CSIS / ITIC Workshop Series on 5G and 6G Policy Futures
Workshop 1: The Development of Standards for Next Generation Networks

Some say it is too early to talk about 6G, since we are still deploying 5G. Other says we don't know what 6G is (or will be). But many companies and governments are already researching 6G technologies. In the past, there was usually a decade or more between generations of telecom technology. The gap between 5G and 6G may not be as long and the demarcation may not between 5G and 6G may not be as sharp since 5G and 6G, will share some technologies and architectures. It is not too early to inform a public discussion of the challenged and requirement for 6G networks since standards lead deployment by years.

We all know the powerful linkages between standards, patents, and research. Europe has expanded its 6G research efforts. China claims that its researchers already hold thousands of 6G patents. China has already announced on (on September 16) that it will formulate standards for 6G, hoping to gain a global advantage. The standards development process is complicated, making it easy to exaggerate China's success, but there is no doubt about its intent. China was unable to dominate the first round of 5G standards, but it will be back in force for 6G.. The Chinese focus on 6G patents is an indicator (since patents and standard are closely linked) of a renewed effort to control the technology and the market.

5G networks will be the infrastructure for future innovation and economic growth by allowing faster and better access to data and computing resources in ways disconnected from physical location. In building this infrastructure, 5G's global supply chain, including manufacturing, R&D, and sourcing for key technologies such as semiconductors, open source and proprietary software, radio access networks (RAN), and others, can raise issues of security and trust. 6G, while years away from deployment, is already in development. 6G could offer even greater opportunities and can raise similar issues for security and economic growth. One fundamental question is how do we increase business opportunities and technological innovation while ensuring adequate trust and security in the new network technologies.

6G is also linked to Open Radio Access Network (O-RAN), a technology (or technologies) that has captured the interest of policy makers. O-RAN is a central part of a complex evolution in telecommunications that will shape 5G and 6G. It will involve new applications of cloud computing and artificial intelligence. Simply listing the companies involved in supplying technologies and services shows how the market is being reshaped. Standards are also more important in an open environment. We do not want to overstate the rate of change, but O-RAN will play an increasing role in the future and many venders will be involved in the 5G / 6G supply chain. O-RAN will be a focal point for the growing convergence for the telecom and compute environments.

The 5G discussion saw standards become a topic of keen policy interest. Some of this was due to concerns about China and some to a recognition of the importance of standards-setting for security and technological leadership. Two Working Groups in the Pittsburgh Statement of the

U.S.-EU Trade and Technology Council (TTC) sketch out directions for policy and cooperation on 5G and 6G. The Technology Standards working group is tasked to develop approaches for coordination and cooperation in standards. The Information and Communications Technology and Services working group is tasked to work towards ensuring security, diversity, interoperability and resilience, and find ways to reinforce cooperation on research and innovation for future network technologies.

These are all topics where we should expand public and policymaker understanding. Working with the Information Technology Industry Council , CSIS will hold a workshop series to inform the public and policy makers on the evolution of 5G and development of 6G and how network technologies and business models are evolving and converging. The series will hold three workshops. The first session will be on standards for next generation networks. The discussion will take place virtually on October 6th from 3:00 to 4:00 pm Washington time. Our goal is to help lay the groundwork for research and innovation priorities in 6G technologies and identify criteria for successful international coordination and competition.

The changes in technology and in the international standards agenda have accelerated in ways that could challenge policymaking. To help frame the discussion, we've come up with three suggested questions to start:

- Where do we stand on R&D in 6G?
- How should we reinforce cooperation in research and innovation for future network technologies.
- Where is coordination and cooperation in standards needed and what is the best way to get this?

To explore this complex and important topic, CSIS has invited three leading private sector experts to participate in a panel chaired by ITIC's Rob Strayer on 6G and standards. They are:

Dr. John E. Smee
Vice President of Engineering at Qualcomm Technologies
Micaela Giuhat
Director of 5G Policy and External Engagements, Microsoft
Travis Russell
Director of Cyber Security, Oracle Communications