April 5, 2019

Rep. Derek Kilmer, Chairman
Rep. Tom Graves, Vice Chair
Select Committee on the Modernization of Congress
U.S. House of Representatives
Washington, DC 20515

Re: Options for Congressional Technology Modernization

Dear Chairman Kilmer, Vice Chair Graves, and members of the committee:

On behalf of the undersigned group of civil society organizations, we write to express our encouragement for the tremendous work you are undertaking to modernize Congress. To address the challenges of the 21st century, we need a Congress that is empowered with state-of-the art technologies.

On a daily basis, congressional offices rely upon antiquated tools to manage their legislative, oversight, and constituent-related responsibilities. Meanwhile, the demands put on congressional resources have increased. In recent decades, the size and scope of government functions subject to oversight have grown, and the average number of constituents per representative and constituent-communications per representative have increased geometrically.

Since the birth of the World Wide Web in 1989, congressional capacity has suffered significant institutional decline — with total legislative branch staffing decreasing by 27%.[1] At the same time, incoming constituent communications have soared.[2] Over the decades, these trends have undermined essential policy and oversight functions while simultaneously shifting scare resources towards political communications and constituent services.[3]

Besides growing the number of congressional staff to address this shortfall, we also can use technology to improve the productivity of each staffer. This can be done by adopting modern productivity software, improving digital services infrastructure, and generally enhancing the governance and incentives around information technology in Congress.[4]

Given the early stage of the Select Committee's work, we hesitate to make prescriptive recommendations. Accordingly, what follows are a menu of options to explore during your first 90 days, accompanied by specific action items. This is not intended to be a comprehensive list, and we hope it will be a useful resource to get you started. In addition, we include a framework of example

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[1] From 1989 to 2015. See: "Vital Statistics on Congress," Brookings Institution.
https://www.brookings.edu/wp-content/uploads/2017/01/vitalstats_ch5_tbl1.pdf.
[2] For instance, constituent messages to the House through its Communicating With Congress API reached 28 million communications in the first year of the 116th Congress, up from 9 million in 2016.
[3] Daniel Schuman and Zach Graves, "The Decline Of Congressional Expertise Explained In 10 Charts," *Techdirt*.
https://www.techdirt.com/articles/20181018/10204640869/decline-congressional-expertise-explained-10-charts.shtml.
[4] See, e.g., Zach Graves and Ken Ward, "Doing Business with Congress," Lincoln Network, December 2018.
https://joinlincoln.org/papers/doing-business-with-congress.

Key Performance Indicators (KPIs) to assess whether Congress is moving in the right direction with respect to technology.

I. MENU OF TECHNOLOGY IMPROVEMENTS

The following section offers analysis and recommendations to pursue the following reforms, which are designed to be actionable within the next 90 days:

1. Improve Access to Legislative Information by Creating a Chief Data Officer and Expanding the Bulk Data Task Force

2. Support the Legislative Modernization Initiative

3. Establish a Public Information Advisory Committee for the Library of Congress

4. Improve Influence Disclosure for Lobbyists and Outside Witnesses

5. Explore Creating a Congressional Digital Service

6. Review and Improve Cybersecurity Practices

7. Review and Clarify House Open Source Policies

8. Ensure a Modernized Congress Is Accessible to All Americans

9. Increase Awareness and Skills to Make Use of Existing Resources

1. Improve Access to Legislative Information by Creating a Chief Data Officer and Expanding the Bulk Data Task Force

Chief Data Officer: Members of Congress, their support offices and agencies, as well as the general public rely on congressional data, but it is not always clear what information exists, where it can be found, and what more can be done.

In recent years, the legislative branch has made significant advances to release legislative information to the public as data. This has served Congress well, as it has facilitated Congress's access to its own data, both as raw structured data and as refined by third parties. These efforts have included the online publishing of bills; committee schedules, documents, and videos; an online House phone directory; CBO reports; the bills and amendments scheduled for a floor vote in the House; the Statement of Disbursements; the new joint meetings calendar; as well as holding regular meetings of the Bulk Data Task Force and the Legislative Data and Transparency Conference. These efforts are welcome and encouraged. However, given the complexity and distributed governance of information in Congress, it is helpful to have a touchstone that can help facilitate a coordinated approach to manage that data.

To address this, Congress should create a Chief Data Officer with the responsibility for tracking datasets released by the legislative branch; providing advice, guidance, and encouragement to offices regarding the publication of legislative branch information as data; and providing assistance to the public with finding and obtaining legislative data. We encourage you to recommend to the House that such a position should be created and its parameters hammered out by the relevant parties.

Bulk Data Task Force: In 2013, Congress established a Legislative Bulk Data Task Force focused on the question of determining whether Congress should make the legislative data behind Congress's information system, THOMAS and LIS, available to the public as structured data. Ultimately the Task Force recommended and GPO implemented the publication of bill summary, status, and text information online as structured data.

Perhaps more importantly, the Task Force — which brought together many of the technology stakeholders inside the legislative branch as well as members of civil society — continued to hold public meetings on a quarterly basis as well as innumerable Congress-only meetings. This led to ongoing collaboration among all the stakeholders that has changed the culture of Congress and quietly led to many technological advances concerning legislative operations and transparency. The Task Force served as a platform for people inside and outside Congress to develop innovative products and tools that help Congress using information released by Congress. Leadership of both parties have quietly blessed this group's activities, allowing it to continue over the years.

Congress should endorse the collaboration of the Bulk Data Task Force and officially expand its mission to become the Congressional Data Task Force. The legislative language establishing the Task Force focuses on bulk access to legislative data, with bulk access being one mechanism by which data can be published, and legislative data being narrowly construed to information only about bills. On its original mission, the Task Force has surpassed expectations. An updated mission would formally allow the Task Force to look at how data is handled throughout the legislative branch. It would allow it to expand its scope beyond bills and the data attendant to them. This would allow consideration of other legislative documents, the handling of information used for oversight, information used and published in responding to constituents, and providing key insights about the operations of Congress itself.

Accordingly, we recommend that the Select Committee endorse the work of the Bulk Data Task Force, encourage the Committee on House Administration and House Legislative Branch Appropriations Subcommittee to update the legislative language establishing the Task Force and to provide for its existence on an ongoing basis, and encourage the collaboration of support offices and agencies across the legislative branch with the Task Force.

2. Support the Legislative Modernization Initiative

As part of the Legislative Modernization Initiative, the House has been building technology to provide Members and staff with rapid access to the impacts that proposed amendments have to an underlying bill, and how proposed legislation would change the law. When complete, this technology project offers to provide tremendous insights to Congress and the general public concerning the effects of proposed legislation. We recommend that you endorse this aspect of the Legislative Modernization Initiative and encourage the House to put sufficient resources into

using technology to show in real time how an amendment would change a bill and a proposed bill would change the law.

3. Establish a Public Information Advisory Committee for the Library of Congress

The Library of Congress is proud of its reputation and role as the largest library in the world. The Library plays an important role in providing information about Congress to Congress and the general public (such as through the website Congress.gov), but the Library — at least in our experience — has not prioritized its role as a source of data and is not in regular contact with civil society, especially with those with expertise in facilitating public access to congressional information. This is a missed opportunity.

Other legislative and executive branch agencies and entities regularly meet with civil society stakeholders to share information and provide a foundation for collaboration. For example, the Legislative Branch Bulk Data Task Force meets quarterly concerning bulk access to congressional data, the Advisory Committee on the Records of Congress semi-annually convenes congressional historians, and the Federal Depository Library Council is an ongoing point of contact for depository libraries. In the executive branch, the FOIA Advisory Committee meets monthly as a point of focus for FOIA practitioners and agency officials, the Archivist regularly meets regularly with civil society, and so on.

To our knowledge, however, the Library of Congress does not have any regular mechanism by which it convenes public and internal stakeholders to share information on its legislative information activities. We recommend that such an advisory body be established with broad internal and external stakeholder representation that would hold regular public meetings where a productive interchange can take place. Accordingly, we urge that you recommend the creation of a Library of Congress Public Information Advisory Committee.

4. Improve Influence Disclosure for Lobbyists and Outside Witnesses

The House requires lobbyists and witnesses before Congress to disclose information as part of its ethics regime, but does an inadequate job of releasing that information in a way that actually empowers decision-makers and the public to evaluate conflicts of interest. The House should address how lobbyist and witness disclosures are released by requiring the publishing of that information as data.

Lobbyists: The Honest Leadership and Open Government Act requires the filing of regular reports with the Clerk of the House concerning lobbying activities. Some reports are filed by individual lobbyists, other reports are filed by the entities that they work for. Because of the way that lobbyists file, it can be difficult to track lobbyists who work for multiple entities at the same time or over the course of their career.

Lobbyists can be tracked by how they type in their names. It is not unusual, however, for lobbyist names to be represented in different ways. At different times a form field identifying a lobbyist could be filled out as "Joan Smith," "Joan S. Smith," "Joan Samantha Smith," as well as containing various typographical errors, omissions, and name changes. All lobbyists receive unique identifiers

for each chamber — a series of letters and numbers that belong only to that lobbyist and is maintained by the House or Senate — but that information is not currently used to verify or track an individual lobbyist's identity in a public-facing way. The House of Representatives should publish that data field — the unique identifier — alongside all the other data fields it already releases. The Select Committee should encourage the House Administration Committee to direct the Clerk to make this happen.

Witness Disclosure Reports: House of Representatives Rule XI, clause 2, subsection (g)(5) requires witnesses appearing in a nongovernmental capacity before a committee to disclose any Federal grants or contracts, or contracts or payments originating with a foreign government, received during the current calendar year or either of the two previous calendar years by the witness or by any entity represented by the witness and related to the subject matter of the hearing. It also defines what specifically must be disclosed, and requires those statements must be made publicly available in electronic form with appropriate redactions no later than one day after the witness appears.

Congressional committees in implementing this language are using PDF forms to gather the information and post it on their individual committee webpages. While there has been an improvement in the move to digital forms to create these PDFs, it is still insufficient to meet the purpose of the rule, which is to track when witnesses who are testifying before Congress have received money from foreign governments. The information disclosed in the House-wide form should be gathered in a structured data format and be made available to the public in an online searchable, sortable, downloadable database that can be tracked by witness, the organization they represent, and the contract or grant they have received. This central database will fulfill the purpose of the original rule. The Select Committee should encourage the House Administration Committee to direct the Clerk to disclose information gathered in witness disclosure forms in a central database.

5. Explore Creating a Congressional Digital Service

The demands upon Congress have increased geometrically, but the institution has cut its own capacity and relies on technology ill-suited to meet those demands. In part, this is because governance of and resources for technology are diffused throughout the institution. This could be addressed by creating a digital team dedicated to building a twenty-first century Congress that identifies and tackles the big, institution-wide problems and works with stakeholders inside Congress to help tackle them.

Congress needs a constantly evolving set of tools and technologies to continue to operate as a world class legislative body. There is a bipartisan proposal to create such a digital service, modeled after the executive branch's 18F and U.S. Digital Service, proposed by Reps. Steny Hoyer and Kevin McCarthy. The Select Committee should explore implementing a solution like the Congressional Digital Service by holding hearings and engaging with civil society experts.

6. Review and Improve Cybersecurity Practices

Members of Congress, their staff, and support offices and agencies are subject to ongoing and persistent cybersecurity threats. Congress created the Senators' Personal Cybersecurity Working Group, which issued a non-public report towards the end of last year, as well as directing the Senate Sergeant at Arms to devote resources to Office Cybersecurity.[5] The House Chief Administrative Officer reported CAO blocked over the course of a month 1.6 billion unauthorized scans and 12.6 million questionable emails.[6] It is our belief that there is insufficient protection for the non-official side of members of Congress and staff — their personal email accounts, phones, Facebook pages, etc. In addition, these aspects traditionally have been viewed as out of scope by Congress's cybersecurity teams because of how they interpret the law.

We recommend that the Select Committee ask the House General Counsel, in conjunction with CRS, to provide a review of the laws, regulations, and internal policies and practices that may be viewed as preventing the use of cybersecurity measures to protect the non-official accounts of Members and staff. We further recommend that the Select Committee review existing cybersecurity measures and request a new GAO or House IG review of institutional cybersecurity practices. This study should review protection of non-official accounts, especially those regularly used in the performance of congressional duties, and generate a set of recommendations for protecting those accounts in a way that would not impair the efforts of congressional staff to perform their duties. To the extent practical, this study should also include a comparative analysis of how congressional cybersecurity compares with that of — or falls short of — industry best practices.

7. Review and Clarify House Open Source Policies

Aside from off-the-shelf products that have been approved under the normal review process, the use and development of free and open source software in Congress has been unduly constrained. Having a permissive open source policy is important because it allows Congress to participate in a broader software development ecosystem. In addition, it allows the public to iterate on technology developed by the government. It also is a living demonstration of an ethos of openness and innovation inside the legislative branch.

For Congress specifically, there are three sets of interrelated issues. First, to what extent may Members of Congress or congressional staff communicate regarding felt needs for software? For example, may they communicate regarding bugs, feature requests, or software they wish to see developed? Second, to what extent may congressional offices use open source software developed elsewhere or collaborate on software development? And finally, to what extent may congressional offices publish or release code developed inside Congress?

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[5] See, e.g., S. Rept. 115-274.
https://www.congress.gov/congressional-report/115th-congress/senate-report/274/1.
[6] See: CAO Philip G. Kiko's testimony before the House Appropriations Legislative Branch Subcommittee, March 2019.
https://docs.house.gov/meetings/AP/AP24/20190312/109069/HHRG-116-AP24-Wstate-KikoP-20190312.pdf.

As the House rules are murky concerning the use of official resources, the Committee on House Administration, in conjunction with the House Ethics Committee and whatever other bodies are appropriate, should promulgate guidelines concerning the use of open source software.

Just like in the executive branch, which has a source code policy and publishes code online at code.gov,[7] Congress should adopt a bias towards openness. It should also consider policies that mitigate the risks of being locked in to proprietary systems and formats. Moreover, there is the potential for significant financial savings arising from the reuse of code across multiple entities.

8. Ensure a Modernized Congress Is Accessible to all Americans

On the 50th anniversary of the Americans with Disabilities Act, the Census Bureau estimated that the civilian noninstitutionalized population with a disability in the United States at 40.7 million people.[8] Just as the Congress has ensured that its physical edifices must be accessible to all constituents, the digital infrastructure that the institution creates should be open and accessible to all.

While structuring legislative data will have a salutary effect on making text and statistics open to all, Congress should take care that the growing adoption and use of social media, live streaming, and other emerging technologies that Members and Committees are using to share information and engage the public are accessible to all. In practice, that will mean measures like adding closed captioning for the hearing impaired to videos or text transcripts for audio-visual content. Popular social media platforms like Twitter, Facebook and YouTube all have features that enable offices and committees to annotate images and videos or create transcripts.

Where such accessibility features don't exist within the apps or services of today, or the emerging technologies of the future, Members and Committees should ensure that accessible content is always posted on their websites. And consequently, the Office of Compliance should be charged with identifying best practices and evaluating compliance with those practices.

9. Increase Awareness and Skills to Make Use of Existing Resources

As the scope and complexity of legislative and oversight duties have increased, substantive resources to help Congress do its job have not kept pace, leaving lawmakers and staffers increasingly dependent on think tanks, advocates, and the media for information.

Many staffers and lawmakers are unaware or not equipped to make use of the numerous information resources that are available to them. For example, the Library of Congress has a contract with the mapping and spatial data analytics company, ESRI, making valuable data and mapping tools available to all of Congress. These capabilities, in the hands of properly trained staff,

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[7] "Memorandum for the Heads of Departments and Agencies," M-16-21, U.S. Chief Information Office. https://sourcecode.cio.gov/.
[8] "Anniversary of Americans With Disabilities Act: July 26, 2018," U.S. Census Bureau, June 6, 2018. https://www.census.gov/newsroom/facts-for-features/2018/disabilities.html.

would allow a committee to produce district-by-district maps of current conditions relevant to an area of inquiry before a hearing and to monitor changes over time.

As the executive branch proceeds with implementation of the DATA Act and the Foundations for Evidence-Based Policymaking Act, there will be increasing opportunity and need for Congress to incorporate data and evidence into the policymaking and oversight process.

We recommend that you ask the Library of Congress to undertake an inventory of resources available to Congress, with an emphasis on technological resources. This inventory should inform an upskilling strategy to offer relevant training for congressional staff in conjunction with the Congressional Academy. The committee should consider a certificate program for staffers who acquire relevant skills, to allow these to be considered in hiring and promotion decisions.

II. A METRICS-ORIENTED FRAMEWORK FOR MODERNIZING CONGRESS'S IT

We believe that the menu of options included above would help the Select Committee make a strong start on technology-related issues. It is by no means a complete list of technology-related improvements, and it is focused on items that are actionable within the next 90 days.

We recommend that the committee additionally develop metrics to be used not just over 90 days but potentially over the next decade to determine whether technological modernization in the legislative branch is moving in the right direction. Modernization must have demonstrable value — this is how we can figure out whether we are succeeding and what items provide the greatest return on investment. We have put together the following framework, based on creating Key Performance Indicators (KPIs) for different problem areas, as a starting point. By no means is there only one way to evaluate progress, or that these KPIs are the *right* ones to select. But we hope this will put you down the right path to develop metrics of your own.

Although the use of KPIs is ubiquitous across large organizations, the framework is somewhat complex and we welcome the opportunity to discuss it in greater depth.

Area	Objective	KPI (Metric)
Constituent Services	Constituents should be satisfied with the services they received from Congress.	Track the Net Promoter Score (which measures customer experience) of constituents who use congressional constituent services (e.g. casework).
Constituent Services	Constituents should be satisfied with the services they received from Congress.	Formula: How many constituents reached a final disposition on their request (drop out rate) times the average time it took to reach the final disposition

Constituent Services	Staff time spent assisting constituents with their needs should be efficiently used.	Formula: Total number of constituents helped divided by (the average time necessary to help each constituent multiplied by the seniority of the staff required to provide assistance)
Vendor Management	Create a healthy, competitive environment for vendors to do business with Congress.	Track time-to-contract for vendors, and reduce by ___ days by FY ___. Measure congressional satisfaction with provided services.)
Vendor Management	Create a healthy, competitive environment for vendors to do business with Congress.	Track ratio of click rate to the number of bidders for each RFP on the FBO website concerning the legislative branch..
Vendor Management	Create a healthy, competitive environment for vendors to do business with Congress.	Track customer (Member office) satisfaction with contract services provided by CAO, SAA, vendors, etc.
Cybersecurity	Leverage hardened (and private sector quality) cybersecurity infrastructure.	Formula: How many sophisticated cyber attacks are there each quarter divided by (the number of known successful cyber attacks times the level of severity). Breakout by category.
Cybersecurity	Leverage hardened (and private sector quality) cybersecurity infrastructure.	Resilience against multiple forms of penetration testing. Formula: number of staffers/offices attacked divided by (successful attacks times the severity of the attack)
Cybersecurity	Leverage hardened (and private sector quality) cybersecurity infrastructure.	Staff adoption of baseline cybersecurity best practices and cyber hygiene (e.g. MFA, encrypted devices and communications, VPNs, etc.)
Employee Satisfaction	Create an environment where Congress attracts, retains, and develops a talented workforce.	Track retention rates for staff broken out by age, race, gender, and educational attainment cross tabulated against committees, personal offices, leadership, support offices, etc. Track by role held.
Employee Satisfaction	Create an environment where Congress attracts, retains, and develops a talented workforce.	Create a model for what the demographics/educational attainment/expertise of a professional congressional staff workforce looks like and compare it to new hires made in the actual work force.
Modern Congress	Inform the general public about activities in Congress.	Survey how long it takes (in minutes) an American looking for legislation online to

		answer basic questions about Congress, such as what hearings are happening this week, or where to find a bill, or how to learn more about an issue before Congress. Same metric for professionals who deal with Congress on more complex data.
Staff access to information	Congressional staff should have easy access to information generated or retained by Congress for legislative duties	Identify several tasks that staffers commonly would have to answer and randomly sample staffers on how long it takes to accomplish.
Staff access to information	Strengthen resources for Members and committee staff to gather expert nonpartisan policy information	Look at the rate of change in the number of unique citations to expert, scholarly, or congressional support resources in committee reports
Staff access to information	Congressional staff should be able to access and make productive use of available information resources	Survey staffers to measure awareness and comfort using existing resources

We look forward to working with you as this process unfolds.

Sincerely,

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