

Testimony of

Maurice Turner

Deputy Director & Senior Technologist
The Center for Democracy & Technology

Hearing on FY21 Budget
House Appropriations Subcommittee on the Legislative Branch

March 4, 2020

Dear Chairman Ryan, Ranking Member Herrera Beutler, and members of the subcommittee:

The Center for Democracy (CDT)¹ has been a leader in protecting digital civil liberties and defending democratic principles online for over twenty-five years. We engage in a collaborative approach to identifying practical solutions and policy recommendations for today's most difficult technology questions because we recognize that no single person or institution has the breadth or depth of understanding of the technical aspects of modern innovation. As Senior Technologist, my role is often to act as translator between the technology and policymaking communities, and as explainer to the public at large. My testimony focuses on the practical implications of increasing technical literacy and capacity within Congressional member, committee, and support offices. There is a dire need for Congress to have access to unbiased, timely technical understanding across a number of technology-related issues facing Americans today.

Congress Has A Pacing Problem

Congress is tasked with finding legislative solutions to some of our greatest societal challenges, many of which are greatly impacted by new and emerging technologies. Yet, with the rapid rate of technological innovation and change, the task of creating timely, forward-looking public policy has never been more formidable.

¹ The Center for Democracy & Technology (CDT) is a nonpartisan nonprofit public interest advocacy organization that works to advance human rights online, and is committed to finding forward-looking and technically sound solutions to the most pressing challenges facing users of electronic communication technologies. With expertise in law, technology, and policy, CDT promotes policies that protect and respect users' fundamental rights to privacy and freedom of expression, and enhance their ability to use communications technologies in empowering ways. CDT has testified in front of Congress numerous times in its over 25-year history and is a highly trusted voice in technology policy.

The Congressional policymaking process has a strong dependency on the technical information provided by outside stakeholders because members and staff do not have the technical capacity to keep up with the pace of technological innovation and implementation. Companies at the forefront of these innovations are in fact incentivized by profit-seeking motives to maintain a knowledge gap between themselves and regulators. Researchers and advocacy groups, such as CDT, play an important role in filling some of that knowledge gap with the understanding that they have limits to their ability to access technical information, employ technical experts, and fund sustained efforts across multiple domains of expertise.

CDT has leveraged its internal team of technologists and network of technical experts to provide Congress with impactful insight on a number of occasions. One such example is a Department of Homeland Security (DHS) request for additional authority to identify potentially vulnerable critical infrastructure entities on the internet. On its face, enabling the DHS Cybersecurity + Infrastructure Security Agency (CISA) to compel network owners to produce customer information in order to notify the at-risk customers seems reasonable. CDT engaged agency and Congressional staff to provide feedback and understanding. Staff technologists were able to convey the practical limitations and usefulness of the legislation's intent, while engaging with other stakeholders to consider the ramifications of proposed changes to the technical definitions. Ultimately, CDT made a strong case for technical language that need not be in the bill in order to carefully balance the protection of critical infrastructure assets and preservation of civil liberties.

Another example is in the field of election security. Congress has shown a substantial interest in preventing malicious interference in elections for the past 3 years. Numerous security researchers have testified about the fundamental vulnerabilities in the outdated election systems that are used across the country. Those researchers have also proposed technical solutions that range from basic cybersecurity practices to novel auditing techniques that are still in development. Lacking support from technologists in third-party organizations like CDT, Congressional staff would be left struggling to understand how a myriad of technical solutions could be combined with complementary policy options in order to meaningfully improve election security in all jurisdictions. Congress is not alone in this regard. I have trained hundreds of state and local election officials on election cybersecurity and policy². Many lack the

² "Cybersecurity for Election Officials", Center for Tech and Civic Life (February 29, 2020), <https://www.techandcivicle.org/course/cybersecurity/>

resources in their offices to have dedicated IT or technologist staff that can understand both sides of the election security issue. Congress does have the resources to prioritize increasing technical literacy and capacity within its offices across a number of technology-related issues.

Congress needs the support of a dedicated, independent technology research and assessment office — one that can answer key questions around technology’s impact on people in the U.S., and do so at the pace of technological change rather than at the pace of political change. Major technological innovations from the early 20th century experienced a gradual rise in popularity³. Electricity, running water, and telephones took decades to become staples in the average American household. Society had time to adjust to the benefits and risks of the new technologies. Congress had time to deliberate approaches to policy changes to encourage equitable access and regulations to reduce consumer harms. Modern technology adoption curves are much steeper: people today are getting internet connections and cell phones twice as quickly as their grandparents were getting electricity and cars. Ten years ago smartphones were clunky devices for the tech-savvy, now they are so common that it is not unusual to see a toddler carrying one around and know exactly how to use it. Future technology development is exploding thanks to the growth of low-cost, high-power computing available to anyone with an internet connection and a good idea.⁴ Products and services have the ability to gain hundreds of millions of users in just a few months.⁵ Congress is continuing at a 20th century policymaking pace even though we are two decades into the 21st century. This pacing problem⁶ will only become worse if technological change accelerates.

In Support of the NAPA Recommendations

CDT supports the recommendations of the National Academy of Public Administration (NAPA) to expand the capabilities of the Congressional Research Service (CRS), further develop the capabilities of the Government Accountability Office’s Science, Technology Assessment, and Analytics team, and create an Office of the Congressional Science and Technology Advisor (OCSTA) under the leadership of Coordinating Council. A modern OCSTA can be an invaluable

³ “The Rising Speed of Technological Adoption”, Visual Capitalist (February 14, 2018), <https://www.visualcapitalist.com/rising-speed-technological-adoption/>

⁴ “Amazon Sagemaker: Machine learning for every developer and data scientist”, Amazon (February 29, 2020), <https://aws.amazon.com/sagemaker/>

⁵ “How TikTok Is Rewriting the World “, New York Times (March 10, 2019), <https://www.nytimes.com/2019/03/10/style/what-is-tik-tok.html>

⁶ “Congress vs. the “Pacing Problem[s]””, Marci Harris (August 21, 2019), <https://medium.com/g21c/congress-vs-the-pacing-problem-s-a887e3ca953f>

resource for Congress by acting as a conduit for technical expertise to flow between its offices, federal agencies, and external stakeholders. Not simply a resurrection of the old Office of Technology Assessment (OTA)⁷, an OCSTA needs to be accessible, diverse, and agile in order to provide non-partisan foresight into policy-relevant technology issues that industry or academia may either consider a low priority or have vested interest in providing biased information about.

The reality is that Congressional members and staff lack their own cadre of technical experts who can conduct independent research, coordinate existing federal agency research efforts, and leverage the expertise of external stakeholders. An OCSTA should be able to do all of that in service of its mission to respond to requests in a timely fashion and allow the information to be used in the same Congressional session. Without that support, Congress stands no chance of addressing its pacing problems⁸, leaving its policymaking, oversight, and operational efforts falling further behind new technological changes.

Attracting Tech-Capable Talent to Congress

The global cybersecurity workforce gap is well-documented⁹. Less-than-competitive salaries and onerous recruitment processes contribute to making government an undesirable career option for many early and mid-career individuals. A broader perspective suggests that professionals from a number of technology-related fields are underrepresented at the staff and member levels within Congress and its support offices. At times, the public-facing evidence of a lack of technical understanding and expertise in Congress is made quite clear.¹⁰ A growing number of short-term professional opportunities, such as the GSA 18F program,¹¹ AAAS' Science & Technology Policy Fellowship,¹² and the TechCongress Congressional Innovation

⁷ "Fact Sheet: Office of Technology Assessment", Lincoln Network (September 29, 2019), <https://lincolnpolicy.org/2019/09/29/fact-sheet-office-of-technology-assessment/>

⁸ "Congress vs. the "Pacing Problem[s]""", Marci Harris (August 21, 2019), <https://medium.com/g21c/congress-vs-the-pacing-problem-s-a887e3ca953f>

⁹ "Cybersecurity professionals focus on developing new skills as work- force gap widens - ISC2 Cybersecurity Workforce Study", ISC2 (2018), <https://www.isc2.org/-/media/ISC2/Research/2018-ISC2-Cybersecurity-Workforce-Study.ashx>

¹⁰ "Mark Zuckerberg's Facebook hearing was an utter sham", The Guardian (April 11, 2018), <https://www.theguardian.com/commentisfree/2018/apr/11/mark-zuckerbergs-facebook-hearing-sham>

¹¹ "18F", General Services Administration (February 29, 2020), <https://18f.gsa.gov>

¹² "Science & Technology Policy Fellowship", American Association for the Advancement of Science (February 29, 2020), <https://www.aaas.org/programs/science-technology-policy-fellowships>

Fellowship,¹³ facilitate mid-career professionals transitioning into policy-impacting roles in Congress. I experienced this personally as a Congressional Innovation Fellow in 2017.¹⁴ My assignment on the Senate Homeland Security and Governmental Affairs Committee included staffing cybersecurity hearings, providing direct support on several technology-related bills, and assisting staff in understanding a wave of global ransomware attacks.

Conclusion

The NAPA report offers solid recommendations for bolstering Congressional support offices in order to provide short-, medium-, and long-term analysis of complex technologies looming on the horizon. More importantly, Congress would benefit from developing its own absorptive capacity of technology-based information. Lacking permanent staff positions for technologists leaves Congressional member and committee offices at a structural disadvantage – fully dependent on outside expertise and the bias that often accompanies it. I recommend that the Committee support sustained and increasing funding of efforts to attract individuals and cultivate career opportunities that increase the technical literacy and capacity within Congressional member, committee, and support offices.

¹³ “Congressional Innovation Fellowship”, TechCongress (February 29, 2020), <https://www.techcongress.io/congressional-innovation-fellowship>

¹⁴ “2017 Fellow Reflections: Maurice Turner”, TechCongress (April 20, 2018), <https://www.techcongress.io/blog/2018/3/5/2017-fellow-reflections-maurice-turner>