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By Wayne T. Brough
President
Innovation Defense Foundation

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Today's Congress has limited capacity when addressing complex scientific and technological issues. Currently, there are various proposals to bolster Congress's abilities to conduct the necessary technological assessments. The two most prominent recommendations include reviving the Office of Technology Assessment (OTA) or strengthening the Government Accountability Office's (GAO's) ability to provide technological assessments for Congress. This testimony will explore these proposals to improve congressional capacity with respect to questions of science and technology, with a recommendation that bolstering the GAO's role may be the most efficient and efficacious way to do so.¹

Congress faces two significant challenges with respect to assessing complex scientific or technological questions. First, misguided legislation can generate real economic harm, or, contrarily, proper legislation can promote dynamic and innovative markets. Second, appropriations and oversight of federal agencies requires a degree of expertise. As the Department of Transportation, for example, prepares rulemakings on driverless cars or drones, the corresponding congressional oversight committees need a level of informed oversight to facilitate outcomes that encourage innovation rather than bureaucratic impediments to new technologies.

If Congress lacks these abilities, the void in information will be filled by other actors, either in the executive branch agencies implementing legislative mandates, or special interests pursuing their own agendas. For the typical member of Congress, information can be derived from personal staff, committee staff, federal agencies, and special interest lobbyists; a lack of congressional capacity biases the results towards agencies of the executive branch and interest groups. Political scientists have explored in great detail how principal-agent models can be used to analyze questions of political organization and congressional control.² Political scientists such as Mathew McCubbins suggest that institutional design has allowed Congress to continue its control over the bureaucracy at a relatively low cost.

But some see a shift away from congressional control created by executive branch review of agency rulemakings by the Office of Information and Regulatory Affairs within the Office of Management and Budget, which began in the Reagan era but has been a critical tool for every

¹ This testimony is drawn from a working paper by Wayne T. Brough and Josh Withrow, "Congress, Science, and Technology," available at www.innovationdefense.org.

² While their output is prolific, the seminal piece is M. McCubbins, R. Noll, and B. Weingast, "Administrative Procedures as Instruments of Political Control," *Journal of Law Economics and Organization*, 1987, vol. 3, no. 2: 243-247.

president since then.³ This review mechanism provides the president and the administration an opportunity to help shape rulemakings according to their preference rather than the will of Congress.

Establishing an agency within the legislative branch that provides members of Congress with assessments of science and technological issues may be a way to address information asymmetries between the branches of government. Additional expertise could leave implementing agencies with far less discretion when it comes to interpreting legislative mandates. Additionally, the technological assessments provided to members of Congress can enrich the congressional record, should legislation or their implementing regulations face any legal challenges.

With respect to building congressional capacity to address issues of science and technology, various strategies have been proposed. One is to expand congressional staff, which perhaps may be viewed as the most simple and direct approach to the problem. Other proposals include developing a new institution responsible for providing scientific and technological oversight for Congress. Along these lines, some advocate reviving the Office of Technology Assessment, which served this role for Congress from 1972 until its dissolution in 1995. Alternatively, some suggest that science and technology assistance can be housed in an existing institution, such as the Government Accountability Office (GAO), and, indeed, the GAO has launched a new initiative to provide technological assistance to Congress.⁴ Assessing monitoring costs and principal-agent problems of these various options may provide insights into the efficacy of each approach.

It is not evident that additional staffing would improve the situation. In a recent paper, Jesse Crosson, Geoffrey M. Lorenz, Craig Volden, and Alan Wiseman determined that a larger staff does not necessarily benefit a lawmaker; rather, what does provide benefits are more experienced staff members. The authors found that those legislators (especially committee chairs) with more experienced staff were more effective and advanced more substantive legislation.⁵ Given the need for more experienced staff and the high turnover of congressional staff members, establishing a body within the legislative branch with the expertise to help members of Congress and their staff members evaluate complex policy issues may be a more effective solution.

The recognition that Congress needed an objective, expert source of technological understanding stretches at least as far back as the early 1960s. Congress finally established the Office of Technology Assessment (OTA) in 1972 to serve this role. The goal was to provide objective, unbiased analysis of complex questions of science and technology. For the next two decades, the OTA produced hundreds of reports and consulted with members of Congress and

³ “Regulatory Planning and Review,” Executive Order 12866, 58 *Federal Register* 51735, October 4, 1993.

⁴ Adam Mazmanian, “GAO Expands and Elevates Tech Assessment,” *FCW*, Jan. 29, 2019, available at <https://tinyurl.com/y9dhwerh>.

⁵ Jesse Crosson, Geoffrey M. Lorenz, Craig Volden and Alan Wiseman, “How Experienced Legislative Staff Contribute to Effective Lawmaking,” Center for Effective Lawmaking, CEL Working Paper 2018-002, September 2018, available at <https://tinyurl.com/yvefgvjy>.

committees throughout the legislative process. Indeed, OTA offered studies of a number of important issues, from acid rain to the role of polygraphs to missile defense systems.

While the line between expert analysis and agenda control could at times be blurry, the OTA was by necessity very cognizant of the need to maintain a reputation as an apolitical agency. Nevertheless, the shadow of partisan influence dogged the OTA throughout its existence—at times more fairly than others. Thanks in large part to such partisan concerns, OTA’s fate was effectively sealed by the Republican tidal wave of 1994. Part of incoming Speaker Newt Gingrich’s “Contract with America” was a promise to scale back the footprint of Congress itself.⁶ While most congressional support agencies saw their belts tightened, the OTA received the axe—seeing its entire \$22 million budget and full-time staff of 143 (and dozens of temporary staff) eliminated overnight in 1995.⁷

Whatever issues the OTA may have had, its core functionality was not replaced. This was exacerbated by the fact that other staff who may have had some ability to fill the void were also drastically reduced. The Government Accountability Office staff was cut by nearly 30 percent between 1993 and 1997, while the Congressional Research Service took more than a 10 percent trim.⁸ Notably, the House Committee on Science, Space, and Technology also took one of the most drastic cuts—laying off nearly half its staff members, dropping from 86 in 1994 to 45 the following year.⁹

Political challenges aside, it is useful to thoughtfully evaluate some of the ways that another body might provide not merely a replacement but even an improvement on key aspects of the OTA. One structural flaw that presented substantial principal-agent issues in the OTA was its controlling body, the Technology Advisory Board (TAB), which consisted of six members each from the House and Senate. Although the board was evenly split between the dominant parties, by law the members were all chosen by the majority leadership of each chamber, lending some automatic credence to charges of bias.

If a renewed OTA is not the best option for providing a 21st century level of objective technological and scientific expertise for Congress, the beginnings of another solution may already exist in the small technological assessment program run by the Government Accountability Office (GAO). In addition to its mission to perform audits and investigations to root out waste, fraud and abuse, the GAO’s 2002 technology assessment pilot program was expanded into an official office in January 2019 to expand its analytical capabilities and advise Congress on science and technology matters. The GAO’s technological assessment program immediately showed promise even with very limited reach and resources.¹⁰

⁶ Text of the Contract from America has been archived at: <https://tinyurl.com/yyx64oxu>

⁷ This translates to a bit under \$37 million in December 2018 dollars.
https://www.bls.gov/data/inflation_calculator_inside.htm.

⁸ Thomas E. Mann and Norman J. Ornstein, *Vital Statistics on Congress*, Brookings Institution, Table 5-1, May 2018, available at <https://tinyurl.com/y8kab7w9>.

⁹ *Ibid.*, Table 5-6, available at <https://tinyurl.com/yb8e92ba>.

¹⁰ Jon M. Peha “Science and Technology Advice for Congress: Past, Present, and Future,” *Renewable Resources Journal*, 24:2, pp. 19-23, available at: <https://tinyurl.com/y22kn558>

Based on the pilot program’s solid performance, the GAO was authorized to explore a major expansion in its assessment activities that has resulted in the opening of the new office of Science, Technology Assessment, and Analytics (STAA).¹¹ The office launched in January 2019 with 70 staffers, with plans to double that number in the near future.¹² This new STAA office brings the practical advantage of already existing as a funded entity with an existing body of high-quality reports from which to build. Which brings with it the political advantage of not adding “one more boondoggling board to what we already have,” a concern voiced by Congressman H.R. Gross during the debate over creating the original OTA that would certainly be voiced again by conservatives today.¹³ Moreover, the monitoring costs are lower and the principal-agent problems are fewer when comparing the GAO to a revived OTA model.

But more than a mere matter of convenience, continuing to house technology assessment within the GAO could provide some distinct advantages over the workings of the old OTA. Eliminating the leadership-dominated TAB and its bureaucratic delays is one such advantage, as previously discussed. Instead, the new GAO program actually allows any member of Congress to submit a request, although prioritizing requests by the chairs or ranking members of the committees.¹⁴

That said, for the STAA program in the GAO to truly replace the positive attributes of the OTA, it would clearly need some modifications by Congress. It would likely require making the technology assessment program a somewhat independent sub-unit of the GAO with its own director, allowing it to develop its own culture independent from the sole oversight model of the GAO at large.¹⁵ However, these modifications are likely far easier and more realistic than efforts to merely revive the old OTA.

Unlike rebuilding OTA, expanding and improving GAO’s capacity does not involve creating a new government bureaucracy. The GAO also has a strong reputation for maintaining political neutrality and producing impartial work. In many respects, this may prove the more feasible option by avoiding some of the political pitfalls associated with the previous incarnation of the OTA. The GAO is respected as a nonpartisan organization with little political baggage that is building out its expertise in its new STAA program. If done with foresight and an understanding of the principal-agent challenges facing any new legislative agency, it may be the most efficacious approach to increasing congressional capacity in critical areas of science and technology.

¹¹ Legislative Branch Appropriations Bill 2019 (Senate), Rep. 115-274, at p. 48, available at <https://tinyurl.com/ydcxm8fr>.

¹² Adam Mazmanian, “GAO Expands and Elevates Tech Assessment,” *Federal Computer Week*, Jan. 2019. <https://tinyurl.com/y2t64ky3>

¹³ Kunkle, *op. cit.*

¹⁴ GAO’s Congressional Protocols, July 17, 2017. <https://tinyurl.com/y3nnvkzb>

¹⁵ See Zach Graves, “Technology Assessment: Can the GAO Fulfill OTA’s Mission?” on LegBranch.org, April 20, 2018, available at <https://tinyurl.com/y83zcv2n>. and Will Rinehart, “Should Congress Revive the Office of Technology Assessment?” *American Action Forum Insight*, Oct. 29, 2018. <https://tinyurl.com/y5g5y93q>