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TO: Technology Policy Strategists
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SUBJECT: A coherent framework for technological competition with China

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This June, the Scowcroft Center for Strategy and Security and the Global China Hub convened experts and officials in a private workshop to discuss technological competition between the United States, its allies and partners, and their biggest global competitor, China. The workshop explored the stakes in this competition across economic, military, and other domains, as well as the challenges facing Washington and its allies and partners with respect to China's rising technological capabilities. This memo draws from insights gleaned during the workshop to give policymakers a better understanding of this competition, it stakes, and the strategic choices facing the United States and its allies and partners.

Strategic context

Over the past decades, the United States and its allies and partners have built a rules-based international system. Although not perfect, this system has enabled the expansion of prosperity for the United States and the world. This system is under increasing strain from multiple directions. As the world's foremost rising autocratic power, China under Xi Jinping intends to influence and remake the system into one that is less conducive to democratic states' interests.

Policymakers in the United States and elsewhere have yet to fully process the multiple dimensions of this technological competition. Although there is much stress on some aspects, other pieces are either underappreciated or ignored altogether. There is much activity without a clear direction.

Technology is a critical domain for this global competition and an important example of how US and allied policy approaches vis-à-vis China have yet to cohere into a strategy. While there is widespread acknowledgment that technological competition with China is a central feature of global geopolitics, and while much there is much concern about China's growing strengths in the technological domain, there is neither a consensus around the tools to be utilized nor around a unified strategic direction.

Toward a coherent framework

There are at least six dimensions of technological competition. To sustain a long-term advantage over a rival nation or bloc, policymakers should seek to address each of these dimensions within a comprehensive technology policy framework.

1. **Foresight**. In an ideal world, a government's technology policy framework would be informed by a robust foresight apparatus. It would be dedicated to identifying and assessing the most important global trends and uncertainties surrounding technological change into the future. Such a capacity would inform policymaking at every stage, from strategy development through the legislative process and bureaucratic implementation. It would provide nonpartisan, nonideological, unbiased, world-leading, and routine analyses of technology trends and developments to policymakers and practitioners within and

(selectively) outside the government.

A tech foresight capacity would be built to enhance understanding and develop deeper insight about technology competition with China: critical trends analysis (tracking and assessment of tech-related trends in, e.g., investment patterns or patent filings); critical uncertainties analysis (monitoring of critical technology breakthroughs in, e.g., quantum computing or biotechnology); robust scenario development regarding how tech-based trends and uncertainties might shape alternative futures for the United States, its allies and partners, and China. Such a tech foresight capacity must be given the credibility and mandate to engage important stakeholders across government (policymakers, analysts, etc.).

2. **Goals**. The simplest piece of a robust tech policy framework is also the most difficult to both define and build a consensus around: What are the framework's goals? Two questions to consider when determining goal setting include:

    - Is the framework to ensure that a particular international system of rules be maintained, within which states compete on a level playing field?
    - Is it to ensure that one state or a bloc of states retain or take supremacy in the technology domain?

    The goals that are embedded within each of these questions are very different. The first asserts that the state's primary goal is to support a particular international technology regime focused on fair competition, with rules related to trade, intellectual property, standards, and more. The presumption is that under a fair technology regime, the United States and its allies and partners will be able to outcompete others, including China, assuming this system is indeed a level playing field. In contrast, the second asserts that the state's primary goal is technological primacy over all others, regardless of the means for achieving the outcome. Any set of means, therefore, including punitive measures and a resort to manipulation or outright dismissal of an international system of rules, are justified given this goal.

    Although it is important to point out that these two goals intersect, the reality is that the intersection is an incomplete one.

3. **Strategy**. The United States government has many policies that, bundled together, shape its technological competition with China. But it is hard to make the case that these amount to a coherent strategy, one that is organized around a clear set of goals and informed by foresight. There is no vehicle within the US government that is authorized to formulate a long-term technology competition strategy for the United States, none that have bipartisan backing in Congress, and none that spans and includes its allies and partners. Absent such a strategy, the United States and its allies and partners are in a handicapped position in their technological competition with China.

4. **Domestic policies**. For the United States and its allies and partners, competing successfully against China requires a tricky balancing act involving competing domestic priorities. Moreover, this balancing act must be replicated across the range of domestic

policies that together constitute a national innovation ecosystem. Failure to calibrate these trade-offs will result in an ecosystem that is not globally competitive or exposes the country to security risks, or both.

Apt examples include competition and data security policies, which feature the need to balance private sector-led innovativeness against security considerations. Over the past two years, China appears to have chosen the latter over the former, given the government's crackdown on its tech firms, including Tencent and Alibaba, on both antitrust and data security grounds. The United States and Europe are debating whether and how to revise policies in both areas, with as yet no clear resolution.

Talent acquisition and development is another critical domestic policy consideration. Although the United States has had a large advantage in this area for decades, given the size of its university system and attractiveness of its tech sector, China has made rapid strides through boosting its own educational system, including stress on higher education, to the point where it is producing nearly as many STEM graduates as the United States. The critical pieces of America's talent system need revamping, ranging from migration and visa policies to education and training systems. Here, too, policymakers must reconcile an openness to foreign talent against the security considerations that come with transnational labor flows in sensitive technical areas.

5. **Foreign policies**. Technology competition is one piece of a larger foreign policy agenda, which includes broader diplomatic relations with both China and the rest of the world. Any strategy to navigate technological competition with China must recognize that China, too, is an actor on the global stage and as such is engaged in a longer-term iterative dialogue with not only the United States and its allies and partners but also with every other country in the world. For example, there is a real downside risk to imposing harsh punitive measures against Chinese technology firms, particularly if done so unilaterally. Although unilateral instruments have a role to play at times (in the context of human rights abuses in Xinjiang where the US wants to make a moral point), their frequent or arbitrary use only weakens these tools and leaves vast gaps through which China can continue pursuing its tech dominance goals. Without a multilateral approach, China remains able to source technologies and components from third-party countries, thereby neutralizing US attempts to impede China's tech progress.

   Trade policies follow a slightly different logic. For decades, the United States has been a primary enabler as well as benefactor of open trade policies, which by extension include trade in technological goods and services. Yet the United States no longer pursues robust trade agreements at global scale and now treads cautiously in regional contexts as well. China, in contrast, has fewer qualms about crafting or influencing trading regimes that should over time confer economic and diplomatic advantage. For example, China now is the dominant economy within the Regional Comprehensive Economic Partnership (RCEP), a fifteen-member Asia-Pacific free trading bloc created in 2020. The Biden administration is now playing catchup, a consequence of the 2017 US withdrawal from the Trans-Pacific Partnership. By failing to participate in robust trade agreements, the United States effectively reduces its ability to access important foreign markets on its own terms and more importantly influence over other trading rules that facilitate pursuit of its own interests. Absent a course correction, over the long run the United States

could find itself in a revamped international trading system that serves China's interests, in turn reducing American competitiveness in the technology domain.

6. **Technology prioritization**:

   There is a distinction between building a national tech-innovation ecosystem that is designed to outcompete other states, including China, and prioritizing development of specific technologies to be global leader in their development. In 2015, China announced a Made in China 2025 program, an industrial strategy designed in part to announce China's intentions to lead the world in specific technology arenas, ranging from information technology to aerospace technologies to materials science to robotics and more.

   The US government does direct public investment toward specific technologies and otherwise encourages federal government activity in their development but falls short of doing so as part of an overarching industrial strategy. The White House's Office of Science and Technology, for example, currently emphasizes the importance of federal investment in and support for vaccine development, clean energy technologies, artificial intelligence, biotechnology, clean energy technologies, microelectronics, and more.

   A question for the United States and its allies and partners is whether to do much more of the same through deliberate industrial strategy, one that embraces specific, targeted breakthrough technologies – quantum computing, for example – and that provides the financial and institutional resources to enable a more structured and long-term focus on those technologies.

Conclusion

While the administration has succeeded in framing the strategic agenda, the summit cannot just be a symbolic exercise. It needs to produce concrete action and set the stage for meaningful outcomes. Technological competition with China is complex, involving at least six relevant dimensions. Successfully navigating this competition will require that policymakers in Washington and in the capital cities of key allies and partners collaborate along these dimensions and, to the extent practicable, harmonize strategies and policies where possible. In many instances, the tools required to compete with China already exist and may require tweaks, more resources, more funding, and other updates. The bottom line is that the United States and its allies and partners will need to embrace creative, expansive, and strategic thinking to deal with the realities posed by China's technological ambitions and capabilities during this century.

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