A Fresh Start for OTA

Creating the lean, dynamic technology assessment agency Congress needs today.

By Robert D. Atkinson

For some two decades, from the 1970s to the 1990s, the Office of Technology Assessment (OTA) played a valuable role in providing actionable information to Congress on a wide array of issues related to science and technology. Today, with the emergence of a host of new technologies and growing contentiousness around technology policy, many observers are concluding that Congress needs a more robust source of information and advice about science and technology than it has now.

Although some commentators believe that this function should be incorporated into existing legislative support agencies, the Congressional Research Service (CRS) and the Government Accountability Office (GAO) are not best suited to meet Congress's needs in this area. CRS has historically focused on shorter and more discrete analysis across a very wide range of issues; it is not set up for the kind of intensive dives into technology policy, including conversations with stakeholders, that would be of most value to Congress. And while the GAO has done some excellent work in this area, first through a pilot program begun after OTA was closed and more recently via its new Science, Technology Assessment, and Analytics program, the GAO's strength has been analysis of current federal operations.

Congress's greatest need in this area is for analysis and assessments of emerging technologies and the key policy issues they are likely to raise. That requires an organization designed from the start with a capacity for external engagement. And it requires an organization possessing deep expertise not only in science and technology but also in science and technology *policy*—which is why I support housing this function in a dedicated agency.

But any effort to revive OTA or to create a new agency to perform this function must reckon with the weaknesses of the original OTA. Based on my experience as an OTA staffer for five years in the 1990s—including serving as the project director for the final report issued by OTA[1]—and on subsequent experience as the founder and president of a nonprofit think tank with the mission of formulating and promoting wise technology policy, I offer the following modest suggestions for the structure, services, and management of an office dedicated to advising Congress on science and technology.

Improving on OTA's Organizational Structure

If OTA is to be resurrected or a new successor agency established as a freestanding organization, it will be important to reform the project selection and management process. When OTA was in existence, its studies generally took a considerable time to complete, which is one reason why a significant share of its reports failed to be completed on schedule, occasionally missing the window for congressional action.

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[1] This was "The Technological Reshaping of Metropolitan America" (released in 1995), available at https://ota.fas.org/reports/9508.pdf.

There were several reasons for this slowness. A key one was the time-consuming and expensive process of creating separate advisory boards for every project. OTA had to identify the right 20 or so individuals for each study and invite them in for three daylong reviews (usually flying them in from out of town) over the course of the study. The advantage of that process was that it obtained views from a diverse set of stakeholders to help ensure that OTA project staff at least *heard* all sides of an issue, even if they did not always agree with or act on the advice. But this process added significantly to the time between the initial request by Congress for a project and the final delivery.

A new OTA should dispense with this process and instead rely on a number of standing outside committees, each focusing on a particular set of technology issues—e.g., software and AI, energy and materials, robotics, wireless. These committees would be made up of experts from industry, labor, academia, think tanks, and civil society groups, perhaps serving on a five-year basis with an option for renewal. OTA project teams could call on these individuals for input when about to initiate a study and later for external review. When tackling subjects for which there is no appropriate standing committee, the project teams could still assemble project-specific advisory boards—but even then, existing free teleconference technologies mean there is much less need to pay for people to travel to Washington to provide their views. While this process probably should not be made much more transparent, lest the members of the standing committees feel they cannot offer their most candid advice, projects can be opened up to the public in another way: new communication tools not available to the original OTA make it easier to solicit public comment when appropriate.

Another important change: if Congress establishes a new OTA, it should not retain the system by which studies were requested of the old OTA. Requests usually came from committee chairs or from the board that oversaw OTA—the Technology Assessment Board (TAB), which consisted of six senators and six representatives, half Democrats and half Republicans. And before OTA could start work on any study, the TAB had to give its assent. Having the TAB sign off on plans for the work undertaken by OTA was supposed to ensure that studies had bipartisan support and that frivolous studies would not be commissioned. However, like the project advisory boards, the TAB slowed the production process. And worse, it actually resulted in *less* buy-in from rank-and-file members, since they felt that they had little influence over the OTA agenda.

To increase buy-in from members of Congress, a new OTA should not have to rely on the TAB and committee chairs for project requests. Instead, the office should be open to requests from any member of Congress. OTA's director and other staff leaders should be free to prioritize these requests and merge overlapping ones, with the recognition that only a modest share would be accepted and acted upon. The TAB would still have an oversight role, and would make recommendations regarding the selection of the OTA director.

A new OTA should also be required to cooperate with CRS, the GAO, and the Congressional Budget Office to coordinate on technology issues. During the years of the old OTA, there was little collaboration or interchange among the four support agencies on technology policy issues. Such cooperation would be especially important now that the GAO has stood up its Science, Technology Assessment, and Analytics (STAA) program. In this scenario, there would be room for the GAO's STAA program and the new OTA to coexist. The former,

playing to the GAO's historic forte, would focus primarily on science and technology issues connected to federal programs. The latter would focus primarily on science and technology policy questions not directly connected to federal programs.

Finally, there is the issue of size. At its peak, OTA had a staff of about 200 (that is, 143 full-time employees plus contractors). With that size came the ability to address a wide range of science and technology issues at a serious depth. But, as is true with any organization, as size increases, flexibility and nimbleness usually decline. Rules and procedures get put in place to ensure some level of control, but these come at a cost. Moreover, larger organizations are often limited in the extent of informal learning and collaboration that can take place. For these reasons, I believe that if Congress re-creates OTA its size should be limited to perhaps no more than 50 staff in total. That smaller size would be more feasible if the GAO's STAA continued its work as described above. And that smaller size would enable OTA to be nimble and "craft-based." Providing technology advice to Congress should be a craft enterprise, not a mass-production operation based on rules, procedures, and other strict guidelines. The smaller an organization, the better suited it is to engage in the kind of craft production necessary to meet the varied and changing needs of Congress and to do justice to the rapidly evolving subject matter.

OTA's Products and Services

OTA generally had one major form of product: a report of greater than 200 pages. There were two problems with this format. First, much of the output was overly detailed, with considerably more background than was actually needed to help inform congressional decisions. Second, this complexity and length meant that OTA reports usually took more than a year to produce, so they were often not as relevant to timely decision-making as they could have been.

The output of a new OTA should emphasize shorter products. Perhaps the modal report should be between 40 and 60 pages and completed in 10 to 26 weeks, although products could be longer or shorter as appropriate: there could be a role for occasional reports that are more comprehensive, just as in many cases the suitable output might be a 10-page memo summarizing the key policy issues surrounding a particular technology.

Written reports should be just one form of service offered by a new OTA. The old OTA provided briefings and testimony, but mostly just to present completed reports. And staffers of the old OTA offered comment on legislation, but only in a sporadic and informal way. In line with a new OTA being a somewhat smaller and more tightly knit organization, it should, to be most effective, be positioned as a consultant to Congress on complex technology and technology policy questions. That might mean offering short notes, similar to the "POSTnotes" put out by the U.K.'s tech assessment office; short briefs on technology issues regardless of whether there has been a request; a regular e-mail newsletter for members of Congress; closed-door workshops and lectures for staffers; and even podcasts.

In addition, while the old OTA generally avoided making explicit policy recommendations—for a variety of reasons, including a desire not to alienate stakeholders and the bipartisan TAB—that practice often meant that Congress did not get a full analysis of the impacts of different policy choices. To equip Congress to most effectively make decisions regarding new technologies, a new OTA should be charged with not just conducting *technology assessment* (which in practice often meant providing a lot of background on technologies) but

technology policy assessment. For example, it is not enough to assess the privacy implications of current and emerging technologies and business models; a new OTA should also assess the likely impacts of proposed privacy laws and regulations on both privacy and technological innovation.

Moreover, a new OTA should also be charged with assessing technology and technology policy in the context of how it will affect U.S. competitiveness. The United States is a world leader in scientific discovery and technological innovation. Much of the old OTA's work touched indirectly on how America could maintain its lead in science and technology in a world of rising competitors, including Japan. With the rise of even more capable and determined competitors and adversaries, like China, a new OTA must be given an explicit mandate to approach technology assessment with this consideration in mind.

Finally, there is a potential pitfall that a new OTA must avoid: excessive negativity. Legitimate worries about technology in the late 1960s and early 1970s led to the creation of OTA in the first place, so you could say that a concern about potential harms is baked into the very idea of technology assessment. Today, however, undue pessimism about technology colors much of our public discourse: even after decades during which advances in technology have undeniably improved our material well-being—our wealth, our health, our happiness—there is a widespread and growing skepticism and even animus toward technology. A new OTA must be explicitly required to offer a balanced view of technology, not just acknowledging its potential problems but also recognizing and promoting its potential benefits, and helping Congress to think more clearly about how policies can both limit harm and accelerate innovation.

Internal Management and Operational Issues

Analysis of technology and technology policy will be of little use to lawmakers if it overemphasizes strictly technical matters or social speculation. Of course, those things are important: an accurate understanding of how a technology works is essential, and forecasting the social implications of technology can be a valuable exercise. But it is vitally important not to exclude economics. Technology issues almost always play out in an economic context. Yet there was very little economics expertise at the former OTA, and its reports all too often included little or no economic analysis. A new OTA must have economists, albeit ones that understand innovation, strongly represented on its staff and must require that every major product contain significant input from them.

Putting economists—and other empirical social scientists—front and center will help ensure that the work of a new OTA is informed by a wide array of views. This is critical if it is to avoid groupthink and ideological bias. Over the last two decades, many—if not most—technology policy debates in Washington have devolved to a lowest-common-denominator groupthink that is regularly reinforced in the media. That unfortunate trend is coupled with a growing technology tribalism wherein issues that two decades ago would have been seen as technocratic—to be debated and settled by experts—have become emotionally charged and increasingly vitriolic. (The debate over net neutrality is a case in point.)

If congressional staff want to tap into these heated debates among the ill informed, all they need do is sign up for a host of Twitter accounts or spend some time on some of the feistier subreddits. But if they want to break through the groupthink and tribalism, a new OTA can help —if it is constituted to withstand these pressures, which the old OTA did not face. In this sense,

the single most important factor for the success of a new OTA is whether it can be staffed and led by individuals who see their role as "speaking truth to the mob," whatever the political or ideological orientation of that mob may be. In other words, the office will have to ensure that its outputs are guided by rigorous analysis, careful attention to data, and logic. This can be extremely difficult. The temptation to defer to popular opinion or to seek out a "middle view" that takes into account a bit of each "side" can be intense.

It is not clear exactly how best to protect and promote the intellectual integrity of a new OTA. A congressional mission statement that makes clear the need to prioritize rigor can help, as can the selection of the right leader. But perhaps other mechanisms can be put in place. A new OTA could regularly host debates for staff, bringing in outside interlocutors with different views to engage in the battle of ideas. Or perhaps it might be possible—although this would have to be done with great care and delicacy, and without diminishing the office's expertise—to put in place a process to ensure that hires are somewhat ideologically and politically diverse. (Notwithstanding claims to the contrary, there were relatively few conservatives at the old OTA, which meant that there was less robust intellectual dialogue and that the office's work sometimes reflected a comfortable and unquestioned left-of-center consensus.) Also, the OTA director should be required to establish a politically and intellectually diverse outside-review group whose members would offer comments each year on areas where OTA analysis and output could be strengthened and where they may have not lived up to the goal of intellectual autonomy and independence.

Finally, a new OTA would benefit from instituting management practices less loose than those of the old OTA. While I believe that the old OTA was larger than it needed to be, one of its strengths was that it did feel like a "big happy family," in the sense that most analysts at least knew of each other and many worked closely and collaboratively together. This culture was also a weakness, though. In such an environment, needed management discipline, including terminating individuals for poor performance, was all too often lacking. It was not uncommon for some senior project directors to continue to be appointed to lead projects after they had failed to meet congressionally mandated deadlines. The message was that as long as you were part of the OTA family, your mediocre or poor performance could be overlooked. In order to avoid the development of such a culture, Congress should mandate and provide funding for a regular (say every three years) external review conducted by an independent major consulting firm, with the goal of identifying and reporting to Congress areas in need of improvement, including management and personnel practices.

At its best, the old OTA helped Congress to understand the policy challenges associated with new and emerging technologies. The need for the kind of analysis and advice it offered is as acute as ever. If, as I hope, Congress decides to revive the office or to create a new agency to fill a comparable role, it can be structured so as to avoid some of the problems that beset its predecessor. And its management and output can be designed to better suit the challenges of today—eschewing tribalism and groupthink, avoiding reflexive pessimism, and taking seriously the ways that American leadership in technology can be promoted through sound, savvy policy.

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