

Attorney General William P. Barr Delivers the Keynote Address at the Department of Justice's China Initiative Conference  
Washington, DC

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Thursday, February 6, 2020

***Remarks as Prepared for Delivery***

Thank you, Jim Lewis, for that kind introduction, and thank you for hosting this event.

My original career goal was to go into the CIA as a China expert, and so I focused on Chinese studies for my BA and MA at Columbia University. I remember in one of my Government classes, we were having a debate as to which foreign adversary posed the greatest long-term threat – Russia or China.

I recall the observation of one of my classmates in arguing that it was China that posed the greatest threat. He said, “Russia wants to conquer the world. We can deal with that. China wants to own the world. That is going to be more challenging to deal with.” There was a certain truth in that.

In 1972, our hope was that integrating China into the international economic system would encourage the People's Republic of China (PRC) to liberalize its economy, and that a free market and economic growth would gradually lead to greater political freedom for its citizens.

Unfortunately, economic liberalization has only gone so far. While individuals have been permitted some degree of economic freedom, the Communist Party remains in firm control of the economy. It is an architecture of state power, whose principal features are central planning, state-owned enterprises, and government subsidies.

Politically, the PRC remains a dictatorship under which the Communist Party elite jealously guards its monopoly on power. Marxism-Leninism and Maoism linger on as justification for Communist rule, which is authoritarian through and through.

The Communist party is willing to resort to harsh measures to repress any challenge to its one-party rule, whether it be suppressing religious organizations, rounding up and “re-educating” Uighurs, resisting efforts of self-determination in Hong Kong, or using the Great Firewall to limit access to ideas and penalize their expression.

For a brief time after the Cold War, we had indulged the illusion of democratic capitalism as triumphant, unchallenged by any competing ideology. That was nice while it lasted. But we are now in a new era of global tension and competition. China has emerged as the United States’ top geopolitical adversary, based on competing political and economic philosophies.

Centuries before Communism, China regarded itself as the Central Kingdom –the center of the world. Its ambition today is not to be a regional power, but a global one.

For China, success is a zero-sum game. In the words of then-General Secretary Xi, Communist Party members should “concentrate [their] efforts on . . . building a socialism that is superior to capitalism.” Such efforts, Xi claimed, would require Party members to “consecrate [their] entire spirit, [their] entire life,” for socialist ideals. The reward for this sacrifice, Xi promised, is “the eventual demise of capitalism.”

I mentioned my classmate's comment about China wanting to own the world because, today, I'd like to focus on the challenge of China's drive for economic and technological supremacy. But I am not suggesting that China's ambitions are merely economic, or that our competition with China is, at bottom, merely an economic rivalry.

The Chinese have long been a commercial people, but for China, purely economic success is not an end in itself. It is a means to wider political and strategic objectives. Throughout its long history, China has always used its economic strength as a tool to achieve its political and strategic objectives.

In 2015, the Chinese leadership launched its “Made in China 2025” plan — a sustained, highly-coordinated campaign to replace the United States as the dominant technological superpower. The dictatorship has mobilized all elements of Chinese society – all government, all corporations, all academia, and all of its industrious people – to execute seamlessly an ambitious plan to dominate the core technologies of the future.

This drive is backed by industrial policy involving huge investments in key technologies, massive financing, and subsidies in the hundreds of billions of U.S. dollars.

Unfortunately, it also involves industrial espionage and theft of technology and intellectual property, as well as forced technology transfers, predatory pricing, leveraging China's foreign direct investment, and strong-arm sales tactics in target markets, including the use of corruption.

Make no mistake about it – China's current technological thrusts pose an unprecedented challenge to the United States.

The stakes for the United States could not be higher. Since the 19<sup>th</sup> century, the United States has been the world's leader in innovation and technology. It has been America's technological prowess that has made us prosperous and secure. Our standard of living, our expanding economic opportunities for our young people and coming generations, and our national security all depend on our continued technological leadership.

In the past, prior administrations and many in the private sector have too often been willing to countenance China's hardball tactics. It has been this administration that has finally moved to confront and counteract China's playbook.

Today, I want to focus on two aspects of the challenge we face. The first is how China jumpstarts its technology initiatives by stealing our technology. Second, I want to explain why China's current focus on dominating 5G technology is of central concern.

The ability of totalitarian countries to engage in central economic planning can, at times, appear to be an advantage, especially when mobilizing the kind of technological blitzkrieg we see unfolding today.

The downside is that central planning suppresses technological innovation. Breakthrough ideas arise in free societies like ours, which have long led the way in cutting-edge technological development

The Chinese are trying to have it both ways. While orchestrating a centrally-planned campaign to dominate key technologies, they are attempting to capture the benefits of our free society by outright stealing our technology. The stealing of technology is not a sideshow. It undergirds and propels their efforts.

As John Demers, our Assistant Attorney General for the National Security Division observed, "China wants the fruits of America's brainpower to harvest the seeds of its planned economic dominance."

In 2018, the Department of Justice launched its China Initiative to confront China's malign behaviors and protect U.S. technology.

As the presentations earlier this morning demonstrated, investigations during the department's China Initiative have repeatedly shown how the PRC is using intelligence services and tradecraft to target valuable scientific and technical information held by the private sector and the academy. These cover a wide range of technologies, from those applicable to commercial airplane engines to renewable energy to new materials to high-tech agriculture. Since the announcement of the Made in China 2025 plan, for example, the department has brought trade-secret theft cases in eight of the 10 technology sectors China is aspiring to dominate.

In targeting these sectors, the PRC employs a multipronged approach: engaging in cyber intrusions, co-opting private sector insiders through its intelligence services, and using non-traditional collectors, such as graduate students participating in university research projects.

With respect to remote computer intrusions, for example, the department's indictment of APT 10 hackers in December 2018 outlined a global campaign, associated with the Chinese Ministry of State Security, targeting intellectual property and confidential business and technology information belonging to hundreds of clients of managed service providers worldwide.

Chinese theft by hacking has continued, and you should expect more indictments and prosecutions in the future.

Outside cyberspace, defendants pose as U.S. customers to avoid export controls, and recruit U.S. employees or co-opt insiders to steal trade secrets.

At academic and other research institutions, China uses “talent programs” to encourage the theft of intellectual property.

Finally, China complements its plainly illicit activity with facially legal, but predatory behavior: the acquisitions of U.S. companies and other investments in the U.S.

The department confronts these threats through the Committee on Foreign Investment in the United States and Team Telecom. As one example, earlier this year, based on a recommendation from Justice and other agencies, the Federal Communications Commission denied a license to China Mobile on national security grounds.

The PRC’s economic aggression and theft of intellectual property comes with immense costs. It has been estimated that the annual cost to the U.S. economy could be as high as \$600 billion.

The department will continue to use our full suite of national security tools to combat the threat posed by theft directed and encouraged by the PRC.

But, as the Director stressed, our ability to protect American technology will ultimately depend on a partnership with industry and the academy.

Now let me turn to a very concrete problem that confronts us today. It is the pivotal nature of 5G technology and the threat arising from the Chinese drive to dominate this field.

5G technology lies at the center of the technological and industrial world that is taking shape. In essence, communications networks are not just for communications anymore. They are evolving into the central nervous system of the next generation of internet, called the "Industrial Internet," and the next generation of industrial systems that will depend on that infrastructure. China has built up a lead in 5G, capturing 40 percent of the global 5G infrastructure market. For the first time in history, the United States is not leading the next technology era.

Much of the discussion on the dangers of allowing China to establish dominance in 5G has been focused on the immediate security concern of using communications networks that China can monitor and surveil. That is, in fact, a monumental danger. For that reason alone, we should mobilize to surmount China’s drive to dominate 5G. But the stakes are far higher than this.

It has been estimated that the Industrial Internet powered by 5G could generate new economic opportunities of \$23 trillion by 2025. If China establishes sole dominance over 5G, it will be able to dominate the opportunities arising from a stunning range of emerging technologies that will be dependent on, and interwoven with the 5G platform.

From a national security standpoint, if the Industrial Internet becomes dependent on Chinese technology, China would have the ability to shut countries off from technology and equipment upon which their consumers and industry depend. The power the United States has today to use economic sanctions would pale by comparison to the unprecedented economic leverage we would be surrendering into the hands of China.

It is important to understand how 5G will enable a revolution in industrial processes. Some Americans think that all we are talking about here is analogous to the shift from 3G to 4G in our wireless networks. But we are talking about a change that is far more fundamental than merely increasing download speeds for movies and websites.

The move from 3G to 4G meant moving from download speeds of about one Mbps up to speeds of about 20 Mbps. This increase made it possible to move the storage of data and some modest processing power off of devices and into “the cloud.” Even this modest evolution of the wireless business spawned wide new fields of innovation, applications, and businesses. Because the United States was the country that developed 4G, we were the country that captured most of the economic opportunity that flowed from that technology.

The jump to 5G is a quantum leap beyond this. We are now talking about multi-Gigabits per second peak rates for both download and upload. These fiber-like speeds, coupled with placing “Edge Computing” facilities closer to the users, means 5G is capable of extremely low latency – under 10 milliseconds. With this capacity, the tiniest devices can have virtually instantaneous interconnectivity, and access infinite computing power. With these characteristics, 5G becomes a real time, precise command and control system.

Devices of all kinds – some “smart,” some sensors collecting and transmitting data, and some actuators carrying out remote commands – can be dispersed and embedded in business and industrial equipment across a wide array of businesses, such as transportation, energy, finance, healthcare, agriculture, heavy construction, and so forth. 5G provides the command-and-control function for managing industrial processes.

As the world of 5G unfolds, we will be seeing not just smart homes, but smart farms, smart factories, smart heavy construction, smart transportation systems, and so forth. And a host of new emerging technologies, in addition to AI, will become interwoven with and dependent upon 5G and the Industrial Internet, including for example: robotics, the Internet of Things, autonomous vehicles, 3-D printing, nanotechnology, biotechnology, materials science, energy storage, and quantum computing.

China has stolen a march and is now leading in 5G. 5G is an infrastructure business. It relies on a Radio Access Network (RAN). China has two of the leading RAN infrastructure suppliers: Hwawei and ZTE. Together, they have already captured 40 percent of the market, and are aggressively pursuing the balance.

Huawei is now the leading supplier on every continent, except North America. The United States does not have an equipment supplier. China's principal competitors are the Finnish firm, Nokia (with a 17 percent share) and the Swedish firm Ericsson (with a 14 percent share).

The Chinese are using every lever of power to expand their 5G market share around the globe. It is estimated that the total market for 5G infrastructure is \$76 billion. China is offering over \$100 billion in incentives to finance customers' purchases of its equipment. This means that the Chinese can offer customers to build their 5G networks for no money down.

In an infrastructure business like 5G, scale is critical. The business requires huge investments in R & D, as well as very high capital costs. The larger a company's market share, the better it can afford these costs. Competitors facing a shrinking addressable market find it harder to sustain the levels of investment required to stay competitive.

Chinese companies start with the advantage of the largest domestic market, giving them instant scale, and as they add to this around the world, they will be able to invest more in their technology.

The more China gains ground as a supplier of 5G infrastructure, the more it will gain ground in all the constituent technologies that undergird 5G infrastructure.

5G rests on a stack of technologies, including semiconductors, fiber optics, and rare earth and materials. China has moved to domesticate all these elements so it will not be dependent on foreign suppliers.

Semiconductors provide a good example of the ripple effect of Chinese leadership in 5G. China now consumes over half of the world's semiconductors. China has now started to replace U.S. semiconductors with its own. Its scale in this field will permit it to make the investments needed close the current quality gap. As China builds its scale in the semiconductor industry, it will place substantial pressure on alternative suppliers. And, of course, semiconductors are indispensable to a wide range of technology and industries apart from 5G.

China's success in 5G infrastructure is also translating into advantages in a range of new technologies associated with 5G. AI is a good example. As China captures more and more of the data generated by 5G, its AI products become better.

Within the next five years, 5G global territory and application dominance will be determined.

The question is whether, within this window, the United States and our allies can mount sufficient competition to Huawei to retain and capture enough market share to sustain the kind of long-term and robust competitive position necessary to avoid surrendering dominance to the Chinese.

The time is very short. We and our allies have to act quickly. While much has to be done, it is imperative to make two decisions right away.

First, we have to deploy the spectrum necessary for a robust 5G system in the U.S. This is the mid-band spectrum called the “C-band.”

The FCC has been working hard to get the C-band spectrum out into the market through an auction. It is critical to get this done within the next few months. Even then, the U.S. will need 400,000 base stations to cover the nation. This could take a decade or more to build out.

Recently, there have been interesting proposals to jump-start U.S. 5G by also making available L-band spectrum for use in tandem with the C-band. By using the L-band for uplink, we could dramatically reduce the number of base stations required to complete national coverage. It has been suggested that this could cut the time for U.S. 5G deployment from a decade to 18 months, and save approximately \$80 million. While some technical issues about using the L-band are being debated, it is imperative that the FCC resolves this question.

The bottom line is that we have to move decisively to auction the C-band spectrum, and bring to resolution the issues over L-band. Our economic future is at stake. We have to bear in mind that, given the narrow window we face, the risk of losing the 5G struggle with China should vastly outweigh all other considerations.

Second, we have to make a decision on the “horse” we are going to ride in this race. Who is the 5G equipment supplier, or suppliers, that we will rely on to compete against Huawei around the globe, win contracts from operators, and blunt Huawei’s drive to domination?

It's all very well to tell our friends and allies that they shouldn't install Huawei, but whose infrastructure are they going to install?

If we and our allies – and other countries that do not want to put their economic fate in China’s hands – are not going to install Huawei’s infrastructure, we have to have a market-ready alternative today.

What is the customer looking for after all? What is the operator looking for in moving from 4G to 5G? It is a one-time decision. It is a big decision. You cannot afford to make a mistake, you need to know you are buying a reliable system that will perform, because you don't have the luxury of tearing it out down the road. And, you need a system that will allow you to seamlessly migrate your installed 4G base to 5G. You need to know that your supplier has staying power – they are not here today and gone tomorrow. They will be there for the long-haul. Those are the products that are necessary to win contracts today.

There are only two companies that can compete with Huawei right now as 5G infrastructure suppliers: Nokia and Ericsson. They have quality, reliable products that can guarantee performance. They have proven successful in managing customers' migration from 4G to 5G. The main concern about these suppliers is that they have neither Huawei's scale nor the backing of a powerful country with a large market, like China.

Some propose that these concerns could be met by the United States aligning itself with Nokia and/or Ericsson through American ownership of a controlling stake, either directly or through a consortium of private American and allied companies. Putting our large market and financial muscle behind one or both of these firms would make it a more formidable competitor and eliminate concerns over its staying power. We and our closest allies certainly need to be actively considering this approach.

Recently, there has been some talk about trying to develop an Open RAN approach, which aims to force open the RAN into its components and have those components to be developed by U.S. and western innovators. The problem is that this is just pie in the sky. This approach is completely untested, and would take many years to get off the ground, and would not be ready for prime time for a decade, if ever.

What we need today is a product that can win contracts right now – a proven infrastructure that network operators will make a long-term commitment to today. In other words, we need a product that can blunt and turnaround Huawei's momentum currently.

As a dictatorship, China can marshal an all-of-nation approach – the government, private companies, and academia acting together as one.

We are not able to compel that. When we have faced similar challenges in the past – such as World War II, and Russia's Cold War technological challenge – as a free people we rallied together. We were able to form a close partnership among government, the private sector, and academia. And through that cooperation, we prevailed.

Unfortunately, the cooperative bonds and sense of purpose we were able to muster in the past are harder to call on today.

And, in the 1950's, we had the Sputnik moment that helped galvanize the nation and bring unity to our response. We have not seen a similar catalyst today.

If we are going to maintain our technological leadership, our economic strength, and ultimately our national security, we need the public and private sectors to work together and come shoulder to shoulder.

To our private sector friends, I would say that appeasing the PRC may come with short-term benefits, but I urge you to question the longstanding assumption that promises of

market access are worth the steep costs. The PRC's ultimate goal is to replace you with a Chinese company.

University and think-tank colleagues, do not allow the theft of technology under the guise of academic freedom. Do not allow the PRC to dictate your research or pressure you into ignoring diverse voices on controversial topics. Consider whether any sacrifice of academic integrity or freedom is worth the tradeoff.

To our allies, we applaud your efforts to stand up to China's economic power. But we must do more, and act collectively. Let us not forget our collective economic influence and power.

Throughout history, free societies have faced regimented adversaries. At critical junctures, they have achieved the unity and purpose necessary to prevail, not because they have been compelled to do so, but because they freely chose to do so. We must make that choice today.

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The year 2020 marks the 150th anniversary of the Department of Justice. Learn more about the history of our agency at [www.Justice.gov/Celebrating150Years](http://www.Justice.gov/Celebrating150Years).