

TOWARD EVER BETTER PUBLIC POLICY INFORMED BY TECH EXPERTISE

Some lessons learned

In the 21st century, **public policy is intimately connected with tech, especially digital networked technologies.**

It has never been more important that the Nation's public policy be informed and enabled by tech. Tech now influences most major policy areas. For example:

- Over the next decade, 34 billion new devices are projected to connect to the Internet (e.g., devices in the home, car, and stoplights, etc.) and without effective policy, attacks that utilize vulnerable connected devices—like the distributed denial-of-service attack that crippled a domain name provider and caused massive website outages—are likely to escalate.
- Technology for autonomous and connected vehicles has the potential to fundamentally change the transportation system but could be delayed by overly prescriptive regulation or by public reaction if safety and security are not also improved through an understanding of the most effective ways to achieve that balance.
- The commercial applications of drones to challenges such as delivery of medicine, emergency response, agricultural management, or industrial inspection are becoming real but require forward-thinking regulatory changes to open the skies to this innovation while understanding new technological ways to minimize public risk.
- ISIL and other terrorist groups are using modern communications technologies to attempt to recruit, radicalize, and mobilize Americans, and policymakers need to understand the uses of these technologies in order to be able to develop an effective plan for countering it.
- Creating policy that will lead business to create jobs and increase participation in the workforce requires understanding the impact of automation and of skills that will increasingly be emphasized in the modern economy.

To meet this challenge and opportunity, each Federal policy team is strengthened when it is cross-functional and includes people with high “tech IQ” (“TQ” —modern technological intelligence, expertise, and significant field experience), just as it should include economists, lawyers, managers, and scientists. At best, excluding disciplines leads to sub-optimal outcomes. At worst, it can lead to policy-threatening disasters.

The approaches below are important to ensure TQ public policy making:

- 1) Aggressively recruit senior leaders with high TQ across the White House;
- 2) Appoint a senior advisor to the President with responsibility for ensuring TQ in public policy;

- 3) Empower TQ leaders within the White House to engage with other policy councils; and,
- 4) Recruit and empower strong TQ senior leaders at departments and agencies across the Federal Government.

Each of these approaches are discussed in turn below.

Aggressively recruit senior leaders with high TQ across the White House

There are a number of key White House roles that are important for improving the delivery of Federal services, the acquisition of information technology, digital engagement with the American people, and the tools available within the White House. Finding people with significant experience in modern technical environments, both for leadership and team member positions, ensures that world-class TQ is available to advise the President and the President's staff. Additional expertise in technical and scientific areas likely to impact public policy, such as in machine learning, big data, cryptocurrencies, and gene editing, has also proven important for this Administration in the Office of Science and Technology Policy (OSTP) and elsewhere.

Finding and recruiting the talent to fill senior TQ roles often requires reaching beyond the normal pool of candidates already in government to the academic and private-sector, including the firms developing the fundamental innovations that are transforming society. This includes senior leaders from the private-sector with deep experience and aptitude leading modern, tech-intensive operations, as well as those that have been members of high-performing tech teams that have delivered widely recognized solutions or invented key technologies.

Appoint a senior advisor to the President with responsibility for ensuring TQ in public policy

U.S. Chief Technology Officer

Given the important role of tech in 21st century policy making, the President needs a senior leader to be responsible for ensuring that the Administration's public policy is informed by TQ, just as the President's Chief Economist ensures that public policy is informed by sound economics. In this Administration, the U.S. Chief Technology Officer (CTO) in the White House Office of Science and Technology Policy (OSTP) has played that role as an Assistant to the President, consistent with OSTP's broad mandate to provide the President with science and technology (S&T) advice on public policy and programs, while ensuring that Federal S&T investments make the greatest possible contribution to economic prosperity, public health, environmental quality, and national security. The Office of the U.S. CTO attracts world-class technical leaders from the academic, non-profit, and private sectors with specific expertise, and the Office has nimbly hired, as needed, as the policy priorities of the President have changed.

An example of the successful application of TQ to public policy making is policy made as part of the Precision Medicine Initiative (PMI) and the Cancer Moonshot. Both efforts heavily rely on patients' ability to securely contribute their data to establish large data sets to develop tailored medical treatments. To make PMI a reality, the Administration had to confront difficult public policy questions regarding privacy, security, patients' right to their data, consent, data transmission standards, and collaborations to establish public trust. The Office of the U.S. CTO

brought leaders with experience in successful large-scale data-science, privacy, and security services in the private sector to ensure that both PMI and the Cancer Moonshot took advantage of learnings from the private sector and were informed by the technical opportunities presented. Spectrum policy is another example. During this Administration, there has consistently been a member of the CTO staff with deep policy and technical knowledge of spectrum to ensure public policy in this area, such as wireless broadband policies, is effective. These individuals have worked with both expert agencies and the wireless industry to pursue policies that have significantly increased the amount of spectrum available for commercial use, helping to meet surging demands for bandwidth.

TQ is also important for less traditionally tech-focused policy. For example, with engagement from the Office of the U.S. CTO:

- Local interventions that use criminal justice data to reduce pre-trial detention and government spending (estimated at ~\$20 billion) are being adopted by over 100 jurisdictions without the need for additional Federal Government regulation.
- More than 70 communities have set up local systems to connect more people – in months not years – to the skills they need to succeed in the tech jobs that thousands of employers are struggling to fill, placing more than 4,000 people into well-paying tech jobs through alternative short-course trainings.
- Federal teams are accelerating access to open data so that third parties can create transit, housing, quality schools, economic inclusion, and other solutions with near zero additional Federal spending.

The Office of the CTO almost always works in close collaboration with other White House policy councils and agencies. The CTO team's technical expertise augments the legal, regulatory, economic, industry, trade, and scientific, as well as specific domestic and national security policy expertise already represented. It is critical that the advisor for tech must work with the President's other advisors to provide the President with the best public policy options.

Empower TQ leaders within the White House to engage with other policy councils

Tech Policy Task Force

One of a number of ways the White House makes public policy is through its policy councils. For example, the National Economic Council (NEC) coordinates economic policy-making and advice to the President while ensuring that policy decisions are effective and appropriately implemented consistent with the President's goals. Similarly, interagency coordination on research and development efforts and investments is the purview of OSTP's interagency National Science and Technology Council (NSTC). As tech has become more essential to public policymaking, each White House policy council has increased its fluency and focus on tech.

Given the importance of technology to a range of outcomes for the Nation, this Administration found that it is useful to have a policymaking apparatus for the development of tech policy and to advise other policy councils on tech matters. That apparatus is called the Tech Policy Task Force (TPTF) and is chaired by the U.S. CTO. Its membership includes the leadership of each of the technology components within the EOP (e.g., U.S. CTO, Federal Chief Information Officer, U.S.

Digital Service, etc.) as well as representatives from each of the other policy councils, such as the National Security Council (NSC). In contrast to other councils, more than half of TPTF membership is drawn from tech components.

TPTF's work in this Administration included public policy that is tech focused, such as Artificial Intelligence policy, and policy in which tech plays a role, such as consumer privacy or national security declassification. TPTF has been used to create tech-related policy, such as the [Federal Source Code Policy](#); to enable and engage in a policy discussion in another policy council; to advise and assist with agency efforts, such as international connectivity with the State Department; and to answer questions raised by the President's senior advisors and other EOP leadership, such as with respect to cybersecurity and the [Cybersecurity National Action Plan](#).

TPTF, in turn, has been leveraged in the policymaking efforts of other policy councils, such as the NSC, to enhance their work with TQ. Formalizing TPTF representation in other policy councils by adding TPTF membership (and other appropriate technical and scientific representatives) to the council in its basic process documents would be an effective step towards ensuring that TQ is literally "at the table" for those discussions to ensure that the resulting public policy takes full advantage of the opportunities afforded by modern technology.

Regardless of where a policy process originates, TPTF typically works in tight partnership with other policy councils. For example, its work catalyzing the Administration focus on Artificial Intelligence was in partnership with the agencies and departments through the NSTC, the Council of Economic Advisors, the NEC, the NSC, and others. TPTF's work on the Federal Source Code Policy was in partnership with the Office of the Chief Information Officer within the Office of Management and Budget. TPTF's ability to draw relevant technical expertise to advise on public policy from service delivery components, as discussed in "Toward An Ever Better Digital Government," has also been important.

Recruit and empower strong TQ senior leaders at departments and agencies across the Federal Government

Department and agency leadership are also seeing a tremendous shift in the importance of tech to their public policymaking. Indeed, fundamental shifts in technology and the economy, such as the increasing prevalence of machine learning, automation, cybersecurity, the increasing penetration and importance of mobile computing, cryptography (including cryptocurrencies), and fundamental business model shifts towards the sharing economy, crowd sourcing, and open innovation have become important to an extremely wide range of department and agency public policy making across the Federal Government. There is no example of an agency or department whose public policy will not be significantly impacted by modern tech, especially digital, networked technologies. At departments and agencies, such as the Departments of Transportation, Justice, Commerce, Homeland Security, Treasury, Labor, and State, these technologies are in the midst of shifting departments' and agencies' ability to execute on their public policy priorities.

For example, in speaking about drones and automated vehicles, the Secretary of the Department of Transportation, Anthony Foxx, said that "[n]either issue was on the map" during his

confirmation process in 2013. By 2016, the Department had made significant public policy on drones, self-driving automotive technologies, and other important digital and networked technologies. Moreover, automation, digital communication, machine learning, cybersecurity, internet of things, smart cities tech, sharing economy, open data, data science, and big data are becoming a significant part of many of the Department of Transportation's key public policy initiatives. As Secretary Foxx put it, "we're moving into the Jetsons era, but we have Flintstone approaches to authority and regulation and we can't go the distance with this until we really think about things differently."

Similarly, the importance of digital, networked technology to the operations of the Department of State and Department of Defense is significant. Terrorist organizations now spread their recruitment messages globally through social media and other modern communications technologies. Open government, open source, and open data are being used to bring nations together and advance U.S. foreign policy interests, such as when Nigeria joined the [Extractive Industries Transparency Initiative](#) to open up data about revenues received for natural resources in the country. An open Internet accessible to all also provides tremendous opportunity to ensure global economic stability and security that benefits the Nation's foreign policy.

The best approach to incorporating TQ into a particular department or agency's policymaking processes will vary, but recruiting strong leaders with high TQ and empowering those leaders by including them in all aspects of policy formation and implementation will be key. As in the case in the private sector, it is important that all high-level agency personnel have some level of TQ fluency – similar to necessary legal or economic fluency – in order to formulate effective and efficient public policy. In addition, those senior teams should include members with relevant high TQ experience so that it can be brought to bear to improve the agency's public policy; this can be done with high-TQ Deputy Secretaries or by appointing a high TQ senior advisor to the Secretary.

Conclusion

The approaches outlined above were the Obama Administrations' response to the importance of tech to effective 21st century policymaking. While it is inevitable that the technologies important to public policymaking will change over time, and that public policy goals will change from administration to administration, it is highly likely that understanding modern technology best practices—as well as economic, legal, management, scientific and other disciplines—will continue to be important to ensuring the most efficient and effective public policy for the Nation. Now is the time to move from considering the power of modern tech, data, and innovation as an option or an afterthought for public policy to ensuring that public policy discussions are informed and improved by TQ.