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Kearney, Washington, D.C.

The US–China high-tech competition is modernizing American industries: an interview with Keith Krach

The tech mogul discusses the importance of fostering clusters in the US semiconductor market, expanding the clean network, investing in automation and solar technology, and creating more awareness about the China challenge at the executive level.

The idea of competing with China as an alliance of value-driven democracies has gained tremendous momentum over the past four years through the architecting efforts of Keith Krach. A wildly successful tech mogul who founded Ariba and led DocuSign, he also served as Undersecretary of Economic Growth, Energy, and the Environment for the US Department of State.

As the country's leading economic diplomat, Krach set out to develop and operationalize a global economic security strategy that focused on three items: driving economic growth, maximizing national security, and addressing the China challenge. To accomplish these tasks, his team identified three pillars: turbocharging US economic competitiveness through tech innovation, safeguarding America's assets, and building a network of trusted partners.

Through his tenure at the Department of State, Krach built all three pillars. And although he is no longer serving as Undersecretary, he is still focused on turbocharging American tech innovation and seeing legislation crafted to further his efforts.

Kearney consultant Drew DeLong sat down with Krach to ask how these trends will continue to develop, how they'll impact US manufacturing, and how America can win in this economic competition with China.

Drew DeLong: We've lost 37 to 12 percent of the semiconductor space. But now, we have Taiwan Semiconductor Manufacturing Company, Limited (TSMC) onshoring and Samsung committing to a new \$17 billion foundry. How is this momentum going to play out?

Keith Krach: While running economic diplomacy at the State Department, my mission was to develop and operationalize a global economic security strategy that drove economic growth, maximized national security, and addressing the China Challenge. We developed that strategy with three pillars:

- Turbocharge economic competitiveness and technological innovation.
- Safeguard America's assets: intellectual property, healthcare, and financial systems.
- Build a clean network of trusted partners.

The first pillar, turbocharging economic competitiveness, drove what became the Endless Frontier Act. We met with Senators Chuck Schumer and Todd Young a year and a half ago, and we showed them that with a \$100 billion—now \$150 billion—investment, we could grow to \$500 billion of investment with private-sector and technological allies matching our investments. These allies, called the D10 (the G7 plus India, Australia, and South Korea), are crucial to rallying investments. Furthermore, we're going to incentivize participation in this alliance of democracies by giving open commercial access to the technological research generated by the investment.

The \$250BCHIPS for America Act was also introduced and put in the US Innovation and Competition Act (USICA) to provide more than \$50 billion for federal funding for foundry construction, research, and development support.

We also managed to onshore TSMC in two weeks. I knew some of the board of directors. We talked nightly, and we figured if we can get them to announce, two things will happen:

- It will serve as a catalyst for other semiconductor manufacturing foundries to onshore. We've now seen that happen with Samsung bringing in \$16 billion of investment to either Texas or Arizona and Intel bringing in \$20 billion into Arizona.
- It will serve as a catalyst for Congress to allocate money. The reality is that China, Korea, Japan, and Taiwan bought the US business and then subsidized it heavily, and we needed to spend the money to buy the business back. We've now seen that, with the bipartisan CHIPS Act led by Senators Cornyn and Warner, we're committing more than \$50 billion directly.

So the good news for business is: Here comes \$250 billion, the level of the Apollo program, coming in to help tech and manufacturing sectors—10 specifically defined sectors in clean energy, autonomous vehicles, quantum computing, and others—to drive the industrial base, which is vital to America's national security. This gives us something to rally industrialists and tech titans around. Now, the key is to get matches from the private sector. We did our research: everyone loved this idea, both in the private sector and from our closest economic allies.

The implications are going to be staggering. This is a great opportunity for the private sector to turbocharge their competitive advantage because they get the luxury of long-term investments that are built to last—not just having to worry about the 90-day shot clock of an earnings report. This legislation incentivizes industry to invest in long-term technology, and we can grow with economies of scale as a result.

It is imperative that this technology is commercialized and safeguarded from theft and forced technology transfers. If our allies and the private sector match our investment, they get access to the research the moment it comes out for commercial benefit—a true pay-to-play model. If they don't, they might face a two-year delay or something similar.

Drew DeLong: Looking ahead 10 years, what other ways do you see industry ramping up in the face of uncertainty? What does winning look like to manufacturing right now? How do you win?

Keith Krach: When we onboarded TSMC, they brought their top nine suppliers with them. Those suppliers are now bringing in their suppliers. An ecosystem is forming. This clustering effect is particularly evident in the semiconductor industry, very similar to Detroit with the automotive industry. You want to begin to build that clustering effect in key industries, particularly in manufacturing. That is what success looks like.

Another good example of where the industry will be going is clean energy. We all want to do something in climate change, and the key is innovation. Clean energy is going to be as big as the computer and software industry. We must lead it and own that, if nothing else for jobs and GDP growth.

Here's the inconvenient truth: industry experts are saying 70 percent of the world's energy will be solar by 2050. It just so happens that China owns the solar energy business. There are 10 top companies in that sector. Eight are in China. One is in the United States: it's called First Solar, and it has a 2 percent market share. There's a Korean one that owns 5 percent. The other 93 percent is China.

Where do they manufacture their solar panels? Xinjiang. The average labor cost in the solar business in Xinjiang is \$700 a month. For Europe, the United States, and Japan, competition is impossible. The other thing about the solar panel business is that it's incredibly energy-intensive. The amount of energy that a solar panel puts out in three years is the same amount of energy that it takes to manufacture it. So why are the Chinese making the panels in Xinjiang? Because that's where the two biggest coal-fired plants in the world are. That's where the open-pit coal mines are.

As we all know, energy security is national security: wars are begun and lost because of energy. If we do nothing, we're totally dependent on China for our energy, and that's not where we want to be.

“We have to rally our manufacturing titans once again.”

Keith Krach



Keith Krach, former Undersecretary of Economic Growth, Energy, and the Environment for the US Department of State

Drew DeLong: It's difficult to compete with \$700 a month. Historically, our labor cost is America's greatest challenge with our manufacturing competitiveness. Within USICA, there's incentives for building supply chains in Latin America, the Caribbean, and West Africa. So does winning in that space look like developing outsourced manufacturing in neighboring areas or something where we have to invest so heavily in this industry that we have to bite the bullet in the short term to lower costs to gain our energy independence? How do we get to energy independence first when we're competing against such low labor costs?

Keith Krach: Right, so there is good news. Let's look at supply chains. Why did we originally go to China? Because the cost of labor was so low. For regular workers, that cost of labor has now increased. Also, back then, the level of automation and advanced manufacturing and robotics was not there. Now it is.

Automation now means more than the cost of labor. Innovation also now means more than the cost of labor. When you increase the level of automation, shipping costs and other inputs become more important. In the future, that looks like more automated plants. How do you get around \$700 in labor costs? You make it in advanced manufacturing, robotics, flexible manufacturing systems, and automated guided vehicles, and you build factories of the future. That's what's crucial.

Drew DeLong: With automation comes concerns about lack of jobs. How do we quickly ramp up the workforce so we don't wait four to five cycles for more college STEM graduates?

Keith Krach: The most important thing is the people side of the equation in the skilled labor force. How do we bring these people who are screwing nuts and bolts on the assembly line and teach them how to program robots? I've been involved in that forever, and it's all about driving productivity. It's also the number-one factor in increasing the standard of living. It's factory automation, office productivity, and increasing their skills.

At Purdue when we hired Mitch Daniels, we put a big emphasis on STEM and retraining the workforce. We bought Kaplan's online education program and created Purdue University Global, where you can get your engineering degree—Purdue Quality—all online. It's become a national treasure and model for retraining the workforce. In the USICA, there's a huge emphasis (more than \$4 billion) on retraining the workforce. We need to relook at our visa program and make sure when we graduate engineers and scientists from around the world, we can help pave the way to citizenship because they want to stay here, and that's really a key aspect. This is all about bringing the industries here.

Drew DeLong: China has appointed a chip czar with a \$1 trillion budget. We're ramping up with 25 percent tax breaks, \$52 billion in public investment, and onshoring. How does this end? What's our end game against an opponent that isn't playing by the rules? How do we win?

Keith Krach: Here's the end game: it comes back to the clean network. Why has China been winning? They've used the things we honor against us. \$1 trillion tells you how important the semiconductor industry is to them. We have to stand by our core trust principles. We have opened clean networks to any country, but if you don't pledge and honor the rules of the clean network, then you can't join the network.

You either play by the rules or you're excluded from 80 percent of the market. And that's huge. This clean network is just like NATO: if you retaliate against one of us, you retaliate against all of us.

We then do a free trade agreement with everyone in the clean network. If one nation puts up tariffs and sanctions, we all put them up as a united front. It's important to do this to maintain the moral high ground.

China can take its pick: be excluded from 80 percent of the global market or reform. You have to build for the long term. We rallied the industrialists for WWII: Henry Ford made planes, Walter Chrysler made tanks, Pierre DuPont changed all 45 GM and DuPont plants to make weapons, Henry Kaiser was a shipbuilder. They're one of the most important reasons for winning the war, and now we have to do the same thing in this economic war. We have to rally our manufacturing titans once again.

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