Critical Issues Confronting China series featuring John Haigh, March 9, 2022

- [Moderator] Hello and welcome everyone to today's talk. We will get started momentarily after we give another minute or so for people to log on. We thank you very much for joining us.

- Welcome everyone to the Harvard Fairbank Center's weekly forum on critical issues for contemporary China. Mike Szonyi, the director of the Fairbank Center sends his greetings. I'm Bill Overholt, a senior research fellow at the Kennedy School. My job today is to introduce John Haigh, the co-director with Larry Summers of the Mossavar-Rahmani Center for Business and Government at the Kennedy School. I have to give him a really good introduction because he's my boss. John started his career with 13 years in management consulting, specializing in strategy concerning telecommunications, transportation, energy and the environment. He then held a series of senior positions at AT&T basically running AT&T's international business with the eventual title of president of AT&T International Ventures. In that role, he had important business dealings with China, including the development of a secure financial trading platform in Shanghai. After that, he served as Executive Dean of the Kennedy School for a dozen years prior to assuming his current role. Along with teaching and running the center, John is currently a leader along with colleagues like the Chairman of the Federal Communications Commission of a study of global technology standards and how they express the shaping of a country's governing philosophy. He has paid particular attention to China's goals in advancing technology standards. He's going talk us to us about that today. John brings a special combination of scholarly depth and practical experience. John, over to you.

- Terrific. Thank you, Bill. And thank you to the Fairbank Center, both you, Bill and the center for inviting me to come talk today. I'm actually looking forward to this quite a bit. There are a couple things that I would like to give as a little bit of background or context and Bill touched on this, but I was a president of AT&T's International Ventures at roughly kind of late '90s through the early 2000 period. And I did interact with China in that context. And I also actually oversaw new services, emerging initiatives at AT&T Wireless when AT&T Wireless was spun out of AT&T. My background, as you gather from that, is not an academic background. I am not your typical traditional academic. So if you try to go and look at papers I've written, you probably won't find a whole lot. And I would say just that I bring a very kind of pragmatic businessman's perspective from industries that are heavily regulated. The work that Bill touched on that we're doing now, we have as research fellows at the center, Tom Wheeler, Phil Revere. Tom Wheeler used to be the chairman. He's former chairman of the FCC, Federal Communications Commission. Phil Revere, who was the US ambassador to the ITU and a few others. And we've started working on this question of standards and global standards in

the telecom sector, but more broadly in digital technology. What I want to touch base on today, and I'm gonna share my screen with you because I got a bunch of slides I'd like to go through and I hope I can find this. All right. Can people see that, I hope? Bill, if you can tell me you can, that would be helpful.

– [Moderator] We can see it.

– [Bill] Yes, can see it.

– [John] Okay, terrific. So basically what I want to cover today, what I'm gonna go through is just a sense of setting some context in that talking about digital technology trends. And I want to talk about something called the trilemma and maybe you've heard about this. It's an old kind of, just framework that Danny Rodrick wrote quite a while ago, back in 2000, if I remember right. And then there's this issue of companies in nation states and then how that applies to China, as you think about China's technology aspirations and how they're pushing to set standards, their new IP, and then a use case, if you will, the CNY, the Chinese digital currency that they they're setting up, and then what's the Western response. So that's the outline structure and I'll go through it. Let's start with the technology. So a few things that probably not startling to any of you, but are important. And the first is really around this question of computing power and bandwidth. From my days at AT&T, these were incredibly critical components of a telecom system, a digital communication system. You shifted from data, from a analog voice transmission system to a data system. And when you do that, all of a sudden you're moving to packet networks and you're moving to a structure that is very different and heavily, it's basically a bunch of computers connected by wires. And if you think of it, when you think about the transistors and the development of transistors, it's rocketed in terms of transistor's microprocessor. You've probably all heard of Moore's law, kind of in conjunction with that growth and the ability, the miniaturization of transistors. You had vast reductions in cost. Similarly, when you think about the bandwidth required to transmit packets, you've got a phenomenal growth in the kind of capacity of networks that the transmission aspects of networks and same thing with memory and storage. So we don't need to dwell on this, but the point is basically you've moved to a digital structure, infrastructure for information exchange that cuts across multiple countries and increasingly at lower cost with increasing capacity. And that changes the world global dynamics dramatically. And just, I mean this is again, nothing new, but if you look at some of the US companies that people are familiar with and you look at their market value, these are in many ways stunning market values, and these are December 31st, if you look at the last column, December 31st, 2021 market values. So these have changed a bit in the last few days, but you've got a billion for Facebook, basically 2 billion for Google and Alphabet, 3 billion for Apple, you know, almost 2 billion for Amazon and about two and a half trillion, sorry, trillion for Microsoft. So

these are all in trillions, which are just stunning numbers at some level, but what sometimes people don't necessarily appreciate, and I think people in the United States in particular have a bit of a myopic view of the world and they don't realize that these companies are not US. I mean, they realize they're not US companies per se, but I don't think have digested what that means. And just to give you a little bit of a flavor, if you look at Apple, 42% of its revenue comes from the Americas. But if you look, you've got 24% from Europe, 19% from China, 8% from Japan and 7% from the rest of AsiaPac. So AsiaPac and Europe are massive markets for Apple, same thing with Alphabet. Interestingly, for both companies, their revenue, less than half of their revenue comes from the United States. And so they're really operating as global companies. They have to, and similarly with Amazon, and the companies report these things slightly differently. So that explains part of this for you, why they're different categories. But if you look at Amazon, they report North America, that's still 60%, but then they say international, which is all the rest of the world is about 30%, a little under 30%. But then interestingly, they list 13% as AWS and AWS is their cloud service business. And it's interesting, they report it this way because they don't think of the cloud business as basically bound by nation state boundaries necessarily. They think of it as a global support system for all of their information flows. Now, the thing that I would say is what people sometimes when I say they're myopic, they look at the world through these lenses, but what they don't digest necessarily is the companies like Alibaba, Tencent and Huawei. And if you look at the market value for those, you see that Alibaba is big, Tencent is big, and by the way, these numbers are down slightly, maybe a lot, simply because of various actions, the US government has taken through CFIUS to limit their access to US markets and so on. The NA on Huawei is interesting because Huawei doesn't have a market value because it's not publicly traded. And if you just look at Alibaba as an example, this chart kind of shows you all of the intricate interrelationships that Alibaba has into the internet and all of the ownership positions they have across these different companies. And I just took one piece, which is Alipay, which is a critical part for them, and it's their core mobile payment platform. It supports multiple businesses, right? And you know, it does consumer lending. It does money market funds, wealth management, health insurance, all those things. And I don't think people have in the United States appreciate that they have 10 times as many customers as the largest US bank. And they use one 10th of the number of employees. And part of that is they are truly shifting to a strong digital core, utilizing AI and incredibly successful. Now that success is also part of what caused problems for them. If you look at, from a globalization perspective, their approach, it's, you know, this is from their annual report, that 2021 annual report, continue to expand our globalization effort, serve more than a billion consumers through our China consumer business. That doesn't mean they're in China, but it means that they're using the Chinese consumer business platform like Alipay or whatever. And then

they want to facilitate more than 10 trillion RMBs of annual consumption on the platforms, or about a trillion and a half. Now that's their aggressive stance, but obviously the People's Republic of China, PRC has some concerns because, and this is my own perspective, which may not be shared. I think the PRC is very concerned that Alibaba, through Alipay and other systems, is collecting all of this personal data. And it's not clear what the relationship is of that to the PRC. And so if you read the letter that came out from the chairman and CEO of Alibaba, you know, and I just pulled a little piece of it on April 21st, April, 2020, Alibaba received the "Administrative Penalty Decision" issued by the State Administration for Market Regulation, SAMR, of the People's Republic of China. And then he goes on very humbly to say, we accept the penalty with sincerity, and we'll ensure our compliance with determination. This experience has made us more thoughtful about the responsibilities of a platform company like Alibaba, which aspires to be the infrastructure of digital economy. They got their wrist slap, big time. Jack ma, who is basically the founder of Alibaba, You'll notice that's not his name listed as the chairman and CEO. And this was a very aggressive, very deep response by the PRC. And if you look even just recently as yesterday in a publication called The Information, which is a daily newsletter, Jack Ma's interest, Ant Group delays IPO, as Beijing's tech crackdown goes on. They canceled that Ant Group's 37 billion IPO in late 2020. And it goes on to kind of say, gee, what's gonna happen. And are they ever gonna be able to have a public offering? Let's switch to Huawei just for a second, Huawei aspirations. So they had, this is from their annual report and the emphasis I added, but they want to build a fully-connected intelligent world. And Huawei is primarily, I think most of you probably know this, but if you don't, they're primarily an equipment business and they want to drive ubiquitous connectivity, drive ubiquitous cloud and intelligence, build powerful digital platforms and redesign the user experience with AI to give more personalized experiences. Now, I had some experience with Huawei when I was at AT&T. And in particular AT&T had a company called AT&T Latin America, which was a publicly traded company of which AT&T parent was the controlling shareholder. And I was the AT&T representative on the board of AT&T Latin America. And the CEO and president of AT&T Latin America came to me and said, basically John, Huawei has come and offered to sell me, this is in around 2000, to sell me networking equipment. And their price is about 60% of the next best offer. And the next best offers include Lucent, which was the AT&T equipment spinoff that had occurred in 1993. And his question was, do I have to buy Lucent equipment? And my response was to ask him a couple of questions. One, do you know the funding structure of Huawei? And is it sustainable? And two, do you know, or can you prove to me that there are no back doors in the equipment that enable them to collect and aggregate information and data? And he couldn't answer either of those questions affirmatively. And so the decision was to go with Lucent equipment. But that was very much even in 2000, the kind of mindset that Huawei had and how they were approaching the markets. Now, if you

look at their growth, their growth has been phenomenal, and they are the world's largest equipment provider. They don't have all that much competition. You've got Ericsson, you've got Nokia in some areas, you've got Cisco in some areas, but you know, they're doing revenue of 137 billion. And if you look at the source of that revenue, the bulk of it is in China, but they also have a significant component that comes from EMEA, and not as much from the US, not as much from America, but certainly aggressively trying to enter the market. It's certainly up until recently when the effects of CFIUS actions went into play. And if you just, that's at the firm level, right? You're looking at firms and they're deeply embedded in the global economy. But if you look at this from a country perspective, you also see that both countries are incredibly embedded in the international economic structures. Almost about a fifth of China's GDP is from exports. That's $3.4 trillion. For the US, a little over 10% is from exports. And that's about two and a half trillion dollars. So these are big numbers and the countries themselves and their firms within these countries are heavily integrated into the global economy. Now, this is the global trilemma and I don't know how many of you are familiar with Danny Rodrick. The original version was in the Journal of Economic Perspectives. You can go back and find it, but he basically identified these three major considerations. One is kind of what he called, hyper globalization. And that's the integration in financial markets. The other he referred to as national sovereignty and the third was democratic politics. And if you think of that first relationship of national sovereignty and hyper globalization, if you get hyper globalized, you basically are adhering to the fixed rules of global financial markets. So you've got free capital markets, free enterprise, small government, low taxes, flexible labor markets, deregulation privatization. Now what that does is in fact, in the kind of nation state, national sovereignty space kind of limit, if you will, or minimize your ability to manage your capital flows, as much as you'd like. And historically this model has not been compatible with democracy. The example Danny gives is Argentina, which tried to be aggressive and follow the rules to attract international foreign capital into Argentina. They were kind of somewhat successful, but then when they suffered a financial crisis, the democratic politics within the country, the pressures from people, extended that created problems and was a major issue for Argentina. Democratic politics tended to override the golden straight jacket of being in hyper globalization. Second is thinking about national sovereignty and democratic politics, right? Bretton Woods was, it's sometimes called the Bretton Woods Compromise, which really allowed countries to dance, as it says, dance to their own tune, as long as they removed a number of border restrictions on trade, generally treated people. Now, the problem is that that can maintain some national sovereignty and it can, can certainly provide some democratic legitimacy at home, but it's not really, it's an incomplete globalization. So you don't get the benefits necessarily of globalization. And then really the third alternative is global governance. So you have robust global

institutions with regulatory standard setting powers. So, that has
certain pluses in terms of managing democratic politics and
integrating into the global system, but it require you give up a lot
of things that would be nationally determined, right? So you give up
some regulatory authority. You have some institutional limitations and
you give up, in a global sense, policy diversity. So you lose the
experimentation that comes from that. Now the question for us that I
struggle with in working on, is this question of when you think of
China or you think of Russia and you think of the US, how do these
three pieces come together? And Danny has a very strong perspective
that you can't have all three, that you have to pick two kind of "pick
two, any two", right? And if you think about China, it's very
concerned obviously about national sovereignty. It operates in these
massive global, in the massive global economies in a significant way,
is dependent on it for its exports, but doesn't really like the notion
of a golden straight jacket. It doesn't want to give itself up to some
of these global financial rules that exist. And then if you think of
the US, I mean, you've got democratic politics and desire for
globalization, but the same kind of issue in a slightly different form
of how much does it really want to integrate into the global world.
And so it's kind of, all of them are kind of struggling with this
trilemma and how to play into this world. And what makes this
incredibly difficult is what I was getting at earlier, which is you've
got this highly-integrated economic structure, and that in that
structure is really, the question mark is, can you operate as a
distinct and separate nation state without integrating into the global
economy, or do you have to integrate? And if you do, then what are the
terms and conditions under which you're gonna integrate? And that's at
the heart of what we're really talking about when we start to get to
standards. When you think about the relationship of companies within
this structure, then you've got, and this is from William Baumol. He
had broken out types of capitalism, and on the left, you've got US,
either entrepreneurial capitalism, "big firm" capitalism, elements of
both. And just to kind of give you a sense of the characteristics of
those kinds of capitalism, the structure is pretty straightforward.
You got a large number of actors within the economy for the
entrepreneurial kind of, and it's unceasing drive, an incentive to
innovate, undertake and commercialize radical or breakthrough
innovations, whereas in the "big firm" capitalism, most significant
economic activities are carried out by a few big firms driven by
potentially things like network effects and scale effects that make
them and allow them to get large in control markets. And the oligarchy
capitalism, you've got nominally capitalist system with property
rights, but government policies are designed to predominantly or
exclusively promote the interests of a very small, narrow usually very
wealthy portion of the population. And you could imagine that Russia
kind of fits into that category. And then you've got state-guided
capitalism, which is really governments, not the private sectors, are
deciding kind of which individual firm should grow and geared to carry
out those decisions, using policy instruments that kind of focus on

people they want to win. And that's China, and so you have a conflict, if you will, of types of capitalism. And I know China is an authoritarian state, but it is choosing to play in a capitalist world, a capitalist economy, basically free markets. And that's one of the aspects that's actually quite different. Sometimes people try to use the analogy to the Cold War. It's very different, and it's very different because if you think about the Cold War with Russia, Russia was not choosing to operate as extensively as a capitalist enterprise in global economies, China has made a different choice and while they may be socialist at home, authoritarian at home, they are operating in global markets. Now, how do I want to characterize China's approach to standard setting? There are things that they are saying externally. And then there are things that are being said internally. And there is a nice piece that some people at Brookings did titled China's as a Cyber Great Power: Beijing's Two Voices. And I pulled some quotes just to kind of give you a little bit of perspective. Externally, they're saying things like "international standards setting in telecom should be win-win, collaborative and inclusive, provide a blueprint for formulating global standards with mutual respect, shared governance, build mutual trust, deepen cooperation, work together with others, and support multilateralism." And that's kind of the external-facing commentary. But if you look at what they're saying internally, it's very different. "Under the conditions of economic globalization, modern market economy standards are the commanding heights, the right to speak and the right to control. Therefore the one who obtains the standard gains the world. The first-rate enterprises sell standards, second-rate company sell brands, third-rate company sell products." Or, "mastering the standards by yourself and building networks on your own will bring great guarantees to information and even national security." "Principles put forward by Xi Jinping will also be recognized by all countries in the world and will become the basic norms for internet governance in all countries." These are statements that clearly show a desire to provide a dominant position in global standard setting and therefore for their firms and for their country's values. Similarly, if you continue down that path, "cyber security review system introduced by the relevant Chinese authorities, is based on the fact that China has the largest number of netizens. Promulgation of cybersecurity review will become the most effective legal basis for maintaining national cybersecurity, and will play a major role in promoting the building of a cyber power." This is an interesting kind of quote that was given at a press conference because it's the only time, I was told and I think this is probably right, it was the only time in a six-year period that actually used the word cyber power in defining an objective of China, which was unusual that it would acknowledge this. If you look at what they're saying internally, "those who win will rejoice, those who lose will collapse. The competition in cyberspace is, in the final analysis, the competition for talents. To build a network power without an outstanding talent team, without the burst of creativity, it is difficult to succeed." What we're seeing, I think, increasingly is

that if you go back a decade, two decades, Chinese students would be here. They would come and they would have a desire to stay. And now you're seeing more and more that they may have a desire to stay for a year or two, but their plans are to go back to China. And I think part of it is an effort by China to build its internal talent and keep it in China. But also there are huge economic opportunities in China for many people. And I think they want to take advantage of that. That changes the dynamic, I think to some extent as well. So now I want to shift gears and this specific issue of internet standards is quite important. And just a couple of things to talk about, there are different bodies that develop standards, standards development, SDOs, and you have multilateral SDOs, which are really country-driven, and they try to develop consensus among countries on standards, right? The ITU, the International Telecommunication Union is one of the most obvious. The other, I just mentioned to give you an example is Third-Generation Partnership Project, 3GPP, and they develop 5G standards. And then on the other side, by the way, the ITU has "one nation one vote" in its structure. So a small African country has a vote just as China does, or as the United States does. On the open standards, multi-stakeholder SDOs, this has historically been the major place where standards are set. And you have something called the IETF, which is the Internet Engineering Task Force. And they're the primary SDO for developing protocols, internet protocols. Historically, they've been very engaged, very much a part of the process. The participation in these open standards groups is generally pluralistic voluntary, bottom-up and driven by industry and innovation needs. As one of the experts here that's affiliated with the Kennedy School told me, he said, yeah, these were basically rules set by those who show up. And one of the things that's important even on the ITU side is that you do have some non-state members in ITU, but they're usually, they have a private sector focus and they're those who can afford hefty fees. Right now, China has the largest delegation to the ITU, and it is a mixture of government and firms. And China has trying to shift from the open standards approach, right side of this graph, and push more towards the ITU where governments have more control. And by definition, they have more ability to shape the results. And they also are actually trying to build a lot of this into things like their Belt and Road Initiative. There's the digital Silk Road where they're trying to build their approach. And just to give you an example with these standard-setting bodies, how things have changed. In 2016, there was a meeting of the Third Generation Partnership Project that I mentioned that sets the standards for 5G. And Huawei demanded adoption, they demanded adoption of a protocol. They had an error-detection, correction protocol for 5G data transfers, and there was a competing Qualcomm proposal and they kind of shed the traditional approach of trying to build a differential consensus among the parties. And they expected support from other Chinese companies there very clearly. And it was an unprecedented outcome in that both standards were adopted. A year later in an unusual approach, Huawei proposed a candidate to lead a key working group, and they challenged

the candidate from Qualcomm. And it was interesting the chairman of the working group basically had to tell the Chinese firm participants that when they were voting for the new candidate to lead the working group, they were not allowed to take their phones into the voting booth. And the reason was because the firms were being, I was told, the firms were being required to take photos as proof showing proof that they had voted for the Huawei candidate. And if you look right now, I think within this group, there are 35, Huawei has 35,000 protocols, proposals in front of the group, and about a quarter of them have been approved. So I apologize I'm gonna take you through, just again, to show you how China is actually integrating itself. This is just one example, but I could find hundreds of examples where they are trying to push to get Chinese individuals to lead many of these standard-setting bodies. This is Houlin Zhao, I hope I pronounced it correctly. And he is the ITU Secretary-General, and he has a long history of being there. And he's clearly there as the head of the Chinese delegation, but ostensibly, he is now leading the ITU. Now again, I apologize I'm gonna take, this is gonna be a little technical, but I don't mean it to be too technical. There is something in the world of computing called the Open Systems Interconnection Model. And this is the model that I've laid out here. And the model has these seven layers and they go from a physical layer at the bottom up through data and then a network layer, which is the routing and packet-forwarding approach, transport session, presentation and application layer. Historically the application layer has been kept very separate and distinct from the lower layers in particular, the network layer. So when you think about IP, you talk about internet protocols. You can send something, let's say, you send an email, and that email gets broken up into a bunch of packets and it goes over the internet in some form over the global network. And then it gets reassembled at the end and you see the email. But all of those intermediate layers can't see the content that's in that packet. They can't reassemble the packets and they can't other than at the end, but they can't see the content in the packet. And you have an IP address at the sending end and an IP address at the receiving end, but you can't tie that IP to address to a specific name or identifier. So you don't know who's sending it, receiving it and what's sent, right? So it maintains this anonymity in the internet. What China is trying to propose and they propose something called the new IP. They introduced it at the ITU Telecommunication Standardization Advisory Group in 2019. It was ultimately voted down. But I want to just help you understand what they're trying to do with this new IP. On the left, you see the historical and current approach of the internet, right? You have data transport, so little packets going through. And again, as I said, the address where the packet is headed is on it and the address for replies, but you can't see into the black box. You can't see into that orange box. China's new IP builds off a blockchain structure. And so that means that it's permanent. You have hard-coded addresses with identifiers and a DNS resolution trace, right? So, you know who's sending it with some specificity down to the individual

name, and then the information you get on the packet header, you get a description of the content. You get an address where the packet is headed and address for reply. So you're seeing all of this information that historically has been anonymized and encrypted. And then you're seeing hard-coded addresses and identifiers that enable tracking, and the network can be instructed to disconnect devices or discard packets. So what this and basically what this becomes is a massive surveillance machine. And it enables people to have their access cut off. It also enables observation of what people are doing, and it's down to the individual level. For me, I find this a very scary proposition. So, as I said, this proposal was voted down in 2019. It was defeated, but it doesn't mean that China has given up on the new IP. All they've done is simply pursue it in different ways. So they basically are trying to standardize discrete pieces of the new IP through lower-level subgroups within the various standard-setting bodies. So they're still aggressively trying to build this out. And at the same time in April of 2021, they started a large-scale pilot project in China, where they're building a backbone network that connects 40 leading universities. And it's built off of this new IP structure. And it's going, the intent I think partially is to provide a proof of concept. By providing a proof of concept, they're overcoming one of the objections that came up when the proposal was brought forward and defeated in 2019. So where does that leave us? Well, I want to talk about one use case. And I was on a call last Friday, the Hoover Institution released a report called The US, China and the World at a Crossroad on Digital Currencies. And this is a classic use case. The people's Republic of China clearly views digital currency as a critical area within the broader cyberspace area where it kind of exerts a leadership role in setting global norms and rules around both digital policy and technical standards. And they are the country to issue the first CBDC, Central Bank Digital Currency. They say it is only a cash entity and operating only within China, but they are using it to get first-mover advantages in the global financial system. And they want to solidify their leadership in payments technology innovation. They want to set economic norms and technical standards that align with their system of authoritarian governance. And they want to undercut the traditional dominance of the US dollar as a source of geo-economic strategic influence. I understand why they might want to do that, but it is again a use case built off of this infrastructure that I'm talking about, this new IP infrastructure. The PBOC has already gone out and started proposing international principles for cross-border digital currency transactions. Somebody asked a question, I was on a call and somebody asked someone from China, when will you move to a fully non-cash digital economy? And the person laughed and said about two years ago. I don't know if that's accurate, but it gives you a flavor of kind of the orientation. And again, I would point out that Huawei is a strategic partner of the PBOC's Digital Currency Research Institute. And they're collaborating with them on an E-CNY project related to distributed databases and networks, as well as on E-CNY enabled mobile phones. So it's a very

systematic, very kind of integrated approach to thinking about
building a digital infrastructure that can support multiple
applications. And the PBOC is pulling a lot of what had been
potentially Alipay, Alibaba, some of Tencent's activities, and pulling
that structure back into, I think, a PRC-dominated system. And the
other thing I want to mention, a couple of other quotes that I want to
just bring up are this issue of how much is this civilian and how much
do they integrate military and civilian policy. And externally you get
comments like "the US officials have distorted China's military-
civilian integration policy in malicious disregard for facts, and seek
to place a technological embargo on China under this pretext,
referring to embargo, for example, on Huawei, thus disrupting and
impeding normal economic trade", da, da, da. "This practice born out
of Cold War mentality contravenes the spirit of international
cooperation in the trend of the time. It undermines the interest of
China, the US and the common interests of all." Now, that's what
they're saying externally. Internally, this is what you can find. if
you look hard enough. And again, the Brookings people did a good job
of pulling some of this up. "Cyber information, military-civilian
fusion is the key field and frontier field of military-civilian
fusion. And it is also the most dynamic and potential." And then
again, "due to the highly monopolistic nature of information
technology systems, it's unlikely that there will be two different
systems for military and civilian use. There's an arduous task for
China to build a system that can rival the world's advanced standard.
Therefore it is particularly necessary for China to integrate military
and civilian resources through military-civilian fusion system." And
then the last thing, you know, we tend to think of this, or I tend to
at times, if I'm not careful, find myself thinking about this from a,
they're aggressive kind of trying to play into global integrated
economic system on behalf of customers and on behalf of their firms
and on behalf of their governance beliefs. But it's also, there is,
from their perspective, a risk, right? And they do worry about these
risks. "What the US has done to Huawei shows clearly that the market
economy and fair competition principle it claims to champion is
nothing but a fig leaf. Its behavior violates its rule. The reason why
United States suppresses Huawei may be because it is worried that if
other countries use Huawei, the United States will no longer be able
to go through the back door and engage in eavesdropping." Interesting
judo kind of move. But if you look at what they're saying internally,
"without network security, there would be no national security. There
would be no stable economic and social operation, interests of broad
mass people would not be guaranteed." And then I kind of like this
kind of comparison. "No matter how large an internet company is, how
high its market value is, if it's heavily dependent for core
components, major artery of the supply chain is in the hands of
others. It is like building a house on someone else's foundation." And
then the risk of building on somebody else's foundation multiple, and
then "in the information age, multiple cultures and many ideas, the
Western countries use this, the advantages of information technology

to carry out cultural penetration, ideological infiltration, and political infiltration." This tease this issue of standards, not as a kind of getting an advantage completely. It is almost a sense of, this is an existential crisis to China that we must face and address. And you could have a similar perspective if you think about the US and Western democracy. So it naturally kind of raises a bunch of questions. You have a US system and other democratic countries, highly decentralized capital system. Companies operating pretty much autonomously with these democratic values and extensive international integration. And on the Chinese side, you have highly centralized, companies are responsive to the PRC contrary approaches to the human rights, extensive international integration, and a very extensive effort in a coordinated manner across the PRC, and key firms to define global technical standards consistent with their political system. This sets up a tension. And it's kind of given the global nature, my question and what I'm looking forward to having a conversation about this with all of you. Given the global nature of digital technology, how do these different approaches resolve themselves? Is this a winner take all, or is it a fragmented technical set of standards and a splinter net? And, I did want to pull up. So in 2006, I don't know how many of you know Jack Goldsmith and/or Tim Woo, Tim woo is now on the, he's a Columbia law professor, and he's on the Council of Economic Advisors. Jack Goldsmith is a professor here at the law school. They wrote a book in 2006 called Who Controls the Internet? And I'm gonna just read you one of the quotes from the book. "The internet is splitting apart and becoming bordered. Far from flattening the world, the internet, its language, its content, its norms is conforming to local conditions. The result is an internet that differs among nations and regions that are increasingly separated by walls of bandwidth, language and filters. This bordered internet reflects top-down pressures from governments that are imposing national laws on the internet within their borders." Now, if you think about what are the response, the United States and Western democracies, to some extent have gone and operated not in the multilateral, but in the multi-stakeholder kind of model. And so, you know we're not really showing up in the same way to some of these major issues, on some of these major issues. And so what's the response? This is a start. There's much more to do in kind of sorting this out, but there needs to be some kind of, first of all, does the US and do other democratic countries have the willing and capacity to exhibit leadership and try to build a coalition of the willing to bring this forward? There needs to be some clarity on strategically what is trying to be accomplished some more systematic process of engagement. In the US, because it touches so many different aspects of policy, it's gonna require a very coordinated inter-agency effort. There's gonna be a need to kind of build and enhance our competitive and innovative approaches, things like passing the US Innovation and Competition Act, and then the Chinese are incredibly persistent taking a long-term view aggressive, and there needs to be a comparable response. It needs to be a long-term view because it will be a multi-year effort over time. And the

question in my mind is how does this play out over time? And I'm not good at predicting things like this, but what are the ways, are the potential ways in which this could be compatibly and reasonably resolved and developed? And I don't know if that's possible, but I would be interested in hearing people's responses. With that, I am gonna stop sharing my screen and go back to Bill, and I'm happy as best I can to help address any questions that may come up.

— Thanks so much, John. I wonder if you could say a little more about the options going forward. Here you have these radically different systems. If we were in a less contentious environment with China, is there any imaginable path to some kind of compromised compatibility?

— I mean, I've been thinking about that. And that to me is the critical question. And I don't, the problem I have is I don't see a compatible approach that kind of, if you go back to that trilemma structure that basically extends hyper globalization in some way, and builds a global system well. That's just been exacerbated by recent events. I mean Russia's intrusion into and attacks on Ukraine kind of point out. A couple of people, Ash Carter, former Secretary of Defense, and I were talking, and he said globalization is dead. And I'm not sure it's that simple because of the integration that is in place, but it's starting to break down. I think people will pull supply chains increasingly back towards home countries. You'll see increasing national sovereignty focus. And what that means is if I had to predict, the likely outcome is a more, the more likely outcome is a splintered internet, where you have nation state borders still playing a big role in defining what happens within countries. And the question is how small or how large those different splinter nets are. I think you'd need to, one thing that could be compatible but still problematic would be a larger European, US, North America kind of consortium building standards, and then internet consistent with democratic values. It creates major problems, if you will, for firms in that context, because if you look at the size of the Chinese market, which is, I tried to show with some of those pie charts, firms are gonna have major issues if they can't operate in some of those markets that may have alternative approaches to the internet and a new IP blockchain kind of structure and that's troubling. And, if you want to know the truth, that's kind of where I am with the project in terms of, can we think of some alternatives here and approaches that can help address that, what the question you've asked. So I know that's not a very fulfilling response, but it's the best I have at the moment.

— Thanks. We've got a question from Mark Dallas. He says, what's the relationship between the ITU and the multi-stakeholder SDOs? My impression was that the SDOs are more important than ITU and the internet. Also, ITU sets broad parameters for 5G, but 3GPP is where tech specs are set and they have super majority voting, I believe. He says our research team is looking at these topics too.

– So, that's one of the things that's interesting if you look at China and Russia. They don't like having entities independent of governments, setting protocols, making decisions. And so Mark is exactly right that historically, the multi-stakeholder approaches that are primarily private sector entities have been the driving force. And what you're seeing is potentially an inflection point where China and Russia, China in particular, are trying to pull some of that into bodies like the ITU, increased government engagement through 3GPP and tried to get more kind of national control. There was a joint statement when Putin visited Xi Jinping in China and the joint statement was long, but on this part of it, it basically emphasized the importance of nation state sovereignty, the importance of nation states and defining a lot of these different internet standards and protocols, digital technology protocols and standards, and that's their model. So it's gonna be interesting to see how it plays out over time and whether they, how that historically, like I said, a lot of the multi-stakeholder kind of approaches you had, it was kind of who showed up. And I saw this from my days at AT&T. They were mostly engineers and they were engineers who genuinely just wanted to make the system work. Well, you didn't kind of have the degree of political overtones that you're getting today. And it wasn't complicated even when I was running international. You know, obviously I wanted, if you picked up a phone in Boston or New York, and wanted to call Tokyo or Singapore, you wanted the connection to work, right? So these were fairly technical meetings focused on interconnection, interoperability, things like that to make the system work. And that obviously has changed pretty dramatically. So Mark, I think you're right. I mean and the question is how will this play out over time.

– On the question of how will that play out over time, Hong Shen asks, can you predict the immediate future development of 5G and 6G technology? Will China win the competition against the US? I think that question's an opportunity to kind of define the resources of the two sides or the multiple sides and the structure of the game.

– Yeah, I mean, so first of all, back from a standard setting perspective, you've got a huge effort by China across multiple technologies that they've identified as critical for the future. And they put 5G and actually ultimately 6G in that category and their general, as a country, their general perspective is that they need to lead in the development of the standards and the development of that technology. And so, I mentioned it earlier, but you know, Huawei is a private company, if you will. And I've looked at their annual report and tried to figure out a bit of their funding structure. And that funding structure has a lot of PRC kind of annotations on it. And so I don't really know the funding structure. I haven't dug into it enough yet to really understand it. But clearly this is in my mind, an industrial policy approach where the state is integrating with Huawei and Huawei is aggressively bringing forward that agenda. And you just

don't see that same kind of structure within the Western capitalist democracies. And so I do think puts a bit of the thumb on the scale for China, unless there is an aggressive and appropriate response from the West. Qualcomm is a market leader, but can it sustain that is a really open question. And I'd be curious, Bill, to hear your view. I mean, I know you've thought about this a little bit, maybe a lot, but I'd be curious your take on this.

— I'm not sure I have a lot to add at this point. The West has certain shared values and advanced technology standards. China just has scale of the market and direction. It's kind of a rock, paper, scissors game, which makes it very complicated to analyze.

— Right, right. Yeah, I mean I think China is somewhat conflicted in the sense of it is protecting national sovereignty and how much of it, of that can it do in a somewhat isolated manner? And what are the implications of it tries to do that of operating in a global economic system. And if you look at some of the activities, it's not just standards, if you will, but in a global context, but it's also like, I think you'll increasingly try to see them try to pull a lot of what has historically been things that have come from outside of the country, bring it in house, if you will. So their dependence on other countries for whether it's chips, semiconductors, or other kind of technology, I think they're gonna invest heavily to try to bring that capacity inside. It's a way of potentially redacting themselves a bit from this trap of the trade-off between hyper globalization and national sovereignty. And I think you'll see a little bit of the same thing with the United States. The natural, the kind of centripetal forces are not just from the technology and standards, but from other events occurring in the world. Like the Russian invasion of Ukraine are forcing people to think about how do you build resilience into your system? And building resilience potentially requires you to suffer some cost of not operating in a fully global system, but having a more resilient system when there are crises or other events that happen.

— The American dilemma is that if we retract into ourselves, the big market is in China and other people like the Japanese and some Europeans will rely on the China connection for competitiveness and our firms lose scale and potentially lose.

— Exactly right.

— The Chinese dilemma is they want to be self-reliant in all major modern technologies. At the same time they want free access to export markets and to incoming direct investment with technology. And it would be kind of irrational for the competitors to accept that. So each system has a crucial flaw.

— Right. Well, if you think about it, we talk about, again through a

somewhat myopic lens, we talk about network effects and the impact that has on social media companies in the United States. If you carry that logic to the next level, there is an argument that says their network effects on a global basis, right? That's the dilemma. It's a version of what you're saying though. Can I retrench a bit back to my country and is that sustainable in a world where there are network affects potentially at the global level? Who knows? I think it's really problematic. And I do think there are global network effects and this alternative splinternet, alternative standard structure may break down some of those global network effects in a way, but then it leads a highly fragmented global structure.

— Okay, well, thanks to the Fairbank Center asked me to convey his gratitude. This has been a marvelous dive into the large political and economic issues raised by a very technical subject. And you made a point of saying you weren't a traditional academic. I think that's exactly where the value is in this session. So thank you very much.

— Thank you for having me. I really appreciate the opportunity to talk. If people have interest, you can reach out through Bill or through the center, and I'm happy to talk. So I appreciate the opportunity and thanks.

— Bye for now.