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CNAS Event Transcript: Crafting a U.S. National Technology Strategy

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# Crafting a U.S. National Technology Strategy

## I. Opening Remarks

Richard Fontaine: Welcome everyone, and welcome to this event on developing a U.S. national technology strategy. I'm Richard Fontaine, CEO of the Center for a New American Security. Today, our event is part of a project aiming to develop an intellectual framework for a national technology strategy for the United States, one that can serve as a road map for a successful long-term role for the United States in innovation and technological leadership. It stems from the belief that we need a national approach to our technology policy in order to compete effectively against a rising China, to promote U.S. security and economic prosperity, to ensure the betterment of society both at home and abroad, and for a variety of other reasons.

Richard Fontaine: The project behind this focuses on how the government should establish technology policy on key issues—accelerating American innovation, mitigating the risk to U.S. tech advantages, contending with the tech strategies of American competitors, and so forth. At CNAS, this is a U.S. government supported initiative that we're involved in right now, and it's exploring a variety of options to boost innovation through things like R&D funding and developing human capital, STEM education, high-skilled immigration, upskilling, setting technical standards, supplying public goods like in data and computing resources and so forth. Then also looking at the institutional and the bureaucratic processes through which the government can develop and execute an effective national approach—how it can be implemented.

Richard Fontaine: The event that we're gathered here for today is going to draw on this work and as it goes forward, and also some of the themes that were covered in a CNAS report that was released earlier this year called "Taking the Helm," on the case for a national technology strategy, and what a framework for that strategy might look like. You can stay tuned for additional reports and commentaries to be released as this moves forward. To kick off the discussion today, we're going to feature a conversation between Michèle Flournoy, who, among many other things, is Chair of the CNAS Board and Martijn Rasser, Senior Fellow in our Technology program here at the Center. With that, let me turn it over to Martijn to start off the conversation and thanks again to everyone for joining us today.

## II. Fireside Chat with Michèle Flournoy

Martijn Rasser: Great. Thank you so much, Richard. I really appreciate you teeing up this event and this conversation. Michèle, welcome to you. It's always a pleasure to have you at CNAS, of course, and congratulations on being named our new Chair of the Board.

Michèle Flournoy: Great. It's always like coming home again, so I'm glad to be with you.

Martijn Rasser: Michèle, let's just dive right in and let me open with a high-level question for you to really frame the discussion that we're going to be having this afternoon. In your mind, why does the United States need a national strategic approach for technology? What are the challenges ahead, and what's at stake?





Center for a New American Security
1152 15th Street NW, Suite 950, Washington, DC 20005
T: 202.457.9400 | F: 202.457.9401 | CNAS.org | @CNASdc

Michèle Flournoy: I think if you look at the geopolitical environment, the shifts we're seeing, particularly the rise of China and the more competitive nature of our relationship there, and the implications that has for what kind of international order we're going to have in the future, what kind of relationships we're going to have with partners and allies in the future, it has so many implications for us. When you look at that competition, it's multi-dimensional - it's economic, it is technological, it's military, it's even ideological or political. The United States' ability to keep our technological edge in key areas—and it's not going to be across the board— but in key areas that really matter to either our economic competitiveness or our national security, that's going to have huge ripple effects in terms of our ability to safeguard the prosperity and well-being and way of life of Americans at home, to underwrite deterrence and our alliance commitments and our interests abroad, and to shape the global order, particularly in the Indo-Pacific, but also more broadly. The stakes are very, very high, and I think we've seen that without a clear national level effort and strategy, we are taking a risk that we won't keep the edge in key areas where we really do need to do that.

Martijn Rasser: Yeah. Speaking of that edge - now you've warned about the United States losing its military technological advantage and with it, its capability to deter or defeat Chinese aggression. Now, a specific assessment of yours is that while the Department of Defense is improving its ability to identify and access innovative technologies, the Department often fails to field these capabilities quickly and at scale. This is, in part, an issue of process and priorities, but what specific lessons can we draw from these challenges at DoD when it comes to formulating a broader tech strategy?

Michèle Flournoy: I think first of all, you have to really focus on problem identification. Where do we need capability that we currently lack? And that means a very clear-eyed assessment of all of the investment that China has made in asymmetric capabilities that are designed to undermine our strengths and exploit our weaknesses, to come after us in cyber, in space, to create a much more contested and lethal environment inside the first and second island chains and so forth, but to really analyze the problem, if you will. And then to decide what are the U.S. responses going to be, and those cannot be symmetric—they have to be asymmetric in turn.

Michèle Flournoy: The first challenge is a conceptual, operational concepts development challenge. But once we identify some of those approaches, we need to then identify where are the key technological gaps, the key capability gaps where we need to double down and invest. Then when we identify those areas, we need to be willing to make some big bets, whether it's AI-enabled decision making, whether it's joint all-domain command and control, that's resilient network of networks, whether it's the ability to team lots of unmanned systems with human directed systems. However we want to define it, those big bets are going to be key. And then we need to go after that with our acquisitions system.

Michèle Flournoy: Here's where we get to your point Martijn, and that is that we've gotten pretty good at tech scouting—going out and scouring the landscape and finding innovative technologies and prototyping them—but we have not done a great job of getting them from prototype into production at scale. That's become kind of a valley of death where many successful demonstrations have gone to die. So that speaks to actually changing some of the approaches, the incentives, and the training of at least a portion of our acquisition cadre to be able to deal with emerging technologies, agile development—take a different approach than the traditional acquisition approach in order to rapidly scale those capabilities in the force.

Martijn Rasser: Yeah, so that's an important point, because there's always this tension between wanting to invest in innovative and disruptive capabilities, but then there's also the safety and the comfort of paying for things that are proven and that you know will work. Do you see the Department as being well-positioned to be able to make those kinds of trade-offs and push the envelope on new technologies that some people may not want to see, just because it is disruptive, and it will affect the role of certain individuals within the broader organization?

Michèle Flournoy: I don't think that the current approach will get us to where we need to go, and that you do need to make some changes. You all will be hearing from Secretary Geurts on the panel - he's actually tried to pioneer some of the necessary changes in the Navy, and others have done it in the other services, but we're not where we need to be. We're not moving with the urgency and scale that we need to, because the truth is, we're still going to buy a lot of big legacy or programmed platforms, and we do have to focus on the traditional calculus of how do we buy down risk to schedule, risk in terms of cost overruns.

Michèle Flournoy: That traditional acquisition approach makes sense for those systems, but if you actually look at what is going to make the difference as to whether we can deter in the future effectively, it will be the capabilities we put on those platforms. We know from wargame after wargame after wargame that the programmed force, if untouched and just executed as planned, will not be enough to give us confidence and deterrence vis-a-vis China within the decade, right? We know this is a recipe for failure, not success. The question is, how do you integrate these new technologies, whether it's AI-enabled systems, autonomous systems teamed with manned systems, resilient networks, directed energy defenses, next-generation electronic warfare, cyber, the full range. How do we make some trade-offs in terms of the size of our platform buys, to reinvest some of that money in accelerating the development and integration of those key capabilities that will be essential to keeping the future carrier battle groups and the future fighter squadrons and the future army units actually survivable and relevant and combat effective in a much more contested and lethal environment in the future? That kind of portfolio management is not a well-developed muscle in the Department.

Michèle Flournoy: It's certainly not a well-developed muscle on the Hill, but we have to go down that road of getting better at that. And then training and incenting a sub-cadre of the acquisition core to kind of be the "Green Berets" of technology and cutting-edge capability acquisition, because they have to have a higher level of risk tolerance, they have to know how the agile process works. It's a very different set of behaviors that you're asking from people and to be fair, we've got to train them, and we've got to reward them for exhibiting those behaviors.

Martijn Rasser: "Green Beret" of acquisition, that's a great phrase. I like that a lot. We're starting to get some audience questions, and this one pertains to working with allies and partners. I wanted to touch on multilateral approaches to tech policy, so I'll start with this question from Nicolas. He would like to know, "How does a U.S. national technology strategy involve allies, and how is that role for allies impacted by "Buy American" efforts and the Executive Order of 24 February on Securing America's Supply Chains?"

Michèle Flournoy: Yeah, I think allies will be key here. And I think what we'll need to do is, when we identify some of our big bet technology areas, to really survey the landscape with our allies to say - okay, who else is really doing cutting-edge work on autonomy, for example, or who else is doing cutting-edge work on advanced computing and compute at the edge? Or whatever the area is. And then explore whether there are ways that we can pursue joint ventures, joint development projects, or some de facto division of labor between us, that gets to the goal faster and creates a shared capability. Now, there are challenges to this. I mean there is the "Buy American" sentiment in Congress and sometimes in the Executive Branch. There are certainly going to be questions about technology sharing, and depending on the ally or partner - our closest allies, we'll be able to share a lot, some of our other partners where we don't have the same degree of intelligence sharing, for example, or experience working on technology together, we may have to crawl, walk, run. But I do think this is an area where we're going to be stronger working alongside other like-minded nations than trying to do it all by ourselves.

Martijn Rasser: Yeah, I agree with that and in the report "Taking the Helm," one key pillar of the overall strategy was partnering with allies. I see that as being critical, and it's encouraging to see just in the past few days the announcement, for example, of the Quad setting up a critical and emerging technology working group. I think those types of efforts would serve as a very good springboard for broader minilateral, multilateral collaboration. It's very heartening to see the United States and the other Quad partners moving in that direction. I think that definitely holds a lot of promise. Let me pivot to another audience question. This one is from Angela and she would like to know, "In what areas do you think the civilian and defense communities can collaborate to scale technologies which can advance common mission support activities?"

Michèle Flournoy: I do think that one of the things that the Department of Defense could do to really attract more interest and research and development from industry, and particularly from venture-backed industry in Silicon Valley, in Austin, and Route 128, is to be much clearer in signaling what are the big bets, what are the areas where the Department is committing to spend multiple billions over multiple years, and some indication of how they're going to structure the competition to get to the capabilities they're trying to get to. I actually think we have moved beyond the immediate post-Snowden period where you had a lot of hesitancy in Silicon Valley to work with national security.

Michèle Flournoy: I don't think there's any shortage of tech companies and tech talent that actually wants to support U.S. national security. The problem is that we still make it really, really hard for them to do that. I think it's incumbent on the Department to remove obstacles. One of the things they can do is to signal to the investor community, there's real money here. You should let this AI company actually develop a defense vertical that's trying to help the Defense Department because over the next five years, there's a market here. You can compete for market share that will be meaningful, as opposed to leaving that uncertain.

Michèle Flournoy: And so the investors say - hey, we can't predict DoD; this is just too hard, so we just want you to focus at the commercial and forget about defense - which means we are giving up one of our greatest sources of advantage, which is that we have the best innovation hubs in the world. We've cracked the code on this. Now we have to crack the code on making sure we can attract that talent and that innovation into the Department. Then when they come, knock on the door, we actually throw out the welcome mat, rather than giving them 12 obstacles to have to get through to get into the living room.

Martijn Rasser: Absolutely, absolutely. Let me pivot to another question from our audience. This is from Naomi, and this is a fairly tailored question. Naomi would like to know, "Since China has beat us in the market as a low-cost solar energy parts producer, what should be the U.S.'s priority regarding alternative energy technology moving forward?" I think this question more broadly gets at supply chains, right? We're dependent on certain critical minerals and other key inputs for quite a few of our very important supply chains, so maybe we could broaden the question for you to address how you're thinking about these issues, and what your recommendation would be, not just for the Department of Defense, but more broadly, how the United States government should think about supply chain vulnerabilities and restructuring.

Michèle Flournoy: Yeah, I mean I think the first task is we need some analytic work done. I hope it will be led by someone like Eric Lander, if he's confirmed in his job at OSTP, but that would really determine where do we want to have a decisive advantage, what kinds of things do we want to protect, where are we happy to share—and that's a global good, to share. I actually think green tech is a really interesting policy choice, whether it's solar or wind or whatever flavor, particularly if it's related to taking CO2 out of the atmosphere, or reducing the CO2 associated with traditional sources, like coal and natural gas and so forth.

Michèle Flournoy: The competitiveness argument would say - protect that as a U.S. technological edge, make us the green technology leader in the world, we sell to the world, it's an advantage for us, it feeds our economy and our jobs and so forth. The approach that prioritizes climate change addressal would say - no, no, no, if we have a brilliant technology, we got to share it with China and India and the other major carbon producers because otherwise, we're not going to get there from here; we're not going to be able to move quickly enough to avert climate change. I think there's some really interesting policy judgments that will have to be made about what we try to protect for U.S. economic advantage, and what we share for global good.

Michèle Flournoy: The easier cases are in the national security domain, where I think the Administration's rightly talked about building higher walls around smaller gardens - really define very specifically what we need to protect for our edge and then protect it better - but leave the rest open, so that our businesses and our economy can benefit from our role as an innovator in the global economy.

Martijn Rasser: Yeah, absolutely. That balance between protecting our technological advantage and promoting our innovative capacity, that's going to be a very tricky balancing act going forward. I think that's a nice pivot to our next question. This one is from John. He would like to know what your assessment is of the National Security Commission on AI, which was chaired by Eric Schmidt and co-chaired by former Deputy Secretary of Defense Bob Work. The Commission recommends that the U.S. should invest $40 billion in AI R&D to keep pace with China, which goes into the broader rubric of what do we need to do to essentially outrun China, run faster. I'd like to tack on a question from another viewer, Frank, why are we not moving with more urgency? Where, what, and who are the choke points?

Michèle Flournoy: Right. I personally think that the National Security Commission on AI is probably the most important commission report since the 9/11 commission. I think they nailed it, in terms of analyzing the importance of the United States stepping up to compete in AI, both for all of the commercial economic applications and what that means for our competitiveness economically around the world, but also because of the potential military applications. And frankly, the need to have the U.S. and its allies leading the way in setting standards with how we're going to make sure there are ethical principles applied in this area, that there are international standards applied, that there are appropriate regulatory systems, and so forth.

Michèle Flournoy: So I think it's really, really important. But I think a lot of what's in the report is actually a recipe not only for maintaining an edge on AI, but for putting us in a very competitive spot with a whole host of emerging technologies. If you haven't read it, I'd recommend it. It's good bedtime reading because you can always use it to fall asleep, and then pick up where you were the next day, but it is, no seriously though, really, really, really important recommendations.

Michèle Flournoy: In terms of the obstacles, I think there are several things. One is, I don't think there's a broadly recognized, you know, burning platform. I think there are people inside the Pentagon, for example, that understand this issue—that our advantage is atrophying—and if we don't do something bold and can sustain, we will lose our edge and that will be very dire in terms of its impacts. There are people in the tech world who understand that China is catching up on AI and if we don't do something different, they're going to surpass us and that will have all kinds of implications. But these are pockets of experts and people who are read into the details. We have not had the leadership in the past several years that really made a case to the American people that we have to reinvest in the drivers of our own economic and technological competitiveness, and it's the things that you and Richard mentioned.

Michèle Flournoy: It's science and technology funding, research and development, 21st-century infrastructure, including digital infrastructure and broadband, smart immigration policy that attracts the best and brightest from around the world and gets them to stay. I mean, if you look at the founders in Silicon Valley, half are either immigrants or first-generation Americans. We need that talent coming in, and then we got to convince them to stay. I mean, there's just a whole host of things that we need to do here, but we have to create a sense of urgency, have a leadership with a vision, and then a real roadmap and plan that we seek to execute. I go back to this question of, if you want to change behavior, you have to change incentives.

Michèle Flournoy: And I don't mean just financial, but you have to reward different behaviors. If you want the acquisition core to behave differently, you got to train them differently, and then you got to promote them, reward them, recognize them differently, if you want to get a different set of behaviors. It's a change management problem, and that is very challenging in the federal government. Not impossible, we can point to examples historically where it's been done before, but it'll take a very strong leadership focus and consistent action, which is not something we're well known for.

Martijn Rasser: On the vision and incentives front, Tim had a question asking whether you anticipate President Biden using his bully pulpit to rally the nation around this challenge.





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Michèle Flournoy: I actually do. I actually do. And I think you're going to start to hear it as these policy reviews are concluded, but also as he has to go up to the Hill to present and make the case for an infrastructure bill, for example. Why? There's got to be a strategic case for that that ties back to what we're talking about here. I think you're going to start to hear... I mean job number one was COVID and relief, and getting people the basic relief they needed. But I think in the months ahead, you're going to really hear the President talk about the investment and "Build Back Better" agenda, which includes a lot of these elements.

Martijn Rasser: Michèle, an elephant in the room when we talk about technology strategy in this regard, is that we're really talking in a lot of cases about industrial policy, and that's something that's...

Michèle Flournoy: Shhhh...

Martijn Rasser: Yeah, I know it's been a pejorative term in Washington for decades, but at the same time, we're seeing a growing realization amongst Republicans, Democrats alike, that the laissez-faire approach just isn't working well when it comes to competing with China. For example, we already talked about the NSCAI report. The Cyberspace Solarium Commission had numerous recommendations that are, in effect, industrial policy. How do you view the proper balance between free market principles and government intervention. And particularly, what are the implications for DoD and the defense industrial base as we discuss these issues?

Michèle Flournoy: I mean you don't want the government in the position of picking winners and losers among companies across the board, but you do want—where there's a strategic import, which is what we're talking about here—you do want the government using the levers it has at its disposal to try to draw private sector attention, focus, energy, investment, to the places that are most consequential for the American people. I think the bully pulpit—that vision, that leadership, that clearly making the case to the American people in the Congress—is important. Identifying some critical areas that are not just about - this is nice to have - but this is really critical to our well-being as a nation, to our security as a nation.

Michèle Flournoy: We have got to keep an edge or at least stay competitive in these 10 areas, or whatever it is. And then to use policies—whether it's tax incentives, tax policy; whether it's federal R&D in key areas; whether it's authorities that allow the Department of Defense to be more of a partner in agile development with some of these cutting-edge commercial technology companies; whether it is incentives for tech talent to come do more time, spend more time in the government and raising the tech acumen of the customer, if you will. There are all kinds of levers that the government has at its disposal, and we should be pulling those levers to try to attract private sector investment to the places that matter most.

Martijn Rasser: No, that's perfect. The whole question of incentives and levers was actually directly answering a question that John had teed up, so you nailed it on that one. We have another question from Twitter. This one is from Jason. Jason would like to know, "How should a U.S. national data strategy fit within or alongside a national technology strategy, particularly as a means to better define threats and coordinate policy responses across the interagency?"

Michèle Flournoy: I do agree with you, Jason, that we need one. I'm probably not the right person to tell you exactly what it should look like, but I do think we need a data strategy, especially data is going to be... the access to data, the management of data, the training models that we use - I mean, all of this is going to be so essential to how well we compete in the world of AI and some other fields as well, public health for example, biotech. But it's beyond my area of expertise to try to tell you what exactly that looks like, but I absolutely agree with your proposition that alongside the technology strategy, we have to have some sense of how we're approaching questions of data, and particularly the use of private data or personal data, or even anonymized data of Americans. That's going to be a key factor that comes up again and again.

Martijn Rasser: Great. Thank you Michèle. We have time for I think about one more question. I'll pose that to you, and then if you have any concluding thoughts before we transition to the panel. I think that the last thing I'd want to touch on is strategy execution. Even the most brilliant strategy is going to fall short if it's not implemented well. Obviously, you want the right people in place to execute, but they're going to have to navigate existing institutional and bureaucratic processes. Based on your years of service in government, how would you rate the U.S. government's ability to actually execute a national tech strategy, as it stands today? What are some areas that work well? Are there agencies or departments that stand out, and where should we focus in the near-term on making adjustments?

Michèle Flournoy: I think we've had pockets of success, but I think our system of divided government has authorities and monies very distributed for execution. I think it is going to take a strong White House role to coordinate an interagency process that looks something like the National Security Council process, which I know Loren can speak to when she comes on the panel, but really covering all of the relevant science and technology elements of the U.S. government as well - to really develop a strategy, and then to have clear objectives, clear division of labor, clear accountabilities for different parts of the government delivering, making sure those folks actually have the resources and the tools they need to do that.

Michèle Flournoy: Then some ongoing monitoring of how are we actually doing, and some ability to catch something that's going off the rails or is failing, and making course corrections along the way. One of the big challenges we have is our personnel system—whether it's on the military side or the political appointee side—that when you have people turning over every two to three years... really, really hard to get that leadership continuity and that singularity of focus. I mean it's the reason why when the Navy decided to develop the Nuclear Navy, they kept Admiral Rickover in place for years and years and years and years.

Michèle Flournoy: If you go out to industry and a CEO is signing up their company for a major change management exercise, usually the board asks them, "Will you commit the next decade? Will you commit the next 10 years?" This doesn't happen overnight. That's one of the biggest challenges we're going to face, both in the executive branch, but also on the Hill, is the constant changeover of people. Really have to double down on continuing to gain buy-in for the effort, to continue to get people on board and committed to it going forward, and very much bipartisan across administrations. It's hard for us, but I think again, you can find some historical examples that should give us hope and we should study those very carefully.

Martijn Rasser: Well excellent, that's a great note to end on. Michèle Flournoy, thank you so much for joining us. It's always a pleasure to hear your insight and really appreciate you being here today.





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Michèle Flournoy: Congratulations on the report.

Martijn Rasser: Thank you so much. Thank you. Let's now continue the discussion with our panel. I'm very pleased to introduce our moderator, Megan Lamberth. Megan is a Research Associate at CNAS and co-author of the report "Taking the Helm." She's also the author of numerous publications on artificial intelligence, misinformation, and other tech policy topics. They're all very insightful, and I encourage you to check them out. Megan, the floor is yours.

## III. Panel Discussion

Megan Lamberth: Thanks so much Martijn, and thank you Michèle for that really great discussion and teeing up a lot of ideas for our panel this afternoon. Good afternoon, everyone. My name is Megan Lamberth. I'm a Research Associate on the Technology and National Security team here at Center for a New American Security. We're here today to talk about crafting a U.S. national technology strategy, which can, of course, encompass a lot of different things. For our panel discussion today, we're going to be focusing on four things that the United States can do: promote its technology competitiveness, protect its critical advantages, partner with allies and like-minded countries, and plan for future technological change.

Megan Lamberth: I'm honored to welcome our esteemed panelists today, and since we have limited time, I'll briefly introduce them, but I would encourage our audience to go and look up their impressive bios online. Starting with Secretary James "Hondo" Geurts. Welcome Mr. Secretary. Secretary Geurts is Performing the Duties of Under Secretary of the Navy. He has a really unique background, and I'm excited to dive into it with him. He's spent part of his career as an acquisitions officer in the U.S. Air Force and spent time at SOCOM. He has an extensive background on issues related to R&D and acquisitions in particular. It's great to have you.

Megan Lamberth: Director Sue Gordon is the former Principal Deputy Director of National Intelligence. Director Gordon also served as the Deputy Director of the National Geospatial-Intelligence Agency, and currently serves as a Senior Advisor for Pallas Advisors. Thanks so much for joining us, Sue. Ms. Loren Schulman is the Vice President of Research and Evaluation at the Partnership for Public Service. Prior to that, Ms. Schulman was the Deputy Director of Studies at CNAS and is still an Adjunct Senior Fellow with us, and spent 10 years at the Defense Department and the National Security Council. Director Gordon, Secretary Geurts, Ms. Schulman - welcome, and thanks so much for being here and spending your time with us for a while.

Sue Gordon: Great to be here.

Megan Lamberth: Before I launch into my first question for you, Director Gordon, I want to encourage our audience again to keep submitting questions and keep engaging with us using the hashtag #CNAS2021, either on Twitter or you can submit questions right on our website at cnas.org/live. We really appreciate everyone taking the time, and we'd love to continue hearing from you. With that, I'd like to focus the first few minutes of our conversation on both the promotion of U.S. technology competitiveness and the protection of it.

Megan Lamberth: Director Gordon, I would like to start with you on... The Biden administration released their interim National Security Strategic Guidance a few weeks ago, which is meant to help guide different government agencies on their priorities, and the Guidance talks extensively about the importance of harnessing the power of emerging technologies. With that in mind and with your long history in government, what do you think are the most essential elements of long-term American technological competitiveness?

Sue Gordon: Well, one, delighted to be here, great question. Let's see, what do I think? I think 2021 and beyond is a world where all the opportunities and all the challenges disproportionately go to and through information. I think understanding how we have advantage with information is the way to think about the strategy that we need to advance. Those are the technologies that allow us to use information, and so that is compute and AI, algorithm assurance, microprocessors, just a whole set of the technologies that allow us to use information at a rate that exceeds the ability of our adversaries and competitors to use information, and then the second is, what are those we need to protect information.

Sue Gordon: What's interesting about the protect technologies for information is - free and open societies disproportionately want to have assurance of information. They want to be able to trust their systems. They want their data to have integrity and the algorithms to be provable. So those two areas are ones where I think our disproportionate advantage lies and where our investment on our strategies have to reside. But you can't just say - here's the level I need in the technology - in order to really sing, what we have to imagine is what we want to be able to do with information, and what we want to be able to assure. Set that mark, and then achieve that with the development.

Sue Gordon: My favorite example is always the race to the moon where JFK said, "By the end of the century, we're going to be able to put a man on the moon and return him safely." That was audacious, we had no idea how to do it, but once set, we knew what we had to develop. My analogy is when we went to the moon, we got Tang and Velcro. We did not get to the moon by developing Tang and Velcro. Set the goal, knowing the areas, information's the game, that's where our advantage is.

Megan Lamberth: Director Gordon, thank you for that. I want to pull on the thread because I too love that the Sputnik... the Sputnik moment as a historical analogy, and President Kennedy's "We're going to land a man on the moon by the end of the decade." We have an audience question from Matt here who said, "Tech innovation demands high levels of risk. Do you think Congress will support this or will the need for accountability for every dollar hinder progress?" I was thinking through the moon landing or the goal to land a person on the moon was a lot of risk involved. Interested in your thoughts if there's an appetite for today's Congress for that level of risk.

Sue Gordon: Well, one Matt, that is a great question I think it's the question of the day. The reason why I think we need Congress is because we are so high bound that some of our legislative processes are designed to constrain, rather than to allow. And you see this over time. We try and protect bad things from happening, rather than allowing good things to happen. I think we need Congress to be involved in this, but regulation cannot be the only tool they apply. I think what we need them to apply are incentives that encourage people to come to the distances we need to achieve, rather than prohibitions to make sure that nothing bad happens.

Sue Gordon: I know that's scary because so much of our system is built around - we can't have anything bad happen - but instead, I think what we need to turn to equally at least and perhaps more, is what are the things that will incentivize the good outcome and at least balance the regulation with those.

Megan Lamberth: Thank you for that Sue. Well, you laid out a number of different technologies in your first answer - AI, and compute, and microelectronics. I'd like to turn to you next Secretary Geurts to focus for a minute on the U.S. Navy specifically. What emerging technologies do you feel will have the biggest impact on the Navy moving forward, and could you speak to the Navy's current approach to developing and acquiring and incorporating emerging technologies, like AI or autonomy or microelectronics?

James "Hondo" Geurts: Yeah, I mean a great question. It's always good to hear Sue and glad she went ahead of me, so she lays a lot of good groundwork there for us. I think an interesting—both opportunity and challenge—for the Navy is we're operating everywhere from seabed to space. Identifying one technology, or one or two, is always a little bit dangerous because there's lots of technologies we need. But I would certainly say, a challenge for a Navy that's trying to get much more dynamic, distributed, has to operate over long distances, and many times where you don't have infrastructure, is communications—both being able to communicate, and then having a shared communications—sensing, whether that's on the water, in the air, or underwater.

James "Hondo" Geurts: And then, it's been an age-old problem for the Navy, but precise, position, and timing are really, really important. If I look at those as, I would say, mission outcomes or mission necessities, then the technology elements that go along with those of really leveraging data, really figuring out the right way to do manned and unmanned teaming, getting quantum in there for both communications and for our precision timing. All those become important technology feeders that feed into it, and one of the things we're also really working hard on with some success is disaggregating the technology development from each individual platform, so that as we solve a problem, we can rapidly scale it and not have to keep resolving the same problem. If you say autonomy, how do we disaggregate the autonomy algorithms on all the different unmanned ships we may want to have, so that we solve that once and not have to solve it every time over and over for each individual ship?

James "Hondo" Geurts: I think the strategy elements then become creating both business, the technical, and the operational architecture, that allows us to rapidly absorb technology from wherever it comes—whether it's from a startup company, whether it's from a government agency, whether it's from two folks in their garage, or from one of our allied partners—so that as technology opportunities present themselves, we can incorporate them with scale and at speed, which I think has been one of our, I would say, structural challenges within the Department of Defense and why a strategy of how to go after that is really important.

Megan Lamberth: Thank you, Secretary Geurts. That was a great overview of how the U.S. Navy is thinking through these issues. Ms. Schulman, I'd love to turn to you next. You've, of course, written extensively about the importance of personnel and human capital to national security. It would be, of course, a key component for any national technology strategy. I'd love to hear your thoughts on some of the Biden administration's actions so far, particularly some of its decisions around technology leadership within the administration, and how you think the administration is thinking, or should be thinking, about how to best utilize that talent.

Loren Schulman: Great question, Megan, as you've heard me say many times, process and people are my valentine. So let me talk about what's great in the Biden administration's first and initial moves in the technology strategy space. First, the early naming of the Chief Science Advisor, as well as the letter that then president-elect Biden sent to Eric Lander outlining many different categories of science and technology research and exploration he wanted to pursue, to include how the United States can be a world leader in tech that will be critical to our economic prosperity and national security, how we can guarantee that the fruits of S&T are fully shared across America and all Americans, and how we can ensure the long-term health of science and tech in our nation.

Loren Schulman: On top of that, we've seen an early appointment of a Deputy National Security Advisor for Cybersecurity and Emerging Technology who just recently—that's Anne Neuberger—just recently, Jason Matheny was appointed as a coordinator both reporting up to the National Security Council, as well as to the Office of Science and Technology Policy, which is an incredible innovation bringing together the policy coordination functions of the National Security Council as well as the scientific domain expertise and analytic expertise of OSTP. Bringing those two together, it's like a Transformer or Voltron all coming together. As well as appointing a Senior Director, early on, for the Emerging Technology Directorate, Tarun Chhabra, who many of us know.

Loren Schulman: All of these early moves signaled to me that the Biden administration wanted to get people in place early to begin asking questions and directing policy initiatives in areas that are either completely new or really new to the national security process, as well as the U.S. government writ large. We've also seen some early policy explorations that have hinted at some of the priorities I would expect to see in the Biden administration. First in the... let's see—I guess it was the second national security policy memo that was issued that had a whole laundry list of priorities. One of the big ones was creating a foreign policy that works for the middle class, and within that, it demanded or required the integration of different elements of domestic and economic policy into the national security process, whether the Domestic Policy Council, Small Business Administration, Department of Commerce, and other elements that clearly have a role to play in this technology strategy, but are usually, at best, invited at the last second to an NSC meeting, as opposed to being an integral part of the policy process.

Loren Schulman: As well as in the interim guidance on national security policy, there's a flag that trends and technology—the revolution of technology—poses both peril and promise—a lot of P words—and commits to doubling down on S&T investments, protecting those investments with vigilance and foresight, investing in a STEM workforce, digital infrastructure, and ensuring emerging technology standards that boost your security and economic competitiveness. Then finally, last one I'll mention, is an Executive Order on supply chains that directs several agencies to investigate the security of supply chains that are really important to American national security. So all of those are great, exactly what I would want to see.

Loren Schulman: The area where I worry, is do we have the capacity, both in the interagency structure to develop and implement policy, but also in our analytic expertise to actually take these great words and bring them to life? Do we have the people who can attend the meetings, who can do the analysis, have the relationships with industry, and understand the incentives that the private sector work under, and make sure that those incredible policy starts go from good starts, all the way to an executed technology strategy? My guess is we don't quite yet, but these are great moves in that direction.





Center for a New American Security
1152 15th Street NW, Suite 950, Washington, DC 20005
T: 202.457.9400 | F: 202.457.9401 | CNAS.org | @CNASdc

Megan Lamberth: Loren, thanks so much for that. I wanted to pull a thread that you hit at the end on these are all very, very good moves, but there's obviously going to be some institutional or bureaucratic hurdles that the administration is going to have to jump over both in the short and long-term. You touched on them at the end, but I was wondering if you could expand on two or three of some of the biggest hurdles that either you experienced yourself when you were in a prior administration or ones that you foresee for the Biden administration?

Loren Schulman: Sure. I'll mention some of the most obvious ones to me. First, as Michèle was alluding to, we were talking about industrial policy. There are certain things that the national security policy community is taught, "don't ever touch that," or "don't ever get into that," and same, vice versa for the economic and domestic policy. Crossing the streams of foreign policy with domestic policy is always seen as we must keep these separate. And industrial policy is a piece of that, helping think through what investments and policies and incentives are necessary for U.S. national security and U.S. national technology strategy in order to not only support our future innovation, but also to support how we are approaching our competition with China and with other great powers.

Loren Schulman: Some of that is just a cultural shift that's going to have to happen, but some of it is a much more bureaucratic shift that will have to happen, in terms of having regional meetings that incorporate all of these players, having conversations around technology strategy that involve not only the State Department, but the Small Business Administration. Those are agencies that are not used to being the same room together and are probably going to have to develop common vocabulary. The second piece, that Michèle also mentioned, is the human capital element.

Loren Schulman: While I think that there's one body of work that needs to be done to improve human capital and hiring for these sorts of needs inside government, the other piece of this is - so much of the analytic expertise and information that is necessary to execute a technology strategy is resident outside government, in the private sector. Government will never be able to replicate it, and probably should not even try. So creating the relationships that necessitate the sharing and transparency, and understanding of intentions and goals, is going to be something that has to be executed over this administration and many to follow. There's a lot of relationships to build, as Michèle talked about, but it's more than just - will we buy this? It's more about - what do you see is the risk in this overall innovation area? What are the things the United States can do to help bolster a manufacturing capacity in the United States?

Loren Schulman: The third one that I will mention, that again Michèle touched on, is the ability to go back and evaluate - is this actually working? Because if Director Gordon or Secretary Geurts gave a list today of top five technology priorities that we needed to invest in in the United States, it would probably be true for the next six months or so, but then suddenly may drastically shift next year. We need the ability to evaluate and rapidly, if when possible, shift where those investments go, and it's something that is not very comfortable in the national security world.

Loren Schulman: We don't do monitoring and evaluation terribly well. In this kind of strategy, it would need to be done much more consistently and effectively and bring to bear some horizon scanning and net assessment capabilities that are not usually resident in the technology strategy space.

Megan Lamberth: Thanks for that, Ms. Schulman. Yeah, that's a great point at the end, and leads me to my next question for you Secretary Geurts. You mentioned earlier in a recent interview with National Defense Magazine that you talked about the military and the U.S. Navy in particular, their ability to adapt, the need for a strong foundation to pivot quickly, the importance of working at speed and at scale. I was wondering if you could talk to both the Navy's approach to technology acquisitions, but also as Ms. Schulman said, the ability to pivot when needed when priorities change, or when capabilities change, or when responding to the sometimes unpredictable nature of technological change?

James "Hondo" Geurts: Yeah. Thanks for the question, and the challenge of any strategy—particularly a long-lasting strategy—as previously mentioned, you know it's going to be wrong, you just don't want it to be really wrong and you want to be able to adapt to it. I think our approach really is maybe three-fold. The first is - are we visioning the futures, and I'll put that in a parentheses "s." You've got to have some way to vision the possible futures and again, you may not have it right, but you've got to always be thinking about that and then having that feedback loop of testing your hypothesis and continually updating that. The second, I would say, is build scalable platforms.

James "Hondo" Geurts: When I talk about platforms here—not a ship or an airplane—but building platforms, approaches that allow you to adapt more quickly, without having to completely reinvent. If I think about our how we're approaching, say, a nuclear submarine, I treat what's wet different than what's dry. I don't change the outside of a submarine very often, right? We do that very deliberately. We do that with a lot of analysis because our risk tolerance is very low. Right now, we're changing the compute about every three years and the software about every 18 months. If you can differentiate the parts of the system and then get them on the right kind of flexibility - so if I've got a scalable platform that I can update really quickly, then that allows you to scale quickly.

James "Hondo" Geurts: Then I'd say the third element is boldly and relentlessly experiment—put stuff in the fleet. We tend to be oversubscribed to discovery and undersubscribed to deployment. So we've discovered lots of stuff, we just never get it in the hands—in our case of Sailors and Marines—because guess what, when you put it in their hands, they will probably come up with things you didn't think of. I think if you can go from that—constantly visioning the future, build scalable platforms that you can adapt as the future unfolds, and then constantly get it out there in the fleet, get it in the hands of the end user—that strategy, I think, allows you to operationalize and get a pipeline that we can actually then feed. If you do that right, it doesn't matter where the idea comes from. The idea can come from anywhere. If you can get that idea into the pipeline, then you can get it into the hands of the end user. That's the way we're trying to connect the back-end acquisition side to the front-end of the technology discovery and maturation side.

Megan Lamberth: Thank you for that Secretary Geurts. I want to continue on this idea of the U.S. government's ability to plan ahead. I would love to ask you, Director Gordon, in the wake of the SolarWinds hack, as we're still trying to unpack the extent of the cyber intrusion and its possible ramifications, can you talk about what are mechanisms in place that the U.S. government can use to prevent future cyber surprises, or are there... I guess, are there mechanisms in place, and what kinds of measures do you think need to be in place to help mitigate future risk?

Sue Gordon: Let's see. Let's see if I can break down the three areas. The first thing is, it's a digital world, and so every aspect of nation state and non-nation state actor is going to increasingly be affected digitally. It's pretty low cost. You can go at almost any range, and there are few barriers to achieving your effect. If we think that we are somehow at the worst, least threatened state right now, we are not. The last two hacks, the one by Russia and China, should say that nation states are as powerful as they seem, and they're getting better and better and relentlessly pursuing this attack surface. That's one - you're just going to have to acknowledge that.

Sue Gordon: Two, the second thing is the threat surface and the decision maker about this aspect of national security are increasingly outside the government. We simply have got to achieve public-private partnership on this front, and my earlier point of incentives really matters here, because the private sector has so much opportunity in what they see and what they know early, that if we could figure out how to help them share that, that would help all of us. The third point is the U.S. government has got to help more. It is absolutely unfair for a nation state to be attacking a company, and we blame the company for having been attacked. It's just an imbalance, and so part of what we have to do here, is we have to get the government more involved in this and reduce some of the boundaries to doing it.

Sue Gordon: Then my last one is, and I would be irresponsible if I didn't say it, there is so much about cybersecurity that is equivalent to locking the front door of your house - making sure that you have good cyber hygiene, that you patch when you can patch, that you have good network awareness, that you share the information you have, all those things can be done. And none of the things I just mentioned happen if we don't get more talent into the mix and more leadership attention on the fact that this is not a technical issue. This is a leadership issue, and we have got to get more interest in what risk is being posed.

Megan Lamberth: Thank you for that, Director Gordon. Before we move from this topic, Secretary Geurts, I wanted to return to you for a second. We have a question from our audience from Steve, who asks about current investment processes within the DoD. And he asks, "How do we ensure a more holistic portfolio that doesn't sacrifice long-term readiness for short-term spending on outdated systems?"

James "Hondo" Geurts: Yeah, I mean I think we have failed as a nation if we have to choose between being ready today and being ready 10 years from now. If we've set ourselves up that that is our choice and we can only do one of those, then I think we've failed as a nation. Because quite frankly, we've got to be both ready tonight, and ready 10 years from now. I think a key piece of that is figuring out where to drive out fundamental costs that aren't adding value. A key piece of that is getting the relationships, the mutual respect, about everybody that can help solve problems, so that we can leverage the strength of our diversity—whether it's who you are or what kind of company you are, or whether you wear a uniform or not—where we can bring the best of everybody together and leverage that. Then the third is, looking for areas where we are probably over-centralized in our planning, and that we can move to a much more opportunity-based approach than a risk-managed base. Bureaucracies tend to be over infatuated with managing downside risk and not terribly good at leveraging upside opportunity. I think the way you leverage upside opportunity is try and move away from very transactional processes - I have a requirement, I'll hand you a spec, you'll hand me an answer back – to, I have this problem, let's all get together and who can bring something to the table – or, I have this interesting technology, how might you be able to use that in a new way?

James "Hondo" Geurts: Just take ship maintenance—we spend a lot of money to maintain ships. We have not yet brought in all the new technologies. I know they're state of today, they're not state of 20 years from now. Figuring out the ways to get out this fundamental cost, to free up resources so that we can go after the readiness of tomorrow is something we all have to be focused on. Because again, if we have to choose between being ready tonight or ready 10 years from now, that's not a choice we need to be making for the people, we need to be able to do both.

Megan Lamberth: Thank you Secretary Geurts. That's well put. We've received a bunch of questions on the role of allies and partners. With the time we have left, I'd love to move to that, because obviously the United States is gifted with a remarkable set of allies, and partnering with international like-minded countries would be an essential element of any successful national technology strategy. We've heard in recent weeks, as Martijn alluded to earlier, calls for some sort of technology alliance—we've heard like "Democracy 10" or "T-12." Senator Warner called for some form of international coalition last week.

Megan Lamberth: Director Gordon, I'd like to start with you, but certainly would be interested in others' thoughts on this as well, what do you see as the biggest hurdles, both domestically and internationally, to this kind of arrangement?

Sue Gordon: Probably three. One is, our allies and partners would be delighted to know where we think we're going, so they know how to plug in early, rather than once we've set a policy and they're trying to catch up. Huawei is a great example, where it was really hard for our partners to catch up to where we wanted to go once they had already made a bunch of decisions on their own. Taking that lesson, saying a clearer picture of which technologies we think are important, which uses we think are most needed to be protected. The second is, I think we have to go much more with the first principle approach, rather than an implementation approach.

Sue Gordon: That is, what can we all agree to that is important that we achieve or preserve, not necessarily dictating to everybody about how they must pursue it. We see this with data and with privacy. You really run into differences in nation states, so use our value. Then the last is, the national security community is actually a pretty good international alliance that has withstood a lot of ups and downs on policy. There are a lot of good relationships there we can use in order to be the foundation for some of these conversations.

Loren Schulman: Megan, if you don't mind I can add on a bit to that. I'll add a couple other barriers and considerations that we need to go into this great discussion around some sort of technology and democracy alliance. First is on relationship management, just a really fundamental... who in the United States government owns the relationship around these issues with our foreign counterparts. It's pretty easy when you're talking about foreign policy, it's pretty easy when you're talking about defense policy —you know to go to the Defense Department or the State Department—but when you're talking about our economic collaboration, our technology collaboration, and our values associated with democracy and technology, you don't really find those on an org chart necessarily.

Loren Schulman: They're spread necessarily across the U.S. government, and as a result, I think we dilute a lot of our potential, in terms of working with our allies on some of the topics that we're discussing right now. Having a better understanding of who's on first and maybe who's on second is a piece of that. The second is that there's going to be some instances where the United States is going to choose to make decisions that may adversely affect our allies or partners' technology investments or technology focuses, particularly given that some of their economies are structured quite differently than ours. Acknowledging that internally at the outset, and as being as transparent and open as possible about, as Sue says, where we are going and where we're not going, is an important thing to do early.

Loren Schulman: This is not only going to be about how we can benefit everyone. There's going to be points where we are not necessarily picking winners and losers, but having impacts that are not going to make everyone happy. The third thing I would say, is that the one challenge that I think the Biden administration has recognized in some of its early policy, and many other scholars have done so, is that a lot of the work that the United States could be doing around international standards-setting has fallen behind, and China has raced ahead of us in a lot of different technology innovation areas. This is a place where I think that not only does it need to be recognized as a priority, it needs to be recognized as a bureaucratic and staffing priority, so that we're putting the diplomats and negotiators and country team—or sorry, not country teams, negotiation teams—together that can help advance different international standards-setting, both within this body of democracies, but also worldwide.

Megan Lamberth: Thank you for that Ms. Schulman. Well, I want to be mindful of time. I want to give everyone a chance for one or two minutes of closing remarks, so let's start with you, Secretary Geurts.

James "Hondo" Geurts: Yeah, no, thanks for the great dialogue here. I guess I would sum it up of - we've got to move away from transactional kinds of thinking about this - whether it's with allies or partners or with policy - and we've got to link up both the strategic policy development and then how to operationalize it, so that we can get the effects we want with an analytic feedback. I think again, these kinds of forums are really important to talk about the issues, and then we can all bring our skills and capabilities to the forefront. Then finally, I would just say, getting this mutual respect - we all have a place in this.

James "Hondo" Geurts: Whether you're in industry or Silicon Valley or in government, each comes with their own strengths and our own weaknesses and the better we can all align to where we're trying to head and then leverage that diverse ecosystem to get to an outcome, I think we will be better off. I'm cautiously optimistic with the dialogue we're having recently on this and some of the baby steps. The challenge now is for us to do it at scale and with speed because if we don't, we will lose our advantage, and then regaining that will be exceedingly hard. Thanks.

Megan Lamberth: Thank you, Secretary Geurts, for that and for all your comments this afternoon. Director Gordon.

Sue Gordon: I'll just choose an area we haven't really talked about. One of the things that the government is really good at is long-time horizons, great patience, and deep pockets. I think we really need to look at the investment the government is making in the long-term research foundation that is going to allow a lot of these advances and the long-term investment in education that is going to be equally important for the advances. So let's get the investment going because not everything you need to do today, can you think about today.

Megan Lamberth: Thank you Director Gordon. And Ms. Shulman.

Loren Schulman: I'll mention two points. First, that the United States has a lot of capability to help implement and advance a national technology strategy—it's just doesn't necessarily think of it as such. Between business incentives it has, tax incentives, our R&D investments, human capital and educational incentives, as well as our immigration policy - so many of these things have not acted even close to in concert with one another to think about how we can benefit the national interest, and benefit our overall innovation economy. It's not to say that they should all be subordinated under that singular goal, but there's ways to make better use of the tools that we already have, and make sure that they're used to our best advantage.

Loren Schulman: The second is, related to that, in order to make sure that that happens is going to require a lot of relationship-building and a lot of just common vocabulary setting. We are having this conversation amongst ourselves right now in a way that, I think, we're all generally understanding one another, but if you started talking about technology strategy, industrial policy, STEM, human capital incentives, and much more amongst different audiences, you're going to get different reactions - some of which are very negative, some of which are positive, but possibly going on a very different path than the United States government may wish to go.

Loren Schulman: It's going to require a lot of bureaucratic work that is just about setting the table, understanding incentives, understanding objectives, and creating a very baseline vision of where we want to go in particular technology areas. That takes time, which is not always something that presidential administrations like to invest a lot in. But it's absolutely necessary in order to make progress, and I think an area that the Biden administration seems to be open to pursuing.

Megan Lamberth: Wonderful. Well, my sincere thanks to our speakers, Director Gordon, Ms. Schulman, Secretary Geurts. This was a wonderful conversation, so thank you so much for taking the time, and to our audience, thank you for all the thoughtful questions and I'm sorry we couldn't get to all of them, but we appreciate you tuning in. At this point, I'll turn it back to my colleague, Martijn. Martijn?

Martijn Rasser: Great, Megan. Thank you so much and thank you to the panel, what a rich discussion this was. Of course, I want to thank our speakers, Michèle Flournoy and Richard Fontaine. I also want to give a special shout out to the CNAS Comms team - their behind-the-scenes work helps make these events a real success - so thank you Shai Korman, Jasmine Butler, Chris Estep, Cole Stevens, and Anna Pederson. We have a lot of analysis and policy recommendations on the way, as part of the CNAS National Technology Strategy project, so keep an eye out, and in the meantime, be well and looking forward to seeing you soon.