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WHY THE U.S. SHOULD PRIORITIZE SECURITY IN ITS 5G ROLL OUT

James Lee

Summary

5G technology promises to transform practically every sphere of life, from smartphones and self-driving cars, to remote surgery and virtual reality. Policies related to the rollout of 5G in the United States have tended to focus on mitigating security risks, but does protecting security come at the cost of expanding U.S. global influence—or does it simply cost too much? This policy brief by IGCC postdoctoral research associate James Lee analyzes the three main criteria for deciding what a “good” 5G policy should look like—security, global influence, and efficiency—and recommends that the United States’ 5G strategy prioritize security first, influence second, and efficiency third.

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Introduction

Fifth-generation (5G) mobile broadband telecommunications is critical for the future prosperity and security of the United States. In government, business, and academia, analysts have emphasized the need for the United States to invest in this transformative technology, to prepare the way for the Fourth Industrial Revolution and the economy of the future.¹

Smartphones, virtual reality, augmented reality, automation, the Internet of Things (IoT), self-driving cars, healthcare, and defense will all be transformed by this technology. And how it is rolled out matters, with economic, political, and security implications for the United States, its allies, and its competitors.

In this context, there has been a heated debate about how the United States should roll out 5G—a great deal of criticism of existing policies and a great number of ideas for new policies. Is the Department of Defense’s control of mid-band spectrum causing the United States to fall behind? Is the United States’ overriding concern with maintaining the security of its 5G network causing it to lose in the “race” with China? Should the United States adopt an industrial policy for 5G? Should the United States government acquire a controlling stake in Nokia and Ericsson?²

These questions have been raised, debated, and analyzed continually over the last few years. They revolve around different ideas about a “good” 5G policy should look like.

This policy brief analyzes three schools of thought, each with its own criterion for measuring the success of the United States’ 5G rollout: security, influence, and efficiency. Security is about making sure that 5G networks are safe from disruption and surveillance; influence is about making sure that America leads in 5G; and efficiency is about making sure that the United States’ policies for deploying 5G don’t become wasteful or expensive. U.S. policy has to address the tradeoffs between these goals and prioritize what matters most. This policy brief reviews each of these schools of thought, and argues that the United States’ 5G strategy should prioritize security first, influence second, and efficiency third.

1 [“5G: The Fabric for Society.”](#) June 2018. *Qualcomm*.

2 [“U.S., allies should consider Nokia, Ericsson investments to counter Huawei: Bari.”](#) February 6, 2020, *Reuters*.

Which Priority Should Guide 5G Rollout?

SECURITY

The dominant school of thought in the United States emphasizes the need for security in the rollout of 5G. Indeed, most existing 5G policies focus on protecting national security. By this criterion, a successful rollout minimizes the risk of an unauthorized actor—state or non-state—gaining access to sensitive information or disrupting communications networks. The security imperative can be seen in the Pentagon’s resistance to relinquishing its ownership of coveted slices of the mid-band spectrum, as well as in current discussions about supply chain security.³ The focus on protecting U.S. national security is also what led the United States to exclude Chinese companies like Huawei and ZTE from its 5G networks. The fact that this decision has been so widely supported in the United States, and has seemed so obviously necessary to so many policymakers, shows how dominant this school of thought has become.

INFLUENCE

The main challenge to existing 5G policies comes from those who think 5G should be used as a way to promote American power, especially commercial and geopolitical power. Those focused on U.S. commercial interests emphasize the need to secure American leadership in the telecommunications industry, while those concerned with geopolitics emphasize the need to secure American leadership in the world.⁴ Analysts concerned with advancing 5G as an expression of American power criticize existing policies for being too slow, too cumbersome, or too laborious. If the Pentagon doesn’t share its slice of the spectrum, the thinking goes, American carriers will soon be outpaced by Chinese carriers; if the Federal Communications Commission doesn’t allocate more spectrum to private carriers, the rollout of 5G will be delayed.⁵

3 On debates surrounding spectrum allocation, see Milo Medin and Gilman Louie, April 3, 2019, [“The 5G Ecosystem: Risks and Opportunities for DoD,”](#) *Defense Innovation Board*, p. 3; John Hendel and Bryan Bender, February 22, 2020, [“The Pentagon Is Sitting on a Chunk of Valuable Airwaves. Why?”](#) *Politico*. On discussions of supply chain security, see [“5G Supply Chain Security: Threats and Solutions,”](#) March 2020, U.S. *Senate Committee on Commerce, Science, and Transportation*; [“Information and Communications Technology Supply Chain Risk Management Task Force Year 2 Report: Status Update on Activities and Objectives of the Task Force,”](#) December 2020, *Cybersecurity and Infrastructure Security Agency*; and Shane Tews, April 2020, [“Telecom supply chain security and 5G: Highlights from my discussion with David Stehlin,”](#) *American Enterprise Institute*.

4 See [“Accelerating 5G in the United States,”](#) March 1, 2021, *Center for Strategic and International Studies*; and Nicol Turner Lee, April 2020, [“Navigating the U.S.-China 5G Competition,”](#) *Brookings Institution*.

5 Medin and Louie, [“The 5G Ecosystem: Risks and Opportunities for DoD.”](#)

The focus on promoting American geopolitical influence often leads to use of the analogy of a “race” to 5G supremacy between the United States and China. Drawing on ideas from the “power transition” theory of the causes of war,⁶ the theory says that failure on the part of the United States to lead the development of the technologies of the future will cause the United States to decline in prestige, power, and influence. If the United States steps aside, China will step in. This kind of argument has been made about a wide range of emerging technologies, but 5G has been the most prominent among them.

EFFICIENCY

A third school of thought places efficiency, or cost-effectiveness, at the center of 5G deployment. This criterion has been less prominent in the United States than among European countries, which have used Huawei’s low-cost equipment to build out their 5G networks.⁷ But questions about the cost of 5G rollout have appeared among U.S. analysts in their criticisms of current U.S. policies. The Defense Innovation Board, for example, has criticized the United States’ current approach to spectrum management for forcing carriers to focus on mmWave deployment: “this creates a high infrastructure cost, as a mmWave network would require densely populated base stations throughout a geographic area to ensure uninterrupted connectivity.”⁸

Considerations of cost are also likely to factor into debates about proposals for 5G industrial policy. For example, a recent report by the Center for Strategic and International Studies proposes what effectively amounts to a 5G industrial policy. Although it opposes outright state ownership or nationalization, the report criticizes “errors over the last 20 years to not support a strategic industry.”⁹ To respond to potential critics of the proposal, the authors argue that the federal government should invest in research and development, and that “it is unrealistic to expect to compete with China without spending money.”¹⁰

6 A.F. K. Organski and Jacek Kugler, *The War Ledger* (Chicago: University of Chicago Press, 1980); Robert Gilpin, *War and Change in World Politics* (Princeton: Princeton University Press, 1981); Graham Allison. *Destined for War: Can America and China Escape Thucydides’s Trap?* (New York: Houghton Mifflin Harcourt, 2017).

7 Ellen Nakashima, May 29, 2019, “[U.S. pushes hard for a ban on Huawei in Europe, but the firm’s 5G prices are irresistible](#),” *The Washington Post*.

8 Medin and Louie, “[The 5G Ecosystem: Risks and Opportunities for DoD](#),” p. 8.

9 “[Accelerating 5G in the United States](#),” March 1, 2021, *Center for Strategic and International Studies*, p. 6.

10 *Ibid*, p. 7.

A Strategy for 5G

Each of the schools of thought discussed above makes compelling arguments about what a good 5G policy looks like, and how such a policy advances U.S. interests. Each interest—national security, global influence, and cost-effectiveness—matters, but there are tradeoffs among them, as exemplified most prominently in the debates about spectrum allocation.

The United States will be best served if its 5G strategy prioritizes concrete interests over abstract interests, and long-term goals over short-term goals. Maintaining a favorable balance of power vis-à-vis China serves U.S. interests, but in an abstract way: the global distribution of capabilities is a useful indicator of the United States' strategic position in great power competition, but it does not identify a specific challenge to the United States' prosperity, welfare, or democratic system. On the other hand, preventing surveillance, the exfiltration of data, and the disruption of telecommunications networks is a concrete interest of the United States that should be prioritized. Limiting the cost of 5G deployment is only a short-term consideration, given the impact that 5G is expected to have on the digital transformation of the economy.

The United States is in a long-term commercial and strategic competition with other great powers, especially Russia and China, and its policies should be oriented with that perspective in mind. It should defend interests that are concrete, but it should not only defend interests that are immediate. Spending on 5G is an investment, and the United States should accept short-term costs in the interest of long-term gains. Therefore, this policy brief recommends that the United States' 5G strategy should prioritize security first, influence second, and efficiency third.



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