay. We don't have a vehicle that can do that today. So once we deploy multiple satellite lights of order, 300, right? Which the space

development agency is pushing and many of the commercial analogs are arguing the same coverage. Now you've got a very inefficient way of replenishing.

They'll satellites because the launch vehicle doesn't exist that can do that economically. That's an example of where the national security arena still has work to do to decide how it invests in capabilities that aren't going to be driven by the market because they're so expensive, right? Until you give them a Delta push that says, this is where you need to focus.

[00:19:09] **Eric Lofgren:** . I think that, at that point we've been seeing a lot of SPACs [special purpose acquisition companies], rising up and more than in times past live discussion on deep tech and a lot of these people who did the quote unquote dog-walking apps. Now they're like looking for a newer and bigger challenge.

And so we're seeing, I think this kind of revolution in the aerospace industry, particularly because it has such low quantity volumes and these incumbent guys that are working in it, that it's ripe for disruption through like this, software defined or even like additive manufacturing types of processes.

And it seems so there's this kind of, recognition and money starting to flow in, and maybe we're in a bubble but maybe that will lay some critical infrastructure for the future of space if it were a bubble. But like where does the, the government, the department of defense NASA, how do they position themselves to give the right signal.

Cause [00:20:00] it still feels the incumbents are the incumbents and even if you provide me something better at, or at cheaper costs, it's just I have no way of knowing how to get in there. So what does, what do you think the department of defense NASA, the rest of them have to do.

[00:20:13] **Lisa Porter:** Yeah. So I think in, to pull on the example that I was giving and, you were talking. I think if you look again at space development agency, they've done a pretty good job at signaling what is needed and they're incentivizing the right behavior. So if you look at who they funded in their first traunch, they had the traditional Lockheed Martin, but they also had York, which is definitely currently a startup type of company in terms of, it's not the big dog in this industry. They've also through that process stimulated a lot of smaller companies that are participating as, subs to these primes because the primes recognize they need to bring in more innovation.

So it's a, been a very, I think, overall a positive way of trying to signal the right behavior, but only in one element of the whole overall problem, which is the spacecraft production. And that's why I brought up launch because that part still needs a signal like you were just describing along the lines of what I was just saying with a little more depth than the math written down.

Obviously I was just giving you numbers to give you a sense of statistics matters, and to say, look, guys, this is great. We're on a wrong, the right path to get to solving two problems that really matter to the department of defense and therefore to our country. One is, resilient comms.

And two is the ability to see the threats coming before, while before. We have to deal with them. So we have time to deal with them, especially hypersonic threats. Okay, great. We're solving really important problems, but we all know that part of the beauty of this approach is that these satellites are going to have lifetimes of a few years.

So we continually update them. That's a feature we liked that we can continue to really upgrade the technology capability. The downside to that is of course you got to continually upgrade like so the replenishment problem needs to be signaled, right? If you were to ask me, what is the department of defense need to do to signal the right behavior on the launch side, that they haven't been strong in their voice yet it is on the [00:22:00] replenishment problem.

There are companies out there that, to your point that are SPACing in the launch arena, that could probably there early enough, they could pivot to address that problem if it were articulated. And if they thought it through, they'd realize the government is going to be a reliable customer for that.

Cause it needs to solve that problem. So they could probably make it. With their investors and say, you know what, if we do this, we could count on the government as a long-term customer, but the government has not been clear. In my opinion, the department of defense has not been clear enough that this is a required need down the road and not 10 years down the road.

Just a few years down the road. So that answers your question, I think, for DOD. And that's an example, right? So it's about the, DOD NASA, the Intel, whatever the particular agency is defining. These are the needs we need filled, and sometimes we've been good at it. And so you've seen a lot of excitement around that and sometimes we're not.

And then you see, oh shoot, there's a gap we have, we'd have no one there to support.

[00:22:58] **Jordan Schneider:** yeah. It's interesting. It comes back to our earlier conversation. We were talking about DOD, having a hard time, wrapping their heads around things that are not exquisite and have 0% failure rates. And there are not like, it's really obvious that like small sat, constellations are a important thing that's happening and that's really powerful.

But the second order consequences that come through that once you accept that are difficult to really grasp and wrap your

[00:23:22] **Lisa Porter:** right. That's exactly right. That's exactly right.

[00:23:26] **Jordan Schneider:** so another question on the sort of coming back to China in the space industrial base there are some fears out there that 50% of the market is government and presumably the USG isn't going to be buying images from Chinese firms anytime soon, but lots of other companies around the world potentially could.

And there's some fear that whether it comes to launch or imaging or or network services that developments, like what you saw happening in solar could happen in the space. In the

space ecosystem, we're China to put out a product which is equally good and cheaper and folks go there.

And that [00:24:00] sort of leaves the U S industrial base weekend in a sector that is a strategic one. Are you worried about this? Are there any particular sub sectors that you think are more or less vulnerable to this sort of development and how should the government think about trying to stop this before it before it happens,

[00:24:17] **Lisa Porter:** so I think we have great lessons to learn here for where we screwed this up in the past. So we don't do it again. And that would be in the way we've managed export control, where we've had in our mind, a fear about the Chinese getting access to some of our advanced technology and then using it against us.

And the problem with that is that what we've done and I'll take launch again, is a very specific example cause we're behind where we should be in launch and capability. Based on where we were 50 years ago, right? We were so worried about people using launch in, basically making launch vehicles into ICBM's to use against us that drove our ITAR policy for launch.

But all that did was generate European and Indian capability, right? Because they were forced to generate their own capability because we weren't available to compete to, to provide that on the market. It did nothing to prevent our adversaries from developing ICBM capabilities. So our allies are not going to use technologies against us.

They're our allies. So all we did was create a situation where we're no longer the best providers of launch, and now we're coming back, of course, but this take the history of this. You have India, you have France coming on strong and we still have adversaries able to do what they do.

So it always bothered me because we lost command of a global market in launch and we didn't gain anything. The thing we were afraid of still materialized. The bad guys can still do what they do. To your point china will still develop capability. They're not stupid. They've got lots of really smart people.

So we have to stay competitive by staying engaged in the global market and recognizing it's not just the U S right? So to your point, us should [00:26:00] be thinking about our European allies. We should be thinking about our. Our partnerships with Japan, and our partnerships with India and together, we should say, look, as we look at space, what do we want to do collectively there and collaboratively?

We want to explore it. We want to exploit it. We should go and do those things together. And if China does what China does fine, as long as they don't try to harm us or prevent us from doing what we want to do. And that's why we have a national security community, then we just keep going.

And competition is good. Competition from China, as long as it's, as long as it's competition should drive us to be better. If we totally can't compete with the Chinese on technology and

capability. Then we need to look inward and say, what do we need to do better? I don't think we should be afraid of competition.

Competition does not create wars, right? It's the lack of competition that creates disadvantage. And that's what we've done to us through our policies in the past, we've taken ourselves out of competition,

[00:26:54] **Eric Lofgren:** Yeah, I was just gonna say on I tar, one of my friends, he would say he was talking with a French engineer. He said I started the international traffic in arms regulation. He says, that's the way that the us keeps itself from knowing how far behind it actually is in many technologies.

[00:27:09] **Lisa Porter:** beautifully, beautifully said, I love it. I'm going to all that because that's just exactly correct. Exactly. Correct. We take ourselves out of the competition.

[00:27:17] **Eric Lofgren:** you know, it feels if we didn't have space X serendipitously, come in, we wouldn't have realized. The stagnation in the launch and what that means for our national security and commercial industry. Do you think like this problem is potentially pervasive across the forest structure and we just don't really have the signals that tell us, like we could have been doing this much better all along.

[00:27:37] **Lisa Porter:** We do have to worry about that in the parts of our force structure that don't have that access to the true commercial markets. So things like carriers and submarines and things where there's no commercial market, we do have to make sure that we're the best. And again, that's why we rely on the national security community to try to augment what we can't know through competitive forces.

And there's a whole conversation we could [00:28:00] have about what's required to maintain excellence in domains, where there is no commercial market to provide those corrective forces. And by the way, **expertise and excellence have to be the two goals that I would say are the most important for the Pentagon to do** some self-reflection on.

So yes. I don't know if I've answered your question.

[00:28:16] **Jordan Schneider:** happy are you to be out? Lisa

[00:28:18] **Lisa Porter:** Hi, I'm so happy to be out. So happy to be out. It's a, yeah, it's a tough environment. I'll tell you. So yeah, I think you're asking a really good question though. I think that's why, to the extent you can leverage competitive forces the better. It's own competition always makes you better.

[00:28:35] **Eric Lofgren:** You know what I love that you're bringing it back to these, market principles, what does that look like in the department of defense or government? Cause it's we often come back to this industrial policy kind of question, as well as like, how do we stimulate and do this, that, and yeah. what is the equivalent? Because government is a non-market actor. Do we like, so how do we bridge that gap,

[00:28:55] **Lisa Porter:** I think the most important thing is the government has to recognize that, right? It's not a market actor as you put it. And so it has to always think about using

competition as much as possible to ameliorate. And of course you can't eliminate, but to mitigate that risk, they are introducing by the very fact that the government is in the central involvement, of those particular things. So you use competition you try not to pick winners, right? The government gets in this habit of wanting to pick winners. That's when I get worried about industrial policy the government doesn't know how to do that. We can, you and I can probably sit here and rattle off a hundred examples.

But rather than just site failures, we have to recognize from a principled basis that the government is not. Set up to pick winners as well. So instead it should set up mechanisms that allow it to run reward winners that emerge right, rather than subsidizing those who the government thinks are going to win.

And this is important because it's, as long as you keep that mindset, you can at least leverage the concepts of open, full, and open competition as you [00:30:00] pursue those things. That to your point are not truly market driven. And to your point about space X, the history of space X in part-- space, X did rely very heavily on government investment and the cots program that my colleague Mike Griffin started when he was NASA administrator, I think is a great example of how you try to balance that competition with the reality of, Hey, this isn't a commercial market.

So setting those milestone payments up and saying, okay, industry, I'm not picking a winner, it could be space X, or it could be Joe's launched down the street, right? I'm going to tell you what I want to see you do. And if you do it I'll pay. And it's a very clear milestone. It's a very clear way of saying I'm not picking the winner.

I'm just going to make the funds available if you can meet my target. And that was very successful driver. And of course, space X was able to meet milestones that others couldn't and it allowed it to leapfrog forward and has been a really good driver, as you said, for a lot of success in the community.

But that's a good, I think partnership, if you will, without a heavy hand of industrial policy, it's not like Mike Griffin went to Elon Musk and said, I'm going to pick you as a winner. And I'm going to give you this money. And, I'm just going to subsidize you and make sure you succeed. that might be what China would do, but that's not what the us should do. So to the extent you can introduce competition, even in the markets where, you know, it's distorted because you are the only customer you that's how you try to mitigate it, Erica, if that makes sense. Yeah.

[00:31:23] **Eric Lofgren:** That does make sense. It seems like there's that model of the asset service. If you build it, I will pay for it. But it seems like that would almost say government should not have very much research and development dollars. Pull those back into operations and maintenance or whatever, and then they just buy it from whoever could do it the best and provide that signal.

But I think with the milestone, you're saying a lot of these things are so big and so difficult. We need to have this incremental payment but it's not necessarily, they're providing me a

final product. I'm actually they're showing me tests and demonstrations. And then now you also said earlier, IP rights are very important.

How does that kind of fall into this? Because a lot of Silicon valley [00:32:00] types or new entrance. They're very worried about losing their intellectual property because the government helped fund them.

So what's your view there and is that a potential sticking point for bringing in these new companies?

[00:32:12] **Lisa Porter:** it is. And, Eric, it applies to space. It applies to everything. And I think the government needs to take a step back and say, what do I want? What is the purpose of me acquiring IP rights and demanding them versus not. There's a natural tendency. And it's understandable, right? To say, look, the taxpayer paid for this, if I invest in you, so it should have access to your product. And usually that's an IP, right? That's the generation of the idea of the designs and drawings. But the flip side to that is the taxpayer is actually paying the government in the case of the DOD to defend the country, using a variety of tools and techniques and I'm double blah, blah, blah.

So there needs to be a lot smarter thinking about, in some cases, if my desire is to fund early research, right? Very early stage, where I'm trying to advance the knowledge and the capability of fundamental level, then yes, I'm going to want everyone to have access to that outcome. That's fair. And I'm going to require government purpose rights, but as I go up higher and I'm asking for a product that you're demonstrating, then you know, why am I asking you to provide the IP?

When in fact, I just want to be able to procure the product from you and ensure I can if you can meet it, I can buy more of it. I don't want your company to go out of business, right? Because I've driven a way, the most important value in your company. So the problem here that you're touching on that drives me crazy is the government writ large likes to make binary decisions It wants that easy button. It wants a one size fits all and it's just, oh, it's just too exhausting to think about this in this particular context for this particular situation. Let me just have the written down rule that I have to follow and check a box. And that's the problem. That's not the way we should be executing.

So it, the answer is, of course it depends. And it requires thought, and it requires asking, what am I trying to accomplish? [00:34:00] And in many cases, the government should say, you know what? As long as companies provide the interfaces so that I can plug and play different products, like open standards model, right?

An open interface model, then I should allow the folks to own the proprietary things that connect. But they're going to have to connect according to my open interfaces. And if they don't get to play. That works for a variety of applications as well. Depending on the problem you're solving.

So there's definitely a way for win-win when you have smart government buyers and you have companies who are willing to frankly, push back and not just say I'm going to give the

government everything because I need the money so bad. And then two years down the road, they're really regretting it.

Which of course we've seen that play out. So yeah. It frustrates the heck out of me how the concept of nuance is apparently lost in the government.

[00:34:50] **Eric Lofgren:** Yeah. I'd like to say that everything that the government likes to do is a universal metric for it. How do we get to a contextual metric?

[00:34:57] **Lisa Porter:** We do. I like that contextual metric. You're coming up with a lot of good buzz words here that I'm gonna steal from you, Eric. It's absolutely right. So it does get back to one of the elephants in the room for conversations like this. And any conversation about the DOD is having the right expertise along the entire value chain, right?

From the early development of tech all the way up through the procurement of the product for deployment. And you've seen it, Jordan, you've seen it from your interactions with people and interviews that you've done. There are really good people, definitely scattered throughout the DOD, for sure, but there's also a lot of molasses or whatever slug in the system of people that really don't know what they're doing.

And you have people assigned to the wrong they might be good at certain skills and they're assigned to the wrong job too. That happens. And if you don't have the right people who have the confidence to say, you know, most things in life are not zero in one. That's why I'm a big proponent of risk assessment, right?

Risk analysis. It allows you to think through the pros and cons. Every decision you make has a [00:36:00] downside. Everything. There's no beautiful, perfect solution to anything in life. We know this, right? So given that I've got to be thoughtful, I've got to look at the context to your point, and I've got to be recognizing that there will be consequences to every decision I make, including no decision, and I've got to weigh those.

And then I've got to make informed decisions and I've got to be willing to adjust and adapt. That's the other point is we can't get locked into a decision because we made it two years ago and then we refuse to budge off of it, which by the way, we've seen a lot in the Pentagon as well.

[00:36:31] **Jordan Schneider:** So one of the places where there does seem to me, at least to be a lot of excellence is an In-Q-Tel a place where you spent a number of years. What do you think works about that organization?

[00:36:41] **Lisa Porter:** oh, a lot of things work. you know, And again, I'm biased, right? So I don't want to sound like I'm congratulating myself in any way but certainly they're very picky about who they hire. So they go through a pretty intensive hiring process. It's not just to come in for one hour interview and you're good to go.

They really want to find people who are smart and thoughtful and a little contrarian, willing to push back and who have a passion for the mission. And the mission there is supporting

the intelligence community as writ large. And all, and the reason that last part is so important of course, is that inky tells investments are made not to make money.

So people incorrectly call it the VC arm of the CIA or the VC arm of the intelligence community. And we always pushed back on that because our intent was never to make money. Our intent was to identify those technologies that could help the ICS mission. Once you got to that hurdle, then we would look very critically at three different elements of any investment.

One was the technical credibility, the due diligence from a technical perspective, one was the management team, right? And one was the business case because the company had to be around five years after she made the investment, or it wasn't any good wasn't going to do any good. So the level of diligence that In-Q- Tel brings to the investments that it makes is very high compared to what in the average, [00:38:00] VC investment, not to say VCs don't make assessments, but in-q-tel really, it does that diligence that I was referring to.

It doesn't just run with an investment two days after it hears a pitch. It actually does do those checks to say, does this make sense? And the reason is they feel a responsibility, not to financial return, but to mission return for their customer. And I think that's why it works. And they do not deviate from that principle.

It's grain ingrained in you and you're there. And I think it's very effective because of that.

[00:38:29] **Jordan Schneider:** This is one, for both Eric and Lisa, like how does that attitude hiring process, mission commitment, get translated out into the rest of the folks who spend money in DOD.

[00:38:41] **Lisa Porter:** No I will tell you that when I was there people asked Mike and myself, how it was that we were able to attract several really talented technical people. So when we were there, we stood up something called the modernization priority. And there were 11 of them in total, in different technical domains.

And we brought in people who were responsible for those areas and they were very impressive and people asked us, how did you do that? How did you get these smart people?

Like we said, you're not going to be here forever, but we'd really like you to come in for a few years and take this job.

Now, every single one of them without exception took a huge pay cut to do this. They were working usually in the private sector or in very high level jobs in FFRDCs where they were making decent money. That was fine because the mission was so interesting and important to them. And when they came in, we empowered them to then go and have that impact that they were looking to have.

That's the key. I think the Pentagon has an opportunity to attract really smart people, because a lot of people want to serve the mission in different ways. And Eric, I think it was your blog where you talked about you a rerun, a Rick over interview where he made this point, it's he makes it's a great point.

He said, look, I, and he was so right. Rick over was known for being an amazing leader, but also having amazing technical talent that worked for him. And he said, look, they're getting offers every week or whatever every month let's say, and they choose to [00:40:00] work for me and for the mission and it ain't for the money.

And I think we have to recognize it's not about the money. It's about people come for the mission and they stay, or they leave depending on whether you allow them the, the authority essentially to execute. We, then, the problem the Pentagon does is it does attract some good people and then it boxes them in so much that they can't actually do what they came to do.

And I think that's the challenge during that In-Q-Tel, by contrast, in DARPA, by contrast, which does have excellent staff empowers its staff. It says, you know what? I hired you because you're good. I'm not going to put you in a closet now and not let you do anything.

[00:40:37] **Eric Lofgren:** Yeah, it seems that, I think that's the key element there. Like the department of defense, it seems like it has a committee. All these people, they define a program of record. They find some poor SAP to go do it right. And that person's not really empowered in the way that you're talking. And I want to pounce on what you said.

You said we brought them, we got these excellent people. We brought them in for a temporary thing. And one of the Andreessen Horowitz thesis is, was that like the technical founders are actually the best suited to scaling a company and learning the business side compared to just like handing it off and apartment offense, the S and T people like DARPA they'll come in for five years and then they leave.

And then hopefully we get that thing transitioned, but, should the Pentagon actually be encouraging project managers from the SNT side to kind of transition along with their technology and really be like the human leading that effort. It's not in the program. It's like the person.

And then the program follows from that person like Rick over.

[00:41:33] **Lisa Porter:** Yeah. So the concept that you're highlighting of course is a very interesting one. And it's funny I will say that for some of my stint in the private sector, Teledyne and the CEO of Teledyne for a long time, I think he's still chairman of the board was Robert Mehrabian, who had been by the way, the president of Carnegie Mellon before he was at Teledyne.

And he used to say exactly the same kind of thing. He said, I would much rather take a technologist or an engineer who understands the product of the [00:42:00] business and teach them business than to bring in a business person and try to teach them technology. So he ran a company that way. And if you look at his track record, if you're interested, look at the history of Teledyne, it's a pretty good success story based on that thesis.

So I think Andreessen Horowitz, I think technology companies in general recognize the value of someone really understanding the technology is a lot more important than, not

necessarily more important, but a lot less difficult to deal with teaching them the business part than the other way around.

And that's kinda what your touching. Yeah. But, and so there's nothing wrong with that idea of saying how do we, because you're talking about knowledge transfer, and what you're saying correctly is if I just hand you a widget that doesn't do you any good, unless I bring you the knowledge some way for you to understand everything about that widget and how to use it and what its limitations are and how to integrate it and so forth.

And that's why if you bring the person along, you get that knowledge transfer along with the tech transfer, but it's not enough. So the real problem I would argue if tech transition in the DOD there's a couple of key problems. One is right up front getting the right people involved from the very beginning and successful examples show you repeatedly that the way to do that is you get the users and the designers in the same room early on, and the users have to define what problem it is that you're trying to solve.

And the designers then have to think critically and creatively about what can be done. And if you get people playing the wrong roles there, or you don't have the users in the room, you'll end up with a product that doesn't do anything that the users want. And vice versa. If the users just try to tell you what they want, rather than the problem they're trying to solve, they'll end up with things that don't make sense technically.

And so creating that team upfront that says, you know, the way we really should be executing is bringing the users, the designers, all in the room at the same time and laying out the plan and then iterating on it as we go through a prototyping and experimentation approach. Which allows us to learn early in often before we lock in and build something that doesn't [00:44:00] work that's, what's missing.

And that's, by the way, in part why USD(R&E) was stood up by the way in the department, because there was a recognition on the hill, at least that stuff was getting transitioned into the acquisition pipeline way too early, without credible and, defensible assessment of the technical maturity.

And without sufficient prototyping to really test it and ring it out. So at a macro level, the goal should always be build the right thing and build it the right way. And you don't build the right thing if you don't get the users involved and you don't build it the right way, if you don't get the tech people appropriately working with the users to make sure that the credibility is there, the maturity gets to the point where it needs to be and gets integrated effectively.

[00:44:39] **Eric Lofgren:** you know, I wanted to talk a little bit about the RNA split. Cause there was one big acquisition organization that had, the SNT, all the tech people as a sub-sector within it. And that idea was to get away from this issue, like at Xerox park where you had all these innovations going on the west coast, but they could never transition.

And so until Steve jobs actually comes in and takes a lot of those things and puts them together and founds, apple. Now in 2018 we split that back out there's R and D side and the acquisition side, and you were on the research and engineering side.

And a lot of people were fearing like, Hey, if we split these two things apart, we're actually going to get less transition. There's not going to be this kind of unity of command. So can you just talk about what was your experience with that big reorganization and like, where do you see that.

[00:45:24] **Lisa Porter:** Yeah. I think people don't know don't necessarily understand what was at the heart of McCain's push for this. And it was **Senator McCain who was really pushing this, as you probably know, Eric, the DOD did not want this. And that's been part of the problem,** but McCain recognized that the acquisition system was just broken, frankly, and he didn't have to be a genius to see that.

And repeatedly people had studied the problem at nauseum and they've done all these studies about what was wrong. And they came, they kept coming up with the same, root causes. And it was a lot of, it was tied to lack of good system engineering, [00:46:00] lack of good credible assessments of the technology in terms of the maturation of it, how long it would actually take to mature it to a point where it should be integrated.

A lot of failures are tied to immature tech, not being effectively tested and prototyping, not occurring, rushing into production, rushing into an acquisition process before the tech development had been really, truly played out properly. So what he wanted to do, and it's not, it wasn't a Xerox bell labs kind of thing.

What he was trying to do is elevate the importance of the technical voice at the table. For deciding when a program was appropriate to transition to acquisition. And there was a bunch of authorities that are new, was supposed to have along those lines to improve this process. If done properly, you would have independent technical review standards.

You would have a set of processes that you would follow to ensure that technology was mature enough before you gave it the green light to be inserted into programs of record, right? You would have system engineering standards for testing evaluation for both hardware and software along the entire value chain.

These were the things that he wanted R and D as an organization to have ownership for okay. To provide to the department. Unfortunately, first of all, he passed away. So his vision of the importance of R&E and how it needed this very strong voice at the table died out a little bit. It's not that the hill didn't still support it, but they were less strident about it.

And the DOD did not want it. You spent some time in the Pentagon, that the last thing that the services wants in general is to be told anything about what they need to do by OSD. And certainly introducing a new organization called RNA. And that was going to tell them, their tanker shouldn't be bought because it doesn't tank, which we tried to do.

It's just something they don't want. They gave us the hand and the services are very powerful. And for people who don't understand the Pentagon sort of **hierarchy, you may think that the secretary of defense and the deputy secretary of defense are, the ones that are in charge** [00:48:00] **when it comes to acquisition.**

No, it's the services that are in charge and they will give the hand to OSD as, whenever they need to. And that's a problem and it has not been fixed. But McCain was trying to fix that. What he saw as an endemic set of issues that he was correct about. A lot of issues stemmed around the lack of technical assessment at the right times and the lack of prototyping to really ring out the issues before you got to production buys.

And that's how you get an F 35. And if anybody thinks that's been a success, we can spend an hour or two on that one. So yeah, so that's, it's not the same as, Hey, I want to create a lab like a bell labs or a park where I can get some really smart people coming up with super cool innovation.

That's not what the standup of R and D was trying to do. That is a separate problem in a separate issue with which I agree with you, that people have written about very eloquently, but that wasn't the intent, right? That wasn't the focus. So is, was it wasn't as fun and the experiences I'd hoped to answer your question.

[00:48:56] **Eric Lofgren:** Yeah, I think there was a watered down version . I think the original vision was R and D would have the milestone acquisition process you know, all and that, and then it got none of it. It was just basically. Limited to the small dollars. I think it looked like 3% of the DOD is actually controlled on the SNT side.

And that was just like far diminutive of what D R and D used to have in the past, which was up through milestone C. Right.

[00:49:20] **Lisa Porter:** that's correct. And you're exactly right. So what I try to remind people is fundamentally the R and D role was about being the CTO of the organization and a healthy organization. Look at the private sector, that's run well where you have an independent technical group that actually sets the standards for execution.

If you look at really successful companies that build things, they have an independent engineering authority that sets the standards, right? The quality control standards for it. And those people are very powerful and they can not be told no, if they say, look, you've got a quality control issue as an example, that was I think in his mind, not that I ever met Senator McCain, I never did. I take that back. Actually I did once [00:50:00] but not in this context. That said, I think very clearly he was trying to be clear. I need that level of diligence and, elevation of the importance of the technical assessment at the table.

And he just passed away, unfortunately, and people weren't willing to see that through. Now there's still a chance to change that. I'm being vocal about it with people as is Mike Griffin as have others who believed in this. And we're hoping that it's given a shot, but who knows, I get asked a lot.

Do you think that at T and L is going to merge back together? And I have no idea, but I wouldn't bet against that. I wouldn't want to see it, but I wouldn't bet again.

[00:50:35] **Jordan Schneider:** I have 20 more space questions, but I feel like we should maybe continue that conversation another time. Maybe , I think, oh, underrated over it. It might be fun.

Lisa overrated, underrated emerging technologies with respect to national security. Let's start with five G

[00:50:51] **Lisa Porter:** okay. So 5g is one of my favorite topics. If you happen to track what I did in the Pentagon, and you asked me, is there anything that you did that you thought was somewhat successful? I would point to our 5g. We stood up a whole 5g plan and execution of that plan and it's going very well. So I, if you haven't looked into that, I encourage you to do a little background reading on it, but everything that we just talked about in terms of challenges of transitioning and getting the users and the technologists in the room at the same time, I went in with that mindset when I stood up that effort and I was handed the Baton by the secretary of defense at the time who was acting secretary Shannon.

And I was told, again, to tie in the China thing, Jordan, China's beating. Yeah, we have to win. And I said, I don't really know what that means when you say China's beating us. But I do understand that we need to get our arms around 5g and figure out what we want to do in the country. And leverage what the private sector is doing, because this is an example of a commercially driven enterprise and the DOD should be leveraging it.

So we put a plan together where we brought the user community in. We brought the entire DOD. Everybody worked very well together. [00:52:00] Basically because we just didn't do things like a DOD 5,000 or an act plan or a CFT. Eric, if you remember those stupid things there was no tents on tables.

There was no, I didn't care what your rank was at all. I didn't want to know what your rank was. I just, you could be part of the team if you had the capability to contribute. We brought in industry and we had real dialogue with CTOs of big companies and small companies, technical dialogues about what was possible.

And we put that plan together with all of that. And then we were transparent about it. We published and it's out there on the web. We published the DOD 5g strategy. We published the plan and now it's executing. There are large scale experiments at many bases across the country. With all the services engaged with the user community.

And when you hear the Marines talking about the importance of experimentation so that they know what they're going to leverage for their smart warehouses, you have to feel a little bit of success, right? You have to feel like maybe it's not a completely last that we can actually get to this experimentation culture that I've been talking about.

So 5g, in my opinion, in terms of your question is being appropriately emphasized, it's really important. In terms of ubiquitous content activity and the implications of that, both the positives and negatives for our national security.

[00:53:13] **Eric Lofgren:** How about on hypersonics, overrate, underrated.

[00:53:16] **Lisa Porter:** yeah. I think appropriately rated for a long time, the DOD did not pay enough attention to it. It kinda lost its focus on that. China took advantage of that and did a lot of good development, frankly, based on our technologies, but then to their credit, advanced, advanced the ball.

We woke up to that and said wait a minute, we need hypersonics for offense. We needed for defense. We need to be able to do long range strike. And in certain ways hypersonics makes the most sense. And very importantly, we need to know how to defend against that threat. And so I think it is now appropriately funded.

I think there's appropriate attention on it. I'd like to see them accelerate the production emphasis of the hypersonics and other. But other than that, I think I'm much, much happier about where we were, where we are now than where we were a few years [00:54:00] ago.

[00:54:00] **Eric Lofgren:** China just said that they came out with a mock 30 wind tunnel for hypersonic tests, and I've talked to a couple of people in the industry and they say that might actually be a real thing. But it seems like one of the things that maybe hypersonics is underrated, just because we don't seem to be investing in these like enabling tools and technologies to get us there.

And maybe we focus too much on just like the pretty end item at the end of the stage, rather than if we, if no one invested in electronic microscopes, then that would seriously have hampered, research in biology. I guess it's the same thing in in the department of defense.

[00:54:33] **Lisa Porter:** sure. And there are elements of hypersonics, if you want to get really geeky that you could say are under five. For sure. But overall, the focus of it, at least in terms of answering it at a macro level is significantly improved. The funding profile from the DOD has been significantly improved over it was where it was a few years ago.

And so I'd have to give it a thumbs up in terms of if you ask me overall, but to your point, there's definitely technology areas like thermal protection systems and things like that. And seekers and there's things. We could put more money against technology centric that would improve our capabilities for sure.

I'm just pleased that if you compare where we were five, four or five years ago, it's certainly getting a lot more attention and focus. And by the way, I it's one of the areas ironically, where the services are really working pretty well together. And that was a lot of effort on the part of the entire department.

So I'm giving it a, I'm giving it a good score, not an a, but I would give it a, a passing score, if you will, Eric to give credit for that.

[00:55:29] **Jordan Schneider:** . Machine learning, AI

[00:55:31] **Lisa Porter:** . Yeah. So I'm going to give you honest unvarnished opinions on this one. I think we've been really obsessed with this without knowing what the heck we're talking about half the time. AI and ML in particular really doesn't mean anything until you talk about the particular application you're talking about.

And so there's this incredible, this is another one where we're obsessed with what China's doing. And China comes out and says, we're going to be the best in 20, 25 or pick a date. And

somehow that makes it so, and suddenly we're worried about how much money they're spending and [00:56:00] we need to throw a whole bunch of money at it.

And I keep asking people what is it? There's this idea by a lot of people who don't understand machine like. That you can just sprinkle it on top of anything and make your system better. And it's not that right. There are certain problems for which machine learning makes a lot of sense to try to apply.

There are a lot of problems for which it makes no sense anything that's ill defined, it doesn't handle well. And I'm sure you guys have been exposed enough to all of the brittleness of machine learning that I don't have to sit here and go on about that. The department of defense has been making proclamations since I was there and continues to do so about how important AIML is without defining what that means.

In what context do they think it's most important? What problems should they be trying to solve with it? And I think they have a lot more work to do to get down into that level of assessment. The JAIC to me has always been a concern. It's been something where we gave it a huge budget, and then we decided afterwards it's, let's figure out what to do with it.

Yep. I'm not a fan of it as is. I think it needs a lot more discipline so I told you, I give you an honest

[00:57:07] **Jordan Schneider:** I it's interesting because I, feel like the setup of the Jake is in part a bit of a response to all the stuff that we were talking about earlier. Of trying to hire really good folks and pushing autonomy down. Do you think that sort of went awry in this

[00:57:24] **Lisa Porter:** it went awry. It went awry, I think to your point. Yes, there was goodness, there's always good intentions, or not always, but often there were people who recognize correctly, we have to think about what it means. And they were trying to define that they were trying to defined platform.

They were trying to decide how to develop data standards. So data could be shared. There was a lot of goodness in the early days of thinking about what the Jakes should be. The problem is then a whole bunch of money was dumped. And then it became let's go and do these problems and let's go and do this.

And let's and it became very all over the place. Meanwhile, you had project Maven being run[00:58:00] out of the USDI and there was questions about how does that tie into the Jake? And so there was a lack of clarity and a lack of focus. That's what I'm, that's what I'm raising as a taxpayer, getting back to my points.

If you're going to use my money, you better have a discipline to approach to how you use it. That's at least my standard. I'm not saying we're good at it, but I'm saying that's my expectation. And in the case of the Jake, I would like them to state a lot more clearly what it is that they believe their metrics are.

What is it that they're actually trying to accomplish? And how are they going to measure success? I asked that question multiple times when I was in the job. It was not appreciated

then, but I'm more free to ask it. Now tell me how you're measuring success. What are the metrics for success? And don't give me some baloney about we're better than someone else.

I don't even know what that means. Tell me what your metrics for success. And if you can define those and we can then debate about whether those are the right metrics and the right focus. Great. All right. But they're a long way.

[00:58:57] **Jordan Schneider:** Eric, anything on that?

[00:58:58] **Eric Lofgren:** No, not really. Yeah. It seems like their metric for success is that joint common foundations and enabling like an ecosystem and actually getting to what I think was those data decrees from Kathleen Hicks,

[00:59:10] **Lisa Porter:** Yeah, but those are all like squishy Eric. Okay, great. I agree a joint common foundation, which they've been talking about from the very early days. Sounds okay, that sounds like something that we should be talking about, but what does that look like? What does success look like? The Heilmeyer framework would go a long way here.

I'm a big fan of Haalmeyer and a big fan of those questions that say, what does the success actually look like? And tell me the metrics you're going to use to measure yourself, to assure you're on the path to that success that you've defined. It's a very simple question. They have not answered it into my, to my standards.

And so yeah, the concept of a joint common foundation, that's fine. But what does that look like? How are you actually going to get there? What are your intermediate steps? It's all big budget for them to be handle hand waving the answers to that.

[00:59:56] **Eric Lofgren:** I want to at least get to this one on blockchain. What [01:00:00] is that? Overrated? Underrated in government specifically.

[01:00:03] **Lisa Porter:** . Honestly, I think that's one that might be underrated. And I say that because there wasn't a lot of emphasis on it in the DOD, there was some fascination with it. It's a hard topic. I'm not an expert on it. I've read up on it. Cause it's cool. All right. And it makes sense in terms of some of the arguments around the decentralization from a security perspective and how things can be protected that way.

It's, it gets conflated with Bitcoin as you well know, not just in the government, but outside. It's not the same. Bitcoin is one instantiation of the idea. Whether or not Bitcoin makes sense for a variety of reasons. Fine. That doesn't mean that blockchain as a concept, isn't worthy of exploration, particularly when we're thinking about protection of data.

And how you do that. And new ways of doing that. So I actually think that might be an area that's worthy of more investment from a research perspective, again, I would like to see how my approach to that, to say, what specific applications are we interested in and how would we assess the value of this kind of approach versus the standard approaches today?

We didn't hear a lot about it in the building. We didn't hear a lot of discussions. So I think that might be an area that's worthy of a little more thought. Now that would be something

you might ask DARPA to look at, where you're going to have people who actually know that area who can dig into it.

So hopefully that answers that question.

[01:01:18] **Jordan Schneider:** quantum

[01:01:20] **Lisa Porter:** Oh yeah. Quantum. Oh my goodness. Quantum, first of all, when you say quantum, it can mean a lot of things, but quantum computing in particular, drives me nuts because there's no such thing as a quantum computer, not one that does anything useful. There are a bunch of startups out there who will claim otherwise they're full of it.

The reality of what it takes to build a car on computer, it's very hard. I'm all for credible research and investment in that domain. And when I was at IARPA, we funded a lot of really good research in quantum. So I'm all for investing in quantum computing, but I am not for the hype that has resulted from people who want it, who want to make [01:02:00] a quick buck, so to speak and who recognize it.

Most people who are investing have never taken a quantum physics class, so they don't even understand how much BS is being slung at them. So I get frustrated because I see claims being made. Of where we are with quantum computing and how much we're going to be doing in the next few years saw baloney.

And by the way, quantum radar also bologna. So your point, Eric, about, back in the day of days when the Soviet union was our nemesis and it was a very different adversary in many ways, but one thing we did then, and we do now is they would announce something and suddenly we get really hyper worried that maybe we needed to do the same thing, whether it was ESP research or the typical type, the particular type of fusion reactor.

There's a reason it's called a Tokamak. We saw that they were doing what, the way they did it and we adopted it. And by the way, they turned around and adopted our still operator. So they did it too. It's this old, what are you doing? We have to copy it. Or what are you doing? So with quantum radar, I, again, Jordan, maybe the Chinese aren't as sophisticated as I think they can be when they play the long game.

I just think they put that out there to mess up. And so when they started announcing that they had a quantum radar, I got so many emails from people like, oh my God, what are we doing in quantum radar? And I said, thankfully, I can answer honestly, nothing. So we got, we can't move away from rigor and discipline and we can't let fear and hype drive our decision-making process.

That's really what I'm getting at it. Your decisions have to be driven by logic, not hype and fear.

[01:03:28] **Eric Lofgren:** do you think that's one that the commercial sector will be pushing on and DOD can jump on it rather than invest itself?

[01:03:35] **Lisa Porter:** I think in this case, the quantum computing realm is ironically, it's an area where the IC and the DOD has done some very good quality research. Now, when I say

they've done research, they funded most of it. So it's mostly been academic. Some of the labs national labs have been involved as well.

So there's a private sector component to it when you consider academia as part of the private sector. But it just takes a lot of [01:04:00] time to do what we're talking about in terms of how many qubits are required. The stability of these qubits, there's a whole bunch of issues around it and really good solid papers have been written about it.

It's not to say we won't see advancements because we will, but they won't take, they will take time and they will come from a lot more investment at what you would consider like a fundamental research level later on, eventually when it's ready. Sure. Let's see what let's turn the commercial sector loose, but it's way too early.

It would be like saying right now that people had pocket fusion, reactors available, it's like that, come on. That's just not

[01:04:34] **Eric Lofgren:** to not get too down on quantum. Is there any light at the end of the tunnel for like quantum key distribution or some of these other things?

[01:04:41] **Lisa Porter:** so there are challenges there as well. And this notion that somehow we're behind China is just false. We, our scientists again are real scientists not people who are full of it. Ha have already made a lot of advances there who, and they understand what remains to be done. So the NSA actually not too long ago, came out with a very nice piece, believe it or not very public out in the open about the real challenges of Q K D and what needs to be done if you want to see it leveraged in a meaningful way.

And as far as the security attributes of it and what it's being, what it's being advertised to be able to do, there's a lot of downside to it. I won't bore you with it in the limited time we have. So it's not that I wouldn't say don't look at it, but I would say, look at it with the appropriate amount of.

Rigor and skepticism. And I don't mean cynicism, right? Skepticism, which is really about looking at something and saying, what do I need to understand? And what are the pitfalls of it and how do I understand what it takes to make it happen? So it's not, and, quantum sensors and things like that are also interesting.

It's not that there isn't really good stuff to do here. What I get annoyed with is the hype factor is through the roof. And it usually comes from people who don't, who've never taken a basic physics class, nevermind. A quantum physics class. So that's when I get irritated.

[01:05:57] **Jordan Schneider:** My science requirement in college was filled. [01:06:00] Quantum physics for non-science majors. So I'm going to, I'm going to check myself off and in your book for that one, at least Lisa additive manual. Oh, the other one that you don't appreciate was movie physics. So anyways the last one for you, additive manufacturing

[01:06:14] **Lisa Porter:** Yeah, a very compelling area, lots of potential applications. Again, this is one where you have to say for what purpose, right? What is the context to use Eric's

word? Does it add, does it, does that approach provide value that isn't there? If I don't do it that way, and there are going to be some areas where you try it and it turns out Nope.

Other ways of building make more sense. And in a lot of areas, it's going to be very interesting and we are seeing that effect, that, some of the rocket companies and the space companies are talking a lot about it, and I think it's very exciting. So is it overhyped? No, I only, because I think it's got the credit to pull it through.

I think there are enough examples to point to there as opposed to quantum computers where you can't point to one, you can point to real existence proofs of where additive manufacturing, this, making a difference. There, there are still challenges with it obviously, but I think that's an area where it's appropriate.

I would say it's an appropriate level of excitement around that.

[01:07:11] **Jordan Schneider:** Just before we wrap up first can you like say a two sentence bio of yourself? So what's kept you busy the past few decades.

[01:07:17] **Lisa Porter:** what's kept me busy in the past few decades. I've been involved in done a lot of different things. I started off, early in my career, you could say at DARPA and was a program manager there and had that's many ways, one of the best jobs anyone can have. And I went from there to NASA and I ran the.

Mission director there. So all of aeronautics had a lot of fun with that. Then went on to start IARPA was the first director of IARPA, which as you can guess from the name was intended to be, and is the DARPA for the intelligence community. So stood that up. That was quite a challenge, but it was a fun challenge.

And then I said, 10 years in the government, let's try the private sector for a while. So I went and worked for Teledyne out in California. Had a lot of fun there, whereas I, [01:08:00] I've mentioned many times. One of my mentors, Dr. Mehrabian was a CEO at the time, learned a lot about business and that turned out to be very valuable experience because until you've run a P and L and been responsive.

For the actual livelihood of people you don't really fully understand the pressures that a business person has, whether they're in the defense, industrial base or not. And so when I came back to the government first, I came back to inky Tel, which was a nice area of a balance between private sector and the government.

It's a nonprofit, as then I was asked to serve as the deputy, under secretary of defense for research and engineering. And I think that it private sector experience that I had really made me better yeah. At the job than I would have been without it. I really enjoyed that experience and what it gave me in terms of insights of knee and how to transition that technology.

I did that and now I am a co president of a small startup, if you will. It's a consulting company that my former boss and now colleague and I run together, Mike Griffin and I, and

it's called logic. L O G I Q. And as you can imagine, it's because we're big proponents of logic based decisions and analysis and assessments.

So that's me in a nutshell, I think

[01:09:10] **Jordan Schneider:** , Lisa Porter, thanks so much for being a part of China acquisition talk.

[01:09:13] **Lisa Porter:** Absolutely. It was a lot of fun. Thanks guys.