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Panel 8 – Invigorating the Innovation Ecosystem: Competing in the 21st Century

Moderator:

Lauren Williams, Defense One

Panelists:

Gen. Charles Q. Brown, Jr., Chief of Staff, U.S. Air Force

Theodore “Ted” Colbert III, President and CEO, Boeing Defense, Space, and Security

Karen Dahut, CEO, Google Public Sector

Hon. Heidi Shyu, U.S. Under Secretary of Defense for Research and Engineering

Rep. Rob Wittman, U.S. Representative, Virginia

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Lauren Williams:

All right. Good afternoon. Thank you all for joining us. I'm going to start this panel by addressing you, the audience first. We're going to do something different and make this interactive, so please, if you have questions, submit them through the app, and I'm going to take them throughout. Also, we have a polling question. If you could answer which part of the national security industrial base needs the most investment? And we'll get the conversation started and address your answer throughout. So, we've heard a lot today about China being the pacing threat for the Defense Department. I'm really interested from each of the panelists, does the current makeup of the industrial base, actually, is it sufficient to meet this challenge both with technological capabilities and workforce? Congressman, I'll start with you.

Congressman Wittman:

Thank you. Listen, I think the component parts are absolutely there for us to have the capability and capacity necessary to counter the Chinese. But I think the issue is speed. Can we get what is there today in the hands of the war fighter in time for it to have relevance in relation to the threat that we face from China? I think we have to look at ways to do things differently. I think we have to look at how do we encourage those emerging technology companies, those startups, to take what is pretty exciting things

that are going on there, and get that into a scope that's applicable and usable for the military. Do that in a shorter period of time. I think that we can do that. I think we have to though think with a sense of urgency. I think we have to do things at the speed of reality.

Listen, we understand that Pentagon's a great organization, but there are two speeds. The speed of the Pentagon and the speed of reality. Let's make sure that we're doing things with the speed of reality. And I believe, that we can do that. I really am enthused in the things that I hear and the things that I see with what's happening in the realm of technology. I know that our war fighters, our airmen, our sailors, our marines, our soldiers, and for that matter, even our coast guardsmen, have the ability to solve those problems if we give them the tools necessary to really be successful in that realm. And make no mistake about it, no matter the threats that we face from China, we can counter those threats. We can give our members of the military that tactical superiority, that superiority to where they're not in a fair fight to make sure that we prevail. And remember, it's not just about prevailing in combat, but it's how do we have significant capability and capacity to deter adversaries like China? Because I argue the real strength of the United States military is to make anyone out there think I don't want to engage them because I know what the outcome will be and it will not be good for the adversary.

Lauren Williams:

General Brown, what are your thoughts?

General Brown:

I do think we have the capability and aspects of the capacity. But I agree too Representative Wittman that we do have to have a sense of urgency. As I came in, as the chief, I wrote "Accelerate, Change or Lose." And I wrote that for a reason, because I thought there's areas that we need to move forward on. One of the key words I put in accelerate change lose is the word of collaboration. Because the Department of Defense cannot do this by ourself. We've got to work very closely with the Congress. We have got to work very closely with industry to bring all these pieces together so we can all move with the sense of urgency. We have done this before. Our nation has come together in times of crisis to be able to provide capability. I've watched this during the course of the events in Ukraine. Some things we've been able to move very fast on certain areas. What we want to do is not wait till there's a crisis to actually move at a pace with a sense of urgency. We've got to do some things crisis like ahead of a crisis. So, we're better postured and prepared to move forward.

Lauren Williams:

And keeping with that theme of lessons learned from Ukraine, what can you tell us that has been learned that will kind of just absolutely change how the Defense Department interacts with the industry?

General Brown:

I don't know if it's absolutely changed, because what we'll do is we'll do it and then we'll go back to our regularly scheduled program. But I have seen areas where we, we can very come very closely together with industry and be creative. And one examples I've

been sharing here recently is the HARM missile, an anti-reradiation missile, I've flown with an F-16s. We've been able to put on a MIG-29. If someone had asked us before the Ukraine events to put a HARM missile in a MIG-29, we've talked ourselves out of it too hard to do, can't do that too much policy. We're able to, you know, crisis to be able to figure out how to get things done. So there are ways that we can work with industry and those that actually build the systems to figure out how do we get into the details to move forward in, in certain areas because of a need in driving a sense of urgency. So there're, I mean, that's one opportunity that we've done other things like low cost ERs that we were building to put on our own ranges for our own training that we gave to the Ukrainians that they use to confuse the Russians. I mean, so there's opportunities like that, that, and a number of opportunities that we are, were able to, to do that we've got to continue to work on with our industry partners.

Karen Dahut:

Yeah. Thanks, Lauren. First of all, thanks, it's great to be here on this panel. I think we need to start by debunking the myth that these technologies are only experimental. That they're not proven that they need to be tested. In my mind these technologies, particularly when you think about AI as a tool for the department, these are global scale proven technologies that technology companies use each and every day. They're just not necessarily applied at scale for the Department. And so, when I think about things that the department can do to really encourage the innovation ecosystem and the broader defense industrial base to work on these very interesting yet challenging mission use cases for the department, I think there are at least three things, and there are probably many more we could be doing. The first and importantly, I think the Department needs a more modern approach to compliance.

The compliance of separation creates cost slow down and increases the overall timeline with which these technologies can be deployed. So that's one. And I think we can use much greater software focus software defined networks to ensure compliance that the Department needs. The second thing is that we need to focus more on application rather than experimentation. It is true to say that these technologies have not been necessarily applied. And I think that's where we need to focus our time and energy applying these technologies to use cases rather than getting stuck in the R&D pipeline around experimentation and, and believing that they are not necessarily applicable. And then the last thing in Secretary Shyu and I were talking a little bit about this before we came on stage. I think there's an opportunity to think about modular systems and modular building rather than the large big bang theory of a program of record. At the end of the day, software is going to power the department and the power, power of the department's response, kinetic or non-kinetic response. And the idea of building modularly and integrating with the use of software, I think is a very powerful concept.

Secretary Shyu:

Yeah. I'd love to jump in into this dialogue. So one of the key things that we initiated last year, and this is something that Dep. SecDef and Vice Chairman strongly pushed for is the RAIDER activity, which is the Rapid Defense Experimentation Reserve. Okay? This is where we literally work hand in glove with the joint staff to understand what are the joint war fighting capability that they desire to have. Because in any conflict, we fighting in joint war and we fight with our coalition partners, right? We don't fight within a single

service. Okay? So literally what we've done is gone through three different sprints, okay? Each sprint focus on specific scenario, which some of the seniors not going to surprise you where it's located in the Pacific, right? Okay. So, each one of these sprints we look for ideas. Are there items that's out there that's a prototype TRL level four or five that's good enough for us to experiment with at a, in a contested environment.

So, if it works in a lab, that's really great, but sometime it doesn't quite work in a contested environment. So, we're taking it to a contested environment to test things out and then to, it's a joint staff in, in conjunction with the COCOMs and the services. They say, hey, this proved utility. I'm working very closely with my partner Dr. Bill LaPlante on A&S I said, how can we then rapidly field this capability? It doesn't have to be a hundred percent solution, which takes a decade, right? But if it's a 70, 80% solution is good enough to solve a problem that we have within a joint war fighting concept, let's push it out in terms of capability. So, we're absolutely doing that as soon as we get an appropriation. Okay. So that's one thing we're waiting on. Okay. Please give that to us.

Congressman Wittman:

We need to get it done.

Secretary Shyu:

Okay. But, but that's exactly what we're doing on that side and in terms of looking for innovative ideas, and I want to thank Representative Calvert for giving us a hundred million dollar of app fit money. This is the accelerate the fielding and procurement of innovative technologies. This is where we're looking to small companies as well as non-traditionals. Do they have a solution to solve a problem that we have right. That we can help on bridge the Valley of Death? Namely, they've already proved out this technology. That you said, and the services, I love it. I want it. But usually once you prove it out, they say, oh, I'm going to put it in the palm. Well, that's a two, two to three years later process. Right. And then small companies can't just sit there totally their thumb for two or three years until our contract gets in place.

Right? Until we get, get a budget. So literally what we've done, we helped 10 companies to accelerate capability development, compress that by two years. So that's fantastic. And now with, with Secretary Defense announcing office strategic capital. We will again help small companies to figure out if they need to ramp up in production to help them with a capital to ramp up production. So, we're all for innovating and demonstrating critical capability that's needed and move at a speed of relevance. Can I add one more thing? One more thing that I'm doing is I have roped in all the FFRDCs and UARCs to be the extension of my technical arm. Right. I work, I collaborate with them. I have quarterly meetings with all the CEOs of FFRDCs. I have quarterly meetings with CEOs of UARCs, university affiliated research center.

I'm sorry for all the acronyms. Okay. But literally what they're doing is helping me out and build the technical underpinning of what we're strategically thrusting. We're developing physics based modeling simulation that's tied into a campaign level modeling and simulation. So I know the outcome if technology A versus B versus C versus D, which one makes a difference in the outcome of the mission. Then it tells me where to invest

money in. We're standing up, a highly classified war room will be inside a sciff. So I can lay out what is red cape doing, and then I'm able to lay out what we are doing and then help me to steer investment strategy towards leap ahead technologies. So that's exactly the path I'm on. Okay.

Ted Colbert:

So, yeah. Yeah. Let me just add in a little bit. I think I'll just weave in several of the thought processes because I think they're all relevant and absolutely right. The T-7A trainer that we have at Boeing, we went from computer screen to first flight in 36 months. This platform was delivered and developed with our partner in Sweden, Saab. It's another piece of the example, I'm going to just throw a little picture for you. And it is has, was built with using model-based engineering techniques, full size determinant assembly and all kinds of other current generation and next generation capabilities that allow us to field capability in an agile way and support a really dynamic environment that we're in. This is just one example. There are many examples very similar to this that we in and our partners in industry have delivered recently.

We need to do that like a thousand times. We need to do that over and over and over again across from seabed to space on many different platforms. And not only does that take us as the, you know, defense industrial based companies working well within our own four walls. It requires partnerships. And we've already talked about this conference, the importance of our partners around the world leveraging that capability and capacity from partners around the world. We have work in Australia in progress and in other parts that we all have to take advantage of. And then the emergent, what I call the emergent defense tech supply chain being able to work with them and we have, have work going on there as well to be able to ingest capabilities that they're delivering on the commercial side and make dual use work even faster. And there are examples of that as well. So, if you think about this whole idea of seeing the partnership ecosystem, both from a company, a traditional emergent global perspective, and then working at an agile pace to deliver capability at a pace we've never done before. I think the whole system has got to get working toward that objective. And we have examples where we've done it already. We just need to do it more.

Lauren Williams:

One of the things I wanted to get after with that opening question was whether the relationship that the Defense Department has with not only existing contractors, prime contractors like Boeing, like Google, but also startups. So when we talk about innovation that's often referencing these small companies that just have ideas they don't necessarily have the capital to really invest and scale them. So I'm wondering if the current state of that relationship is actually sustainable and how each of, from each of your respective podiums, how do you get after that?

General Brown:

Well, I'll just state I was in Silicon Valley this past week and met with a number of companies and met with a number of venture capitalists. I do see that there's opportunity to do this. And I do see a coalescing of focus based on current events and the interest in national security. But at the same time, what we've got to do is actually pick some winners and get some of these small companies to a point where we go, you know,

they, they're, they, they've showed that we've taken a small company to be able to go execute. And there's been examples of companies that have done things in the commercial, start small and move forward, you know out over time. Like SpaceX and Nvidia and others that have done this. But we've got to actually look at some of the ones that are going, doing capabilities today that we're going to need in the future, and how we align and bring them for. And sometimes it's going to take some nurturing, we just can't use a natural system that they have. We actually got to do, you know, kind of hand walk. It's like hands walking a staff package through the Pentagon to make sure it gets done. We've got to actually do that aspect to, to walk it through. And then once we've done that, we build the a habit pattern of doing things a little bit differently. And, and use that as an approach to, to move forward.

Karen Dahut:

Lauren, I, you know, I think it's fair to say that the speed with which the small incubation companies get to market with something that is commercially relevant and applicable to DOD has been too slow. But I would also say that since the instantiation of DIU, DIUX in 2015, 2016, if you look at the focus of the innovation ecosystem on the aerospace and defense community has been significant. The aerospace and defense market, in fact, recent numbers that were provided to me by my friend Shaw, would suggest to you that there's been no greater time than right now when the investment community, VC community has been investing in the innovation ecosystem in companies that are specifically focused on aerospace and defense. That's huge. And that is to Secretary Shyu's point, we need to get that capital working for us.

It is fair, however, to say that those companies have not been able to get to a scaled program inside the department. And that, I think General Brown, what you were referring to, how do we pick a few and then apply them? And this is where I think the idea of a modular concept is so important. Rather than trying to go to the Big Bang, a program of record, we need to pick a few, get put them in the hands of soldier sailor airmen, the Marines Yeah. To test them, to test them in contested environments and non-tested environments. The examples of what we learned in the Ukraine around how commercial technologies can really help in a contested environment. Those same lessons can be applied today to the innovation ecosystem. And I think it's very much akin to what you're trying to do, Secretary Shyu.

Ted Colbert:

You know, Karen, I spent six years as the Chief Information Officer for Boeing before running our services business, now defense business. So, I spent a lot of time in Silicon Valley. And the small startup early stage companies are product companies. They work on the basis of processes that are about delivering product on a consistent ongoing basis. Our industry is really designed around programs. Yes. And there is not a natural coming together of those two approaches, and we've got to figure out how to solve that. And I think that companies like ours who understand how to execute business development and contracting with Department of Defense and others have got to take a real strong, you know, lead and pull through a lot of these capabilities. And today it is, you know, you're right. The investment in defense tech from a VC perspective is significantly higher in general than general VC investment. So, there is a lot of opportunity out there, and it's essentially a field of daisies right now. That if we don't get our arms around and get

focused on the right things will not service well with regard to getting focused and taking advantage of bringing those, what I consider to be a real great product capabilities into big industrial capabilities and programs that can get fielded very quickly.

Karen Dahut:

Do you feel like you, I'm sorry, Lauren, I'm taking over your job. Sorry. I just feel like there's a follow up there. Yeah. Is there something that needs to be done to incentivize a Boeing or the large OEMs to really pull through these smaller product companies and these tested, you know, sort of technologies that may not have a platform?

Ted Colbert:

Yeah, I think we just, I think if you think about the agile methodology at large, it is about bringing everyone to the table. And the way that this works really well is if we have a war fighter a defense company and an emerging, you know, tech company all together trying to solve a problem.

Karen Dahut:

And a big tech company.

Ted Colbert:

And a big, and a big tech and a big tech company, we can bring them along too, right?

General Brown:

So actually, one of the companies I visited in Silicon Valley actually had two of the primes. Actually it, working with this small company. And so the more we actually spend time together. We can quit talking past each other and start talking to each other and getting in the same room to move things forward. And I think that's the real value of you know, building relationships. And for all of us that are here, particularly this panel, they have an interest in this particular topic. The more time we spend together, the more we'll be able to move this, move this forward and figure out where the friction points are.

Congressman Wittman:

I think there are three things that have to happen in order to get startups and emerging technology companies to scale in the realm of the national defense business sphere. First of all, is for years, DIU played the role as the mentor. So, if you're a small startup company, they were out there kind of looking around saying, Hey, what's out there? Who's doing what? And they were, the mentor said, they said, Hey, are you interested in being able to take your technology and let's help you mold it to where you can get into the process in the Pentagon, whether it was an OTA or, or mid-tier acquisition, whatever the case may be, to help them along. It used to be that DIU operated right under the Secretary of Defense. So really on, almost on a daily basis, the Secretary of Defense knew what was emerging in the small business sector there.

What was the Department of Defense needing to be aware of in order to solve these problems? And also how did we connect that with the war fighter? So, I think DIU needs to be back under the Secretary of Defense. Second of all is today, as we speak, phase

three companies are limited to no more than 50% VC money. Now, if private capital is flowing to these companies, then the private capital folks are saying, Hey, listen, this is where we think we're going to get a return on investment. Why wouldn't we as a nation want to say, let's follow that demand signal and make sure that we are following public dollars with the private dollars that are being invested there. That's kind of a signal. You know, we always talk about demand signal coming from DOD to the private sector. This is a private sector signal coming to DOD going, by the way, this is where we think an investment's going to make a return. So what we ought to do is we ought to remove the 50% VC cap for phase three. And then thirdly, is we have to be mindful too, of how these small companies see what's going on and put it in perspective of what happens in China. Now, if these sorts of concepts start in China, you know how they start. This is exactly how, how they start.

China starts with this blank sheet of paper, and they just go to work. They say, okay, what, what's the problem? How do we solve it? How do we put together all the opportunities out there out there? How do we put dollars in the right place? Now for a small startup in DOD this is, this is the flow chart. This is seriously, this is, this is the acquisition flow chart. So think about it, if you're a small startup and you look at it and go, now how do I navigate that? You know, no wonder the small startups in emerging technology companies are looking at it and go, man, I'm not interested in getting anywhere near that. And why are the Chinese outpacing us in the development of new technology and getting it in the hands of their war fighters? Because they start with this, and we start with this. We got, now listen, our, our start is never going to be this, but our start has got to be something that's a whole lot simpler than this.

Secretary Shyu:

So I would say that in terms of starting out looking at Silicon Valley and other innovative small company, DIU certainly was in the forefront. Okay. In the 2015 timeframe as a functional time, what has happened now, every single service has opened up their door to also look for innovative small company solutions to solve their problems. So now we have an innovation ecosystem. I can tell you in addition to what DIU's doing there's Army rapid capability and critical technology office fund, a small company to develop a piece of software. The company's here actually at the but the software will be able to detect cyber intrusion into, if somebody's tinkering with your engine, you'll be able to know that. So literally, so via Army's minimal investment, they demonstrated the capability on Stryker. Right now, they're deploying the software on airborne platforms as well.

So, what I don't want to happen, IT restrictions say innovation can only come out of one organization. Mm-Hmm. It has to be an ecosystem and allow every single service to look for innovative solutions, right? So that's the path that we are on and we are enhancing the availability of any of the services to search for solution as well as special ops guys who work very closely, small companies to look for solutions. So yeah. That is the acquisition pain points. So, one of I will emphasize one of the things. So, I've had, I have had a sequence of meetings, a round table discussion with small companies, CEOs of small company on a monthly basis. I heard their pain points. And what I ended up doing is creating a spreadsheet, because engineer, you create spreadsheets, right?

Of all these pain points, I had pages of stuff stuffing, I categorized it, and then I shared it with Dep. SecDef. I said, here's the pain points I have heard from small company in terms of dealing with the DOD. And she said, this is great. Let's go tackle this. Right? And then she wrote in acquisition sustainment, the CIO, the, the SAPCO office, the special programs office CDAOINS, all the organizations used said, let's look at how we can collectively tackle this problem, because it isn't one organization that can solve everything. So, under Dep. SecDefs, constant pressure on all of us to work these problems. She has monthly meetings with us, by the way, to make sure we're progressing on it. And she literally defined, okay. INS with CIO, your job is to simplify the security aspect of it.

Namely, why does it take a year to get a secret clearance? Why does it take so long to get a facility clearance? So, they're working on that aspect of it. Okay. ANS is working on the workforce, innovation workforce. How do we sustain our workforce? And, and what I'm working on is bridging the valley of death which ties into what we're doing on strategic capital. We have a bunch of initiative that we've laid out, we just presented to everybody through a DMAG. And things we need, need to do is simplify our acquisition simplify our contracting so we can award small company much quicker. Right. Rather than taking many, many months to go through contracting. So, we're absolutely are trying to tackle a lot of these acquisition pain points.

Ted Colbert:

And by the way, you know that, that chart, which is very interesting, thank you, congressman. We're talking a lot about the small companies in Silicon Valley. We have people that are experts in that know how having navigate that chart. And I would much rather them be working on innovating than navigating that chart. That's right. So, I think it's not just a problem for them, it's, something we all need to work together on for sure.

Lauren Williams:

Secretary Shyu, you mentioned the magic word, which is workforce. And according to our poll our audience thinks that investment in the workforce is one of the areas that needs to, that needs improvement. Can you talk more specifically about how you're addressing that, particularly in the STEM area, and then the rest of the panelists? I'd love to hear your thoughts.

Secretary Shyu:

Yeah. Certainly in my world I'm trying to attract top talent, right? One of the things that we have done is we created this smart scholarship program and the smart scholarship programs, I'm going to pay for your undergraduate degree, right? If I pay four years, your, of your degree in one of the 21 STEM fields of interest to the DOD, you spent four years working in one of our DOD labs afterward. Okay? If I pay for your PhD, maybe you have to spend a little bit more time, right. Depending how long you finish your PhD, right? So, so literally, this is exactly what we're doing. And last year we funded 482 smart scholars, alright? And this year we want to increase that again. So again, the STEM workforce that we built is going to benefit the DOD. Okay. The other thing we did is we created STEM camps, which in high school students, look, you know, I'm a geek, right?

So, I can, I would've loved this as a junior high school student to spend a week in a lab as a camp, right? So we did that for 1,200 junior high school student, 10 STEM camps. It was highly successful and kids loved it. Half the kids were basically sons and daughters of our active service members, right? This is a great way to innovate them to go into STEM. So we fund a lot of those activities to make sure we have a steady pipeline of STEM talent into the workforce. Having a strong workforce is incredibly important, right? There's absolutely no doubt about it. I will say one other thing that's painful for me, I'll be candid with you guys. You know, I have to attract top S&T talent, but the salary in the government is going to be less than half of what you can pay at Google, right? And yet you're expecting me to attract the highest caliber talent. So, these are all the handcuffs that I have that's on my ankles and my, and my wrist, and you're asking me to hurry up and race and beat China. Just wanted to let you know this. Okay.

Karen Dahut:

We do hear that a lot, and I appreciate you saying that. We hear it a lot at Google, and I'm sure all of my colleagues at other technology companies would say the same thing. It's about compensation. Compensation. And I would argue that sure, it matters, but that working on really, really hard problems is also of equal importance. And it's how you put your talent to work on those problems that matters even more. And you know, there's this seminal study in 2008, McKinsey did it about the responsibility of leaders in creating an environment for innovation and ideation, and the incubation of technology and what it said that leaders can do beyond anything else. Paying people, developing people is creating a culture, creating a culture that celebrates ideation and innovation and gives them opportunities immediately on day one of working in that kind of environment.

You know, Google is privileged to be a cloud native company, only 24 years old. And when I look at what the company is achieved in 24 years, it's pretty astounding. But I do think it's a credit to the culture that was created, you know, 24 years ago. It was about taking risk and trying things rather than about failure. It was, it is about, I should say it still is this way. It is about this idea of curiosity and not organizational boundaries, being curious, enabling people to work across the entity, across the organization. We have these 20% projects, which are amazing, where any Googler can say they want to work for 20% of their time on some interesting project, and they can immediately be applied to that hard problem. So I think that yes, roles matter or compensation matters. We are not naive to not believe that. But I think equally as important as the role in leadership in creating the right kind of environment for people to really flourish.

Congressman Wittman:

And I think too, that there's, I think too that there's another dimension to this that we ought to be thinking about, and that is the value of practical knowledge and what happens in the military is something that is of great value on the private sector side. And the question is how do you always cross pollinate that? So how do you encourage folks that have maybe had a military career to at some point go into the private sector? And how do you encourage folks in the private sector to look at it and go, well, maybe I have an opportunity in the military. And I think there are two ways to do that. First of all is to look at within the military and see if there can't be a more formalized exchange program. And there's a little bit of that within professional military education, but I would argue at a higher level to say, why don't, why don't we do a time of being able to

have a military member do a sabbatical to, to say, instead of going to school, which sometimes they're allowed to do, is to say, listen, I want to go and spend two years working at Google so I can understand what happens in Google.

What happens with that mindset? What happens in that culture? And then bring that back to the military to be able to do those things. Another element too is for the private sector to say, maybe there are additional things that we ought to do to encourage our employees to become members of the reserve of the Air Force Reserve, the Army Reserve, and make sure that there's a formalized program there where the company says, Hey, listen, we want to make sure each year our goal is to have X number of our employees sign up and become members of the reserve. And think about that the reserve would be in perfect position to put them into a cybersecurity role, to put them into an intelligence role where they could use even more effectively their experience in the private sector, in what they need in the military. And that it's informed on what is happening in the real world. I think if you do more of that, I think there's a great opportunity there that is somewhat unrealized in what can happen in workforce in looking at how do we do more in a formalized way with an exchange between the military and especially the tech sector.

General Brown:

So let me jump right on that one since yes, this has been high on my list. We do have education with industry but I've also talked about education with DOD. And so, I've been able to work very closely with Google to identify three people that are going to come work with the department of the Air Force. But I've given them a bit of criteria that we got to make sure we put them in a meaningful place so they don't crush their spirit. You know, they, they have to work that work that Charty show you know, short periods of time where they can come in, learn a little bit more about DOD and the key part, if you bring them in young enough, they build a relationship with some of our young officers and NCOs, and they continue to grow up, and they, they'll be us one day. Yeah. And they're able to help break the, the culture. So that's one aspect that we're trying to get done, and when we're looking to broaden that with other, other companies as well. The other thing I'm also looking at is when we do put, send our, our talent to education with the industry, how we bring them back into the force Yeah. Because we'll do is you know, sometimes that's considered a good deal. And so their, you know, their functional manager will come back and say, well, now it's time for a bad deal.

No, we actually got to take, take advantage of that good deal they had and put them in the right job when they come back into back into the Pentagon or whatever part of the Air Force. And those are the areas that I'm focused on. Last thing I, that I'm also trying to do is actually have some non-traditional career paths Yeah. Within the, within our Air Force for those that actually have these special skills, love what they're doing. And if I can lead them where they are continue to promote them and allow them to move forward. And until your last point, I had a chance with the DIU this week and the show shared program with me called Gig Eagle. And it's the same kind of thing where you have a reservist that has a skillset, but how do we'll replace them within the Air Force because of their civilian background and how they can connect with the industry. But your, I mean, your point's another great, great one that have those that are out in the private sector to come join the reserves. We're hiring. So we will.

Lauren Williams:

I want to pivot real fast to an audience question. Last year, the Congress created a commission on reforming the Pentagon's budget process. What potential reforms would you put on the table for that commission's consideration in order to accelerate innovation in these tough operational problems?

Secretary Shyu:

So maybe I can shoot pipe in a little bit. So this is the PPPE commission you're talking about, which thank you. Thank you guys for standing that up. Commission. Okay. We have all kinds of issues that we could need help on. I think in the race against China, we handcuff ourselves in terms of processes and rules and regulations. Right. We have colors and money in which you, of course, you segment our, our DT&E then we segment procurement, then we segment operations and maintenance money. It's an arbitrary divide of money that's one thing. Okay. The other thing is, we have this culture of use or lose it. Right? If you don't spend your money by end of the year, you're going to lose the budget. So, one of the things we have asked for, especially in terms of funding university research, can we alleviate that? So, work very closely with comptroller, with OMB to change that process. So, because the academic cycles not necessarily fits well in within our pumps with our fiscal cycle, right? So, there's a lot of these things that we can help to change the processes to help us move faster. And please don't give us CRs every year, that could also help.

General Brown:

Okay. I guess one thing I would add just to that is there are things we could change, but I also believe there's, there's cases where we do have authorities to actually do things faster, yeah. That we just don't have the habit pattern of doing. Yeah. And so, what we got to do is challenge ourselves in some cases, to, to really figure out if we already have the authorities Yeah. You know, why aren't we using them before we start asking? I mean, we need to probably look at some more authorities and some different approaches, but there's some things that I think we do have that we, yeah, we have a habit pattern. We've done this a certain way all the time. We've got to break that habit pattern and, and take full advantage of all the, the tools we have to move faster in certain areas.

Congressman Wittman:

I think that's a great point. What you see today is a structure that puts everything towards the concept of the requirement. So, if you have a company that says, Hey, I got a great idea, I can do it less expensively. And someone in the Pentagon goes, well, I'd love to do that, but guess what? I don't have a requirement to do that. So, we're not going to do that. And there are other avenues OTAs other transaction authorities MTAs, middle-tier authorities, all those things are there. But the problem is, is they are the exception rather than the rule. So, I think what we have to do is to reform the processes in the Pentagon to say, all of these efforts, whether it's requirement driven, whether it's OTAs or MTAs, all exist on a level playing field. So, if somebody comes in a windshield, they look at it and go, there's equal access to all of these.

Now, a lot of times they're told that, so someone says, well, there's not a requirement, but you can pursue an OTA. And if it's a new company, they go, well, what's an OTA? And how do I go about doing that? So, we have to simplify the process so that folks know very easily, this is how I navigate it, and this is how I can get in to make sure that I can do business in the Pentagon. I think that those things are incredibly important. And as we looked at the acquisition process there, the simpler that we can make it, the more basic it is to a connection between the capability that a company has and the capacity that they have, and the quicker we can get it, General Brown, as you said, the speed element of that is critical. How do we increase the speed?

How do we simplify the process? If we do that, all of a sudden, the innovation and creation that we long for that needs to get there, that needs to get in the hands of the war fighter, gets there faster. And the closing element of that too is that as we bring those companies in, and it's been mentioned here before, but I don't think it can be over-emphasizing that, is as we are developing this technology, it needs to be a ground up development. So it's great to have the Joint Chiefs and others look at this and go, yeah, that would be a great, great opportunity for that technology to be applied. But it has to start with that Marine Lance Corporal with that Army Private, with that third-class airmen, with that third-class seamen and work from there on up. Because let me tell you, those individuals are incredibly talented, incredibly insightful, and they know what will work and they see it each and every day. And what we learn from them is invaluable. If we have a system that's from the bottom up and assures that what comes from there is what guides our technology, and we make it simpler for those companies that say, we got a great idea. Have them start with folks there at the ground level, and then have a quick and easy pathway for them to get there. We can do things at the speed of relevance, at the speed of reality.

Karen Dahut:

And Congressman, I think we have a great example of a place we could start. Obviously necessity is born out of crisis, oftentimes, and with the war in Ukraine. Many commercial companies as well as commercial companies from within the defense industrial base, as well as defense itself, brought great technologies to bear in Ukraine for the Ukrainian people. Google brought its network, its to, to help secure networks across Ukraine. We brought Google Maps to help make sure we could help the humanitarian crisis in the Ukraine. We were able to, using our networks, protect from cyber-attacks as well as to instantiate no kidding capabilities to ensure the safety of accredited news sources. Yeah. So these are, and I know that there are many other companies that are in this audience today that also did great things.

Anduril, I know did some wonderful things around drone technology in Ukraine. And I think this is a great example of where out of this crisis, we were able to bring commercial technologies and apply them in the soldier, sailor, airman, marine on the ground. To your point, used them and they, they worked. And so now how do we learn from that? Yes. Yes. Ellen Lord is on the PBB Commission. We were talking about this last night. How do we learn from those products and capabilities and technologies that worked in Ukraine and get them into, you know, the, the acquisition system faster? I don't, I don't, I'm not apply. I'm not, I'm not asking you that question, but I'm, I wonder what we can do around that.

Ted Colbert:

Hey, Karen, I think your examples a good one. And at the risk of talking myself into a partnership with Google on this stage.

Lauren Williams:

All in.

Ted Colbert:

If you think about what you just described and the capabilities that you all delivered and to support Ukraine many of the defense industrial based companies delivered capabilities as well that we won't talk about on the stage. But, you know, if you think of, if you're the right hand, I'm in the left hand, I'm not sure I the right hand knew what all the right is doing. And how does the future operate much more efficiently and, and with more agility in that we actually know what the right left hand are doing and we recombined those capabilities to, to field you know, things that really matter going forward. A good thought process for us all.

Lauren Williams:

Secretary Shyu, your office stood up the Office of Strategic Capital this week, and I'm interested in combining a couple of questions from the audience and my own. How much is appropriated for this office and how will it be different in terms of being able to solve some of the investment challenges in these emerging technology areas?

Secretary Shyu:

Yeah. I would say we, our intentions not to become a gigantic fund. Okay. Our intention in terms of funding folks it's very unlike RADAR. Okay. RADAR. We put a chunk of money in there for the for the experimentation. Okay. The purpose of Office of Strategic Capital is really to work with our investors in terms of the venture capital area. There's no need for us to duplicate a fund. Okay. So, we're working with the venture capital folks to say, Hey, there are some critical technologies that we want to make sure that we as a nation keep. So, there's no adversary capital that's investing there and, and the product gets stolen. Right. <laugh>. So, so one piece is that the other aspect of what we're trying to solve is working very closely and collaboratively with a small business association, we can then leverage the capability that already exists in, in terms of in terms of leveraging funds or creating funds. I mean, right now SBA small business has over 300 funds that's available to help small companies. Right. So, we want to leverage that type of debt and equity that's available perhaps to also provide a small company who needs to capitalize to get into production to help them to get some guaranteed loans. So, these are some of the concept we're exploring, but the fund that we're asking for is for manpower to stand up the office. So, it's a very small chunk of money to stand up the this office. Okay.

Lauren Williams:

Can you say how much?

Secretary Shyu:

No. Yes. It's not his budget yet. That's, that's right. I can't tell you

Lauren Williams:

General Brown I'm interested in any initial thoughts you have on how the Air Force might work with this office. I know the Air Force has F-Works where a lot of those investments take place. But since this is new, what are your kind of off the cuff thoughts?

General Brown:

Well, I see it as an opportunity and you know, it's just announced so it's not you know I've only read the, some of the press reports haven't had a brief associated with it. But some very nascent understanding of what the opportunity may be. But the key point there is, is having capital to support these small companies and grow beyond you know, our [inaudible] that we already do. I also take up on what Rep. Wittman said, you know, if VC's putting money against it, don't put a cap against it. Yeah. And so look at opportunities of how we, you know, make sure that these small companies don't have to wait the typical two years to get into something, particularly have a capability we are highly interested in because it's not only the small company, but it's also to figure out how best to help it scale, particularly, you know, as we're going to bring it into the Air Force or within the Department.

Because that's another piece of this puzzle that we don't often talk about. Great technology, great idea. Are we going to be able to scale it? And that's another aspect. And I think this is where thinking through this is at one area, the, the last thing I'd hit on is because I was as I was in Silicon Valley, and this was announced some of the people I were talking to said, don't only focus on the software side of this. We need to focus on some of the hardware. Particularly as you think about semiconductors and a, I learned a lot this past week on semiconductors and artificial intelligence more so than I had in the past. And we've really got to think about the, the all the things we need to do to bring the capability forward. And there's small companies doing this, but there's also large companies that are doing this as well. But I build up on what dad said, left and the right hand. Yeah. Left and right foot. We all need to know what everybody's doing and that's the challenge, whether it's between companies or levels of classification as well. And that's another, I think another challenge we have that we got to work through as well.

Congressman Wittman:

And I think the Office of Strategic Capital needs to be complimentary to the Defense Innovation Unit. So, and, and APFIT I think has had a good first start. I think the a hundred million that was there was a good first start. The question is, is how do we make sure as we are allocating dollars there, that we indeed get the dollars to the amount that make sure that these companies can take that leap to scalability. And listen, I understand with the a hundred million and split amongst 10 companies, as I've talked to them, some of them have said, Hey listen, we could maybe get there a little bit faster if we had some more. So, from our standpoint, what we have to look at is how do we enable APFIT? How do we make sure too that we elevate the function of DIU?

How do we make sure too that the officer strategic capital is working as a compliment in that? Because they're now, they're kind of all these moving parts out there. You have

APFIT, DIU and offers such strategic capital, so let's make sure that they're not conflicting with each other or not taking away from one effort to another. I look at them as complimentary efforts, but we have to be very careful to make sure that they don't take away from other efforts. Because if they do what that duplication is really going to make things difficult.

Secretary Shyu:

Yeah. It's certainly not the intention to duplicate at all. Yes, yes. Right. It's really to help the small companies in looking at multiple avenues that we have in terms of helping out small companies to scale up get into production. Right.

Lauren Williams:

And in that same vein, I'm interested in the industry perspective there on how important this venture cap, venture capital investment is in actually scaling these capabilities.

Ted Colbert:

I mean, my, from my perspective, you know, seeding the innovation economy is good for everyone. And that is one of the, I think, strategic differentiators that we have as a country and as allies is that we, we have diversity to leverage. And if you don't see the diversity, you don't get the value out of it. Now the trick is seeding it and then finding the pathway to get to scale. And I do think that figuring out how we get the whole ecosystem working together, how we get these cogs in line with one another is we're successful will come out and, you know, we are all obviously really keen to be a part of that. We won't be able to do everything ourselves. Right. We are a hundred, we're a hundred and some odd year old company. We do a lot of amazing things really, really well. But we also know there's a lot of things, things out there that we can do better and we can partner up with other players to do so. So, we look forward to, to working with it all.

Karen Dahut:

I think Ted said it well. The only thing I would add to it is I think it should give us a lot of hope that so many young entrepreneurs want to work in this space in aerospace and defense. They are mission driven, purpose focused, and I think seeding, you know, the innovation economy as Ted said, I think it will really rally even more young entrepreneurs to this space.

Secretary Shyu:

Absolutely. Yeah.

Lauren Williams:

And we'll do a quick wrap up. So, what are you, what do you expect to see? We have facing threat, that's China. We have the ongoing war in Ukraine, we're talking about innovation. So, what can we expect to see in terms of new emerging technologies, capabilities, partnerships, technology exchanges in the coming year? And you can just go down, I'll start with you, General Brown.

General Brown:

Well, I'm not sure I'm going to be able to tell you what technology, I'll tell you what problems I have to solve. And that's, I mean, that's really what I'm focused on as a, as an operator and as a service chief is to provide operational problems. So those that are working with technology can help us solve those problems. And this is why the collaboration is so important for us to spend time together to share the problem and then turn to our, our, our partners in the industry, no matter how big or how small the company is, and then allow them to help us solve those problems.

Ted Colbert:

Yeah. I think you know, we're focused on some of the really big items we've talked about things like advanced autonomy you know, next generation really important materials. Artificial intelligence, great software needed in everything. And fixing the supply chain on the hardware side. I think all those capabilities will create the building blocks for the next generation of capabilities that even this emergent innovation economy in the defense tech world will be able to leverage. And I think those, all that the entire ecosystem is really important to all of us.

Karen Dahut:

Well, two things. First of all, it sounds like I'm walking out here with a strategic partnership agreement with Boeing. So we'll do that. Second, the second thing, and more importantly obviously is I think using AI to really power the digital transformation of the department. And that's where we are, you know, wholly focused.

Secretary Shyu:

I want to add one more thing that I forgot to mention a little bit earlier. We are partnering with our allies and international partners. I see Australia sitting the front as one of outstanding partnership we have with Australia. We created a classified construct in which we can share information. We're collaborating, hand in fist to deliver capabilities that's going to be interoperable, born interoperable, right? And they are moving really, really fast. So we can deliver some of the capabilities a lot faster than just developing on our own. Okay. So I want to thank my Australian partners right here. Okay. To give them a shout out. But we're doing the same thing, looking across other ally partners, see what they have in terms to compliment us, not to take away from our work, but to compliment us and accelerate capability in the near term. Okay. Lot of stuff we're doing on classify, so I can't really, I don't want China to find out.

So, I'm not going to tell you about it, but we're, we're doing some really cool, innovative stuff. But, and, and the other point I want to emphasize the focus is you cannot say innovation only comes out of commercial company. There's a lot of innovation coming out of our defense industry as well. A lot of stuff are in the other world that you don't necessarily see the details. But there's a lot of innovation coming out of theory as well because the capabilities, well you just saw B-21 rolled out, right? There's other stuff that's development that has significantly even more capabilities, right? And that's being enabled by our defense industry. So I don't want to just say, Hey, innovation only comes out of one sector. It is a holistic, it is defense industry, commercial industry, our international partners and allies. Okay.

Lauren Williams:

Congressman, close us out.

Congressman Wittman:

Yeah, I think the single most important thing that we all need to keep in mind, and you heard this theme in common with everybody here on the stage about what is the path forward is the way that we are going to prevail strategically is to make sure in the economically challenged environment we're going to face in years to come, is how do we get more per our dollar than the Chinese get per their yuan or the Russians get per their ruble. And we've shown that we can do that and we will win strategically when we are able to make sure we bring all the things we talk about with innovation and creation in Congress needs to play a critical role there to make sure that we either take away impediments that may be there for the Pentagon or for the industry, or add things that are tools for the industry or for the for the Pentagon.

Those things I think are incredibly important. How do we get the most out of those resources? As Secretary Shyu said, our allies are going to be critical there. Australia obviously an incredibly important one, but there are many, many other ones out there. They bring a significant amount of resources to the table as well as the leverage of private capital. Folks, that is the path forward and we will prevail because we will do more per our unit of currency than anybody else in the world. We've done it before and we will continue to do it and that's how we will prevail strategically.

Lauren Williams:

I want to thank each of you for being here today, and thank you for joining us. That is our time.

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