

**Questions for the Record Submitted to
Deputy Assistant Secretary Robert Strayer by
Senator Cory Booker (No. 1 to No. 5)
U.S. Senate Committee on the Judiciary
May 14, 2019**

Question 1:

The current 5G discussion is heavily focused on building a trusted 5G infrastructure, which is certainly necessary. However, there has been less focus on the task of guaranteeing that the apps and services utilizing the 5G networks are also secure, and on what steps we should take to ensure security is built in from the ground up and commensurate with the threats we face. A clean and truly secure 5G network should prevent malware from transporting across protected devices and prevent unauthorized command and control from exploited connected devices. The United States should continue to encourage architecture that guards against these threats and address lateral threat movement within the network:

What actions should the Department of Homeland Security (DHS) take to ensure 5G networks will appropriately secure the applications and services riding on the networks—accounting for malware prevention and unauthorized command and control from exploited connected devices—not just the infrastructure of the networks themselves?

Answer 1:

The State Department (DOS) defers to the Department of Homeland Security (DHS) on this matter.

Question 2:

In building a risk-based approach to supply-chain security, how should we gauge the threats around specific categories of equipment? For example, the 2019 National Defense Authorization Act (NDAA) included rules of construction addressing the interconnected nature of telecom networks and the fact that different components have varying abilities to route traffic or to read the underlying data they carry.

Answer 2:

DOS defers to DHS on this matter.

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Question 3:

Various panel members testified that the Chinese have been exerting political pressure and conducting block voting within standards-setting organizations like the European Telecom Standards Institute (ETSI), the International Telecommunication Union (ITU), the 3rd Generation Partnership Project (3GPP), and also at major telecommunications conferences. At the same time, Huawei's massive research and development budget has clearly contributed to their lead in 5G patent applications. According to one study, China's share of "standard essential patents" was at 34 percent, compared with 14 percent for the U.S. Indeed, Huawei alone is responsible for 15 percent of 5G patent applications:

- a. Please explain how controlling the standards for a technology translates to controlling the market for that technology.
- b. Which is a bigger problem for the United States when it comes to setting 5G standards—politically motivated voting patterns or the flood of foreign patent applications?
- c. Can the United States effectively address the Chinese block-voting problem without committing substantially more resources to research and development and thereby increasing our volume of patent applications?

Answer 3:

International standards play an important role in spurring innovation. The USG is paying close attention to China's role in international standards organizations. We want Chinese companies to participate in these industry-led international processes rather than creating their own standards unilaterally, which could lock U.S. companies out of the Chinese market. With regard to patents, the United States has earned a reputation for quality over quantity. We are confident that high-quality technology covered by high-quality patents will prevail in international standards bodies over low-quality technology covered by low-quality patents.

Question 4a

Last week, the Trump Administration placed Huawei and approximately 70 of its affiliates on an "Entity List," meaning that U.S. suppliers may require a license to conduct business with Huawei's companies. Yesterday, May 20, in compliance with the President's orders, Google banned Huawei—the second-largest smartphone manufacturer in the world—from using anything but the open-source version of Android, cutting Huawei off from critical proprietary Google mobile services like Maps, Search, Play Store, Gmail, etc. If the ban were applied strictly, it could drive one of China's highest-profile companies out of business. However, late yesterday afternoon, the Commerce Department granted Huawei a 90-day reprieve from the import ban. This rapid succession of decisions and partial reversals has significant implications for national security, employment, and trade relations for the United States and China:

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Qualcomm, a U.S. company, got two-thirds of its sales from China in its most recent fiscal year. Similarly, Intel, the largest U.S. maker of chips, got more than 60 percent of its sales from the Asia-Pacific region last year, with most of that coming through China and Taiwan. How will potential sanctions against Chinese companies affect U.S. companies like Qualcomm, Intel, Broadcom, and Xilinx that provide necessary components to Huawei equipment? How will China's recent commitment to spend more than \$100 billion dollars for developing homegrown chip manufacturers affect the U.S. position?

Answer 4a:

DOS defers to DHS on this matter.

Question 4b:

b. What does it mean that Huawei, the second-largest smartphone manufacturer, will potentially be cut off from Google, the largest provider of mobile operating systems? Will the actions of this week be the catalyst that forces Huawei to develop its own mobile operating system? If so, how will that affect U.S. leverage in future potential standoffs?

Answer 4b:

Rather than relying on free markets, China uses market-distorting subsidies and other industrial policy tools in an effort to become self-reliant (and eventually dominant internationally) in high-tech sectors. The results have been mixed. The United States has placed Huawei and its subsidiaries on the Entity List because Huawei has engaged in activities contrary to U.S. national security and foreign policy interests, including violating U.S. export control laws. Additionally, Commerce has issued a temporary general license targeted to help innocent third parties utilizing Huawei equipment and services. We refer you to Commerce for more details.

Question 4c:

Are the references to a tech "Cold War" overwrought? How could these situations escalate?

Answer 4c:

The United States does not seek a tech "Cold War." The United States is working vigorously to safeguard U.S. national security and ensure that U.S. intellectual property and technology are protected.

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Question 5:

Many argue that consolidation in the telecommunications industry has made European—and not American—companies the leading Western manufacturers of the antennas, boxes, routers, switches, and beam-generating equipment that form the backbone of 5G technology. At the same time, U.S. regulators appear close to reaching a final decision on T-Mobile and Sprint’s proposed merger. Proponents of the merger argue it could lead to more spending on infrastructure; however, carrier consolidation has historically posed problems for equipment manufacturers (i.e., as carriers consolidate the customer base for equipment, manufacturers sell less equipment):

- a. Would the proposed merger between T-Mobile and Sprint be a good thing for non- Chinese equipment vendors?
- b. Does consolidation in the telecommunications hardware supply chain constitute a vulnerability for the United States?

Answer 5:

DOS defers to DHS on this matter.