Geopolitics and Technology

US-China Competition:
The Coming Decoupling?

By Paul Triolo

SYNOPSIS

Locked in a long-term competition around advanced technologies, the US is using outdated policy tools to slow China's rise as a technology power. A worst case scenario: decoupling of the two countries' technology, financial, and economic sectors.

COMMENTARY

THE UNITED States and China are now clearly locked in a competition over dominance of the technologies of the future. At the same time, some elements of key government organisations on both sides are pushing for a major decoupling of very intertwined supply chains and value generation ecosystems that have developed over more than 30 years.

How did we get to the point where zero sum competition and some level of decoupling are now widely accepted in government, academic, and business circles, and companies on both sides are acting in ways that will both heighten the competition and accelerate the decoupling? All this in several short years?

Factors Behind US Policy on Chinese Tech

Several parallel processes came together to produce this, which is happening in some sense organically, with no clear long-term thinking in either capital that accounts for the economic and national security costs, and second-, third-, and fourth- order effects.

US policy towards China on technology issues has been driven by four major factors, some stemming from long standing concerns, and others coming out of recent developments around advanced technologies, where Chinese firms are suddenly both a supplier and collaborator and a new competitor.

Industrial policies and trade. First, there are long-standing concerns about Chinese industrial policies, market access restrictions, and illicit acquisition of technology via forced technology transfer through joint venture requirements or through cyber theft of intellectual property and trade secrets.

These issues extend all the way back to China's WTO access in 1991 but have been exacerbated by China's rise as a technology power. They are all part of the ongoing trade negotiations and formed the central arguments in the US Section 301 investigation into China's trade practices launched in August 2017.

Technology control. Second, growing concern in the Obama administration that Chinese firms were structuring deals to avoid US investment reviews, and the perception that Chinese venture capital firms, sometimes with government backing, were flooding Silicon Valley in search of technology investments, led to two new legislations passed last year.

These are the US Foreign Investment Risk Reduction Modernisation Act (FIRRMA), governing investment reviews under the Committee for Foreign Investment in the US (CFIUS), and the Export Control Reform Act (ECRA). These two pieces of legislation expand the range of deals that the US government can review and block, and the range of technologies in these deals that would trigger a mandatory review.

Security of Supply Chains

Supply chain security. Third, growing concern in the US government, particularly the Department of Defence, about over-dependence on China-based ICT supply chains has generated major policy efforts to determine how to secure supply chains going forward, particularly for hardware and software used by the military and in critical infrastructure.

Concern over Chinese company dominance over supply chains for next generation 5G networks have been a critical driver of this concern, and led to a May executive order from the Trump administration calling for new rules to shore up ICT supply chain security. Many other supply chain security initiatives are underway within the US government, focused on both federal procurement and critical infrastructure.

Struggle for dominance of the "technologies of the future". Fourth, China has launched ambitious national plans such as Made in China 2025 and the National AI Development Plan in 2017, along with major investments in exascale and quantum computing, coupled with Huawei's major role in 5G. US government officials have been alarmed that Beijing is seeking to undermine US dominance in these technologies that in part underlies US military superiority, or could use technologies such as 5G against the US in the event of a conflict.

Hence there is a growing narrative that in these cutting edge technologies, the US and China are locked in a zero-sum game, where the winner will achieve military and potentially economic dominance, at the expense of the other.

BRI & 'Techno-authoritarianism'?

There is a recent twist to this concern within Washington policy circles: the sense that the current nature of the Chinese political system will inexorably lead Beijing to use these technologies in ways that are inimical to Western values, and export some type of "techno-authoritarianism" abroad, using the Belt and Road Initiative (BRI). The BRI can be a wedge to spread Chinese technologies, standards, and practices to increase China's influence at the expense of US and Western values (see Vice President Pence October 2018 speech here).

Hence the recent blacklisting of eight leading Chinese AI firms for their alleged support of public security organs in restive Xinjiang province that are using facial recognition to monitoring minority Muslim populations. Finally, US fears are also heightened by the rhetoric coming from Beijing on the need for more military-civilian fusion, leading US officials to conclude that any gains in these technology areas will quickly accrue to China's growing and more technically sophisticated military.

These primary factors tied to an incipient techno-nationalism are driving a slow but accelerating process that is inexorably decoupling the economic, financial, and technology domains, from Beijing to Washington, and from Silicon Valley to Beijing, Hangzhou, and Shenzhen. There are forces on both sides that increasingly buy into the zero-sum game on advanced technologies.

The ultimate prize in the view of some hardliners on both sides is power in tomorrow's international order. Control of the international marketplace is also at stake, because advanced technology will help run the global economy. Technology supply chains and dependencies will anchor future alliances and trading relationships.

Technological Lead and National Security

Also, leadership in technology will give an edge on the national security front. The Trump administration holds that the recently dubbed US national security innovation base and its military applications are central to protecting the country's future security. Chinese leaders, similarly, believe that civilian technological advances go hand-in-glove with leaps in the military sphere.

The implications for global innovation supply and value chains if this trajectory continues are profound. *First*, the beneficial feedback loops produced by more than 30 years of technology cooperation and *supply chain optimisation will be disrupted*.

But the arguments in favour of decoupling often take too narrow a view of the potential risks and costs. They tend to focus on the potential for China to commit espionage or sabotage by embedding backdoors in Western technology products or network infrastructure, or assume that China is on the verge of vaulting past the US in key fields like AI, quantum computing or advanced semiconductors.

The China hardliners also fail to account for how today's global innovation ecosystem actually works in Silicon Valley and other tech hubs in Europe and Asia. US tech companies, in particular in the semiconductor sector, are concerned that actions like blacklisting so many leading Chinese tech firms, from ZTE to [Huawei](), to supercomputer firm [Sugon](), AI leaders [Megvii, Sensetime, and IFlytek](), are already leading Chinese and firms in other countries to "design out" US technology.

This has huge implications for future US leadership in innovation — China accounts for 36% of the revenue of US semiconductor producers, and much of this is ploughed back into R&D, driving further technology breakthroughs. The semiconductor supply chain is the most globalised in the tech industry, and major disruptions would impact other related industries that are increasingly based on chip advances, such as the telecommunications, automotive, and aviation sectors.

Tech Cold War and Global Security

Second, a raging US-China tech cold war could also have *negative effects on global security*. Decoupled technology spheres would further reduce prospects for a coordinated global approach to salient issues such as AI ethics, safety, and security, and attempts to limit the use of AI in military applications-such as lethal autonomous weapons systems.

Less communication between leading-edge firms and researchers means less visibility for both sides into developments in a sensitive sector. This could increase the risk that either the US or China makes an unanticipated breakthrough in a strategic technology such as quantum computing.

The risk here is not so much a breakthrough in quantum computing or artificial general intelligence itself, but the odds that progress catches the other side off-guard, potentially undermining military systems and other essential encryption with immediate, destabilising effects on global security.

Third, the temptation for both sides to engage in *malicious cyber activity* would also increase during a protracted technology cold war between two very capable cyber powers; there would be more willingness to increase the use of offensive cyber operations to achieve political and economic objectives. The risk of unchecked escalation in cyberspace spilling out of the virtual world would be high, potentially leading to unintended military conflict.

Fourth and finally, third countries will also face *increasing pressure to choose sides* and face tough decisions about which technology ecosystem to embrace, straining existing alliances and trading relationships. The US is forcing this point via its nearly year-long campaign to persuade European and other major players including Brazil and India to ban Huawei from their 5G networks. This is a preview of what would come under a world of accelerated decoupling.

A permanent and deep US-China technology rift would substantially restrict beneficial exchanges of technology, investment, and human capital that drive new technology advances — this will hurt innovation globally, leaving everyone worse off.

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