How the U.S. can Stay Ahead in Tech

Speaker:

Michael Kratsios, Office of Science and Technology Policy, The White House

Interviewer:

Josh Kampel, Techonomy

(Transcription by RA Fisher Ink)

Kampel: So, a few weeks ago, David and I had the opportunity to head on the train down to D.C., really to get a better understanding about how the current administration, we'll say, plans to keep the U.S. the innovation capital of the world. So we were down there a couple weeks ago and it was really great to spend some time with Michael Kratsios, who is the deputy U.S. Chief Technology Officer and the Deputy Assistant to the President at the White House OSTP. So, I want to bring Michael out now and talk a little about how we're going to set the agenda for innovation for the U.S. So, Michael, please join us.

[APPLAUSE]

Kampel: Well, so, for those here who don't know you, talk a little about your path to the White House. You've been there for now about two years. Where did you come from and what prepared you for the role?

Kratsios: Yes, so before making the trip out to Washington, I'd spent almost seven years here in San Francisco, in Silicon Valley. I had worked for most of that time, or that entire time, with Peter Thiel and his various venture entities. That was my start and I think being out here and working on companies like Palantir, like Airbnb, like Spotify, like SpaceX, these were all companies that at some time or another started dealing with regulatory-related issues.

They came across times in their business models where the real problem wasn't anything about the speed that they could innovate, or the types of things that they could produce, or the employees they could hire, but it really became an issue where they were facing problems that were caused or a result of government action or inaction. And those are types of issues that I think about a lot in my current role and am excited to tackle. So, how can we remove those barriers to drive innovation in the U.S.?

Kampel: So, how is that perspective changed? Obviously, sitting here looking at D.C. versus now being in D.C., are you sympathetic for what has happened, again, sitting here feeling like government's not moving fast enough, to now understanding really how complex it is to work together?

Kratsios: Yes. I think it's very complex. I think probably one of the best examples that I like to use as to the complexity of this world is really around the integration of drones into the national

airspace. I think for many folks out here and people who are working on drone companies it should be pretty easy. The technology exists. I mean, Jeff Bezos had his commercial for the Super Bowl years ago showing the delivery of a package, but that still has never happened.

What really opened my eyes as I got more involved in D.C. was that the very real security implications associated with adding these vehicles into our national airspace. The ability or the authorities that entities like the FBI and the Department of Justice had, or DHS had, to interdict these drones or take them out actually did not exist; it did not have legal authority to take these commercial objects down. And in reality, there are pretty dramatic security implications there. So that's one of the things we've tackled, and have been able to grant these new authorities through congressional action earlier this year.

Kampel: And that moved extremely quickly. We talked about like 12 months, or it was a really short time frame compared to traditionally how things have moved.

Kratsios: Yes, so I think while the granting new authorities to law enforcement to take down drones was something that has been worked on with Congress for many years, and it's something that we started tackling on day one and finally got it over the finish line this year through the NDAA or the National Security Reauthorization. But I think that what you're referring to is the work that we've done to provide essentially regulatory sandboxing opportunities for drone operators.

So on one hand you had this security issue you had to deal with, and on the other—and I think [an] interesting way that we approached policy was, especially in this area. There isn't a silver bullet towards integrating national airspace. There isn't one thing the FAA can do and suddenly drones will be able to fly in Manhattan, will be able to fly in Iowa, will be able to fly wherever. We really need to do the testing. We need to get out there and we need to show that in various settings, whether you're up in North Dakota, in Alaska, down in San Diego, in Florida, you can test different opportunities and see and test different things.

Do you want packages delivered at, you know, 3:00 PM on a Wednesday, or [should] they only be delivered between 2:00 and 4:00 AM on Tuesdays, whatever it may be. And what we were able to develop was over 12 months, essentially launch a program and get applicants in, vet them, select them and actually have drones flying in 12 months. So, we're very proud of that.

Kampel: So, when we were down with you in D.C. you told us about the broader sort of plan.

Kratsios: Right.

Kampel: How it's built on a couple core tenets. Talk a little about the plan and what you hope to accomplish in, let's call it, the next 24 months.

Kratsios: Yes. So I think we have three major pillars to the administration's technology agenda. The first is promoting emerging technologies in the U.S. We need to find a way to ensure that America remains the home for the next great technological discoveries. Whether it's

drones, whether it's autonomous vehicles, whether it's artificial intelligence, advanced manufacturing, 5G—there's lots of different technologies you can look at but there's a sort of overarching theme of the way you can tackle these emerging technologies.

One, you need a coordinated and concentrated R&D effort by the federal government. That's what the White House does, a convener for all the agencies that do this incredible R&D. The second is to remove barriers to innovation. So we relentlessly look for ways or places that the government has gotten in the way of innovation and fight very hard to remove them. I think the drone example is good, or new guidance around autonomous vehicles is another great example.

The second pillar of the agenda is—we call it empowering Americans to innovate. This is providing Americans the tools they need to succeed in a 21st century economy. This really falls into two things. Connectivity is one of them, which is critical. As many of you know, 34 million Americans don't have access to high-speed internet. Eighty percent of rural Americans don't have access. And 80 percent of those are in rural America. So, the reality is we can do a lot better to connect these folks.

And these people will have the ability then to start businesses online, be able to access telemedicine online and lots of other things. We're working very hard to push the needle there. And the second part of that is around STEM education, and it's something that you know we may get into this a little bit more, but I think we always try to find areas where the White House and the tech community can actually come together. And we can agree on something and really push forward something positive for the country.

And STEM education is a fantastic example. The President prioritized STEM education through a presidential memorandum last fall. He committed to prioritizing it at Department of Education, committed 200 million dollars towards it. The next day, our top technology companies from Silicon Valley came together and announced $300 million dollars of additional STEM funding that they matched. That's another great example of us coming together.

And a third, and one that the President's been very outspoken about, is defending American technology abroad. You know, we have—there is a reason why we're the home for the greatest technological discoveries. And that's something, because of our great IP system, the great protections we afford entrepreneurs, inventors, scientists. They're highly incentivized to develop here in the U.S. because they know they'll be protected. But we have foreign adversaries who don't respect those rules, who blatantly and flagrantly disrespect our companies and steal our IP and that's something that we cannot stand for and it's something that we vigorously defend.

Kampel: So we played an opening video when we started today, and one of the clips was around specifically Super Micro and China. We've talked a lot about China both with the made-in-China 2025, and sort of them coming out saying we're going to be the global leader in AI by 2030. China is being very vocal about wanting to be the leader in innovation and technology, as well as we're having potentially if you talk about the IP, how do you see our relationship with

China? How do we sort of position against everything that they're talking around about them wanting to be the most innovative country?

Kratsios: Well look, I think when anyone asks me this question, the first thing I often argue is that, look, everyone in the world has seen the amazing benefits associated with our vibrant technological ecosystem here. The benefits to citizens all over the country and all over the world have been provided by our great ecosystem, discoveries we've made. So it should be no surprise that, whether it's the French or the Chinese or anyone else wants to replicate or in some way create an ecosystem that can drive the same great discoveries that we have here in the U.S. So I never hold that against them.

But I think that what I keep going back to and what I keep trying to talk about out on the road is what makes the U.S. so unique, and that is the truly sort of vibrant R&D ecosystem we have here that is one part federal government, one part private sector, and one part academia all working together. We do not create sort of centralized, industrial policy in the U.S. That's not how, and that's not why we have led the world in innovation over the last 150 years.

We've led it because of the creative, innovative free market system that we have in the U.S. What we worry about a lot at the White House is how we as the federal government can contribute most to that system. What can we do to kind of turbocharge our contribution into that ecosystem, whether it's thinking about things like our supercomputer infrastructure. The private sector doesn't have it, academia doesn't have it. But we have the fastest supercomputer in the world at our Oak Ridge National Lab in Tennessee. How can we get entrepreneurs and innovators and academics to use that ecosystem? What data does the government have which we can provide to that ecosystem and allow entrepreneurs to build on top of it? And so on.

Kampel: So you've hosted these events now in D.C. on AI, on quantum. So the representatives from those represent those various ecosystems and trying to figure out how they're working together?

Kratsios: Yes.

Kampel: Are you seeing great, are you seeing resistance, are you seeing cooperation? What are—?

Kratsios: No. I think we see a lot of excitement from the community, especially in areas like quantum and artificial intelligence. We've hosted pretty high-powered events. I think, there what we try to express and we try to really show is that there is a vibrant community of federal folks who work on these issues. Some people don't know or don't think about, but the federal government is huge. The Department of Energy alone spent tens of billions of dollars on science. There are 17 national labs that, you know Secretary Perry calls sort of the crown jewel of the Department of Energy. These are places like Oak Ridge, like Sandia, these are the labs that sort of created the nuclear weapons, that created the whole nuclear weapons and created sort of the whole nuclear industry around the U.S.

But going forward from there they've been the greatest, well some of the greatest technological drivers the U.S. has seen. Outside of that you have pockets like DARPA at DOD that does incredible innovative work. You have IARPA, part of the intelligence community, which does the same thing. You have the National Science Foundation which spends over $7 billion dollars a year on basic research. What our role is to sort of bring all those folks together and be able to kind of give them a North Star to follow and to try to pursue, and really build connections between all those pockets of great innovation across federal government with the private sector and the academics that come to those sessions.

Kampel: We published a story on Friday based on our conversation and talked about obviously the community looks at things like immigration policy and tariffs as sort of at odds with some of these policies that you're talking about. How do you balance some of the policies that are coming out with some of the initiatives that we're talking about?

Kratsios: Yes, I think going back to what I said earlier, I don't think the administration or any administration sees eye-to-eye with any particular industry on every single issue and I think what's really important is for us to think about places where we really do align and think creatively about the ways that we can kind of leverage the alignment for the common good. I think immigration is an interesting one that you bring up. The President has been very clear and very obvious about his commitment to a merit-based immigration system which supports the best and the brightest innovators from across the world coming to the U.S. And, yes, there are other issues that focused on sort of illegal immigration, but those are separate and distinct, and I think it's really important for us to kind of think about that. But in places where we do see eye-to-eye, like STEM and so on, we really need to leverage them.

Kampel: Great. I want to make sure we leave some time for questions.

Brooks: I'm Rodney Brooks. Michael and I know each other. I want to give a little preamble with something that has happened to me recently and the sorts of barriers to innovation and the way government is getting in the way of innovation. And Josh was just talking about these. Six weeks ago, the U.S. had one company that built industrial robots, only one. It now has zero, and that's my company.

Our biggest customer was China. The proximal cause of the failure was two-fold. One, the elective trade war with China where we got hit by a 25 percent tariff, retaliatory, destroyed us. At the same time, CFIUS, the Committee on Foreign Investment in the U.S., which would have provided more investment to us, made every deal fall apart. Not just Chinese deals, but European deals, because they were so afraid of CFIUS, because of the way it's being wielded. That's the first part.

Second part, I talk to entrepreneurs all the time. Entrepreneurs now say to me, as they're starting companies; well we'd better start an office in Canada so we can get visas for people to work for us. At my own company we had incredible visa problems in the last 12 months. These were fantastic people from all over the world, already worked for us, that leave the country to

go visit home, couldn't get back in. So the visa problems are real, and it's not about illegal immigration; it's about the cream of the cream that's being blocked.

Now the second thing that's happening, as I talk to people today, after they've heard from Dr. Kai-Fu Lee here and other people about Chinese investment not coming to U.S. companies because of CFUIS worries, people are saying we can't afford to start the company in the U.S. We have to start it in Canada. We'll have an office in the U.S. but we're going to make it a Canadian company, not a U.S. company so we can take investment from anywhere in the world. So I want to point out that while you say it's separate, it doesn't really matter what you're doing in the White House to get rid of barriers when these much more systemic barriers are making innovation flee from the US. Flee.

[APPLAUSE]

Kratsios: Okay, I think there's a lot there to unpack. I think generally speaking the immigration issue is one that certainly we're focused on, and I go back to our general top-line philosophy that the best and brightest should have a path, legal path, so they can come to the U.S. And something that I have consistently advocated for and something OSTP has consistently advocated for, because we think it's incredibly important for our country. On the Chinese investment into the U.S. market, I think that one's a little more complicated than discussed there. I think that the number of examples of China's investment, which has led to the theft of IP and taken advantage of U.S. entrepreneurs is actually quite well documented and I think for the first time in a very long time we have an administration that actually takes this issue very seriously and has the back of innovators, entrepreneurs who deserve to have their inventions and their research protected.

Kampel: How do they engage with you? Are there ways for entrepreneurs to really—if there's challenges, again if it's funding—you know, how should entrepreneurs and companies be thinking of engaging more with OSTP, with the White House, if there's any way to remedy some of the situations they're dealing with?

Kratsios: I think for us, when I think about the job that I do at the White House I think, you know, one-third of my time is out discussing and sharing with the world what our priorities are. The second half is working though and driving actual policy and a third of my time is spent listening to stakeholders and community members, folks in the tech community, citizens and everyone else. We take that responsibility very, very seriously. It's something that, if you think about the White House apparatus, there are four policy councils. I would argue that we're one of the most public-facing out there. And we're constantly—I'm constantly out there listening and I would be so excited for anyone who has sort of concerns or issues about the way that their technology or their technology company is succeeding or not in the U.S. We're all ears.

Kampel: We'll start with Diane over here. And then we'll go over to Ken—

Brady: Yes, hi I'm Diane Brady, part Canadian so Kai-Fu Lee is of course welcome in Canada anytime. But, I wanted to just ask: I'm intrigued by what I see in other parts of the world like, you know Macron in India or Modi or—I mean, excuse me, Modi in India, Macron in France and as I look at the U.S. with what's happening with innovation, do you think there's any case for more of a national policy, given the sort of scale of digitization and the need to get all of these players together? What do you think? Like if you look out the next five years, we seem to be the only country that doesn't really have sort of a more macro strategy around this stuff.

Kratsios: I would actually disagree with you. I think we've published and made very public our strategic initiatives on particular emerging technologies so—just last month the President signed a presidential memorandum for the creation of the strategy on 5G, our advanced manufacturing national R&D strategy was just released I think last week as well. At our quantum event, we released a national strategy on quantum. I think to us the issues that are most critical to the future of our country and are very important to our leadership in the world are ones we've taken very seriously and all these strategies were done with time for public comment and all sorts of stuff. So, I'm actually very enthused about those and I think maybe the homework I'll take back is we should share those more publicly.

Kampel: Maybe it's a new PR/marketing strategy to highlight it. We have one question down here from Ken.

Washington: Yes, hi, Ken Washington, Ford. First of all, thank you for mentioning the national labs, the crown jewels. I'm pretty familiar with them I think as you know, Michael, from our earlier chat. But most people in industry are not. And so I guess my question is how do we lubricate the collaboration and speed the innovation that can happen by bringing together the capabilities from federally funded research institutions in a way that puts us on a par with China, which has basically no barrier between the government investment and the policy speed at which they can do China-speed innovation, so that we can have a fair fight when it comes to competing on the global stage with respect to some of these game-changing innovations like self-driving cars and artificial intelligence and quantum computing.

Kratsios: Yes. You're totally right. That's the type of challenge that we think about and worry about a lot. We have amazing federal assets and our biggest hurdle or our biggest struggle is how we actually maximize our input into the U.S. innovation ecosystem. I think, on the point of the national labs, one of the big initiatives we've taken over the last year is this initiative around lab to market, or tech transfer. And it's something that NIST out of the Department of Commerce is leading along with OSTP. This is an initiative to find ways or pathways to more easily get some of the amazing technological discoveries that our done in our national labs out into the commercial world. How are we able to bring entrepreneurs and innovators into the fold to recognize what are the types of things that are being developed, what kind of basic research is out there that we can ultimately commercialize. It's something that I think we've already put out a few things but there's a lot more coming in the next year of our tech transfer.

Kampel: I think we may have time for one last quick one, if there's a quick one out there. Please identify yourself.

McMahon: Thanks, it's Katie McMahon from SoundHound Inc, the voice AI platform company. On the three pillars: policy, academia and privatization. Can you provide further insights or just your vantage point on academia and how the giants and probably several of the late stage unicorns would love to just Hoover up and are in process of Hoovering up such critical academic-based talent, and quite understandably with the carrots dangled. Some thoughts there?

Kratsios: Yes, that's something that I actually hear a lot from academics and I would honestly say, I think when I first came into thinking about this issue, my initial reaction was exactly that. It was like, "We have a real problem here." Our greatest academics are being sort of sucked up by private sector, especially in places like artificial intelligence and so on. What I've ultimately come to is it's kind of like that, but not quite. What you ultimately see in academics is they're academics for a reason. They have spent many, many years studying and mastering a craft and working at a university and becoming published because that is what they like to do. That's what they're good at. And ultimately what I've seen or what I've sort of heard anecdotally is what you end up having is a number of these sort of tours of duty where folks go off in some way to work in a private company and ultimately find themselves back at the university.

That being said, I think what we probably need to be most careful for is how many graduating folks who are just finishing their PhD are continuing their track in academia or they're going straight in the private sector. And that's what we want to think about a lot. Back to the national lab example, one thing we've been thinking a lot about is how we can leverage the scholarship money that's available through federal channels in order to make sure that we're funding areas that have this exact problem. So, at least we can keep the supply moving in places where there's a lot of demand for that talent outside of the academic sector.

Kampel: Well, Michael, thank you very much for joining us.

Kratsios: Thank you.

[APPLAUSE]