



COLLECTIVE INTELLIGENCE
AND GOVERNING SERIES

THE OPEN POLICYMAKING PLAYBOOK

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The GovLab series on Collective Intelligence and Governance publishes original research on the use of new technology to enable more effective public problem solving by groups of people working together.

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EXECUTIVE SUMMARY

To address today's complex social challenges requires developing a better understanding of the problems as people experience and perceive them across communities as well as identifying innovative solutions to those problems by tapping the collective intelligence of diverse and creative experts. Collective intelligence is a powerful tool for developing better policy. When used well and by taking advantage of the efficiencies of new technology, such engagement can foster a two-way conversation about both problems and solutions that can lead to more informed and, thus, more effective and legitimate policymaking.

The Governance Lab at New York University, an action research organization that studies, designs and develops new technologies and processes for smarter governance, *recommends eight tech-enabled dialogic mechanisms for open and engaged policymaking to take advantage of collective intelligence*. Rooted in both empirical research and practice, these recommendations focus on processes that have a proven track record for efficient and effective policy consultation on hard issues and are optimally suited for use in connection with challenging policymaking issues.

We divide our recommendations into *four stages of the policymaking process (Understanding the Problem, Developing Solutions, Drafting, and Evaluation and Assessment)* with each recommendation describing a process for obtaining the information and expertise specifically needed at that stage.

Hence Recommendations 1 and 2 are strategies for understanding problems collaboratively and at scale when the distributed experience of a large number of people can give policymakers a more robust and detailed picture of the challenges, as people perceive them. Recommendations 3 through 5 focus on ways of developing solutions using collective intelligence. These processes focus on obtaining innovative solutions to identified problems using distributed expertise and are designed to elicit practical answers rather than simply opinions. Recommendation 6 addresses building legitimacy in the policymaking process through drafting policies with a wider "crowd" and providing an outlet for public opinion. Recommendations 7 through 8 address the final stage of the policy-making process, namely evaluation and ex-post assessment.

Recommendation 1 – Use AI-clustering to understand problems at scale

Recommendation 2 – Use a representative citizen panel to understand problems

Recommendation 3 – Use open innovation to craft innovative solutions

Recommendation 4 – Use a prize-backed challenge as an incentive

Recommendation 5 – Use “Smarter Crowdsourcing” to get expert input

Recommendation 6 – Use an annotation platform to write policy together

Recommendation 7 – Use online social auditing to evaluate policy

Recommendation 8 – Use telephone town halls for a low-tech approach

We illustrate how these recommendations can be implemented using the example of three policy issues surrounding the deployment of Autonomous Vehicle (AV) technology in our communities: safety, liability, and access.

The deployment of AVs creates the potential to transform society by “reducing crashes, alleviating congestion, diminishing pollution, and increasing mobility while improving travel time.”¹ The National Highway Traffic Safety Administration (NHTSA) estimates that 94 percent of vehicle crashes are due in some measure to human error, and projects that some 80 percent of these could be mitigated or eliminated by the application of automation.² In addition to improving safety, AVs may also increase mobility and create economic and social opportunity for the underserved, including low income, disabled, and elderly communities.³ However, challenges abound, including concerns about safety, liability and access as well as environmental impact, urban sprawl, private and public economic and job loss.⁴ Indeed, addressing the challenges of AVs requires developing a better understanding of the problems as people experience and perceive them across communities and identifying innovative solutions to those problems by tapping the collective intelligence of diverse and creative experts. Since 2012, at least 41 states and D.C. have considered legislation related to autonomous vehicles and 29 states have

1. Kentucky Transportation Center. (2017). Analysis of Autonomous Vehicle Policies. Retrieved from https://uknowledge.uky.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=2577&context=k-tc_researchreports

2. Iowa Department of Transportation. (2017). *Automated Vehicles Technologies Project: Vision Document*. Retrieved from https://www.iowadot.gov/pdf_files/IowaVisionDocument.pdf

3. U.S. Department of Transportation, National Highway Traffic Safety Administration. (2017). *Automated Driving Systems: A Vision for Safety 2.0*. Retrieved from https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/13069a-ads2.0_090617_v9a_tag.pdf

4. Kentucky Transportation Center. (2017). *Analysis of Autonomous Vehicle Policies*. Retrieved from https://uknowledge.uky.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=2577&context=k-tc_researchreports

already passed AV legislation.⁵ To help formulate AV policy, the U.S. Department of Transportation has already called for “engagement with senior citizen communities, accessibility and disability groups”⁶ - an endeavor open policymaking is well-suited to support to ensure the millions of people whose lives will be impacted by AV technology have their voices heard in AV policy formulation.

Now to go beyond current practices and leverage the collective intelligence of an organization’s existing capacity, the organization should harness new technology and engagement methods to conduct what we term “open policymaking,” namely developing policy using collective intelligence and the distributed wisdom and know-how of a diverse public. Thus, in this report, we discuss each of these recommendations in depth with reference to examples of how these methods have been used elsewhere and the obtained results. We provide specific guidance with regard to implementation, including staffing, timing, choice of platform and process design tips, and how to use these methods to get more people to respond; obtain diverse, innovative and unexpected ideas; go beyond screeds and rants; and increase legitimacy and effectiveness of policymaking through more active and engaged listening.

Please note: the various technologies referenced throughout this report are recommended based on their potential to support open policymaking practices - in recommending these technologies, we are in no way endorsing the companies behind these technologies, nor are we implying that other technologies cannot adequately address or meet the needs for these specific use cases. Where possible, we have showcased open source technologies, or technology that can be modified and shared because it is made publicly accessible, that can be more easily customized. We derive no financial benefit from these technology providers.

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5. National Conference of State Legislatures. (2018). *Autonomous Vehicles: Self-Driving Vehicles Enacted Legislation*. Retrieved from <http://www.ncsl.org/research/transportation/autonomous-vehicles-self-driving-vehicles-enacted-legislation.aspx>
 6. U.S. Department of Transportation. (2018). *Public Listening Summit on Automated Vehicle Policy: Summary Report*. Retrieved from <https://www.transportation.gov/sites/dot.gov/files/docs/policy-initiatives/automated-vehicles/314091/usdot-public-listening-summit-automated-vehicle-policy-summary-report.pdf>

THE VALUE PROPOSITION FOR OPEN POLICYMAKING

Open policymaking enhances both the effectiveness and legitimacy of policymaking. As we know from restaurant reviews on Yelp and medical discussions on WebMD or from reading entries on Wikipedia, productive knowledge is widely distributed. People have diverse forms of expertise which informs those activities, from lived experience to professional know-how. The value of more open and engaged policymaking is that it leverages this collective intelligence to produce more informed and higher-quality policy, that is, policy that responds to real problems with solutions that work.

People possess *credentialed* expertise that can be tapped to improve policy development (e.g., engineers, mechanics and economists). An example is the [Peer-to-Patent](#) platform, which invites participation from scientists and engineers to review patent applications to improve the quality of issued patents.

People also possess *lived experience* that can inform policymaking with real world know-how (e.g. commuters, taxi drivers and riders). An example is [PetaBencana](#), a real-time, crowdsourced, flood-mapping system which is programmed to react when someone tweets the word ‘flood.’ PetaBencana automatically replies and asks them to confirm the tweet with geo-tagged photos. The platform then combines all incoming reports with official data from public sources to build an up-to-the-minute, online flood map, which is then made publicly available to both citizens and public authorities. Real-time community-led data collection, sharing, and visualization allow PetaBencana to reduce flood risk and assists in relief efforts in Indonesia, India and Florida for millions.

Participant self-selection yields *diverse participation* by identifying new kinds of experts. An example comes from [TopCoder](#), which held a two-week competition to generate “a tool which would calculate the edit distance between a query DNA and the original DNA string.”⁷ The challenge offered a \$6,000 prize and yielded 733 participants from 69 countries. Participants submitted 89 novel solutions, 30 of which exceeded the benchmarked performance of the US National Institutes of Health. None of the

7. McKeown, Jim. (2013, February 7). TopCoder’s Open Community Challenge Process Yields 970 Fold Increase in Speed for Big Data Genomics Sequencing Algorithm. Cision PR Newswire. Retrieved from <https://www.prnewswire.com/news-releases/topcoders-open-community-challenge-process-yields-970-fold-increase-in-speed-for-big-data-genomics-sequencing-algorithm-190258111.html>

participants were academics or industrial computational biologists, and only five described their backgrounds as being inclusive of research and development or life sciences in any capacity.⁸

Participant *selection* - including curated invitations or random population sampling - offer the added benefit of enhancing the legitimacy of a process. An example is the **Irish Citizens' Assembly** (called An Tionól Saoránach in Irish). This deliberative exercise took place from October 2016 through April 2018 to assist the Irish Parliament on five pre-determined issues, including topics like climate change and an aging population. The Assembly consisted of 99 members of the public and one Chairperson. The members of this so-called "mini-public" were selected through a polling company and were broadly representative of the population in terms of age, gender, social class, and regional spread.⁹ Over an 18 month period, the Assembly met on weekends for live streamed public proceedings to hear presentations from experts, the public, and civil society and advocacy groups before voting on issues. Recommendations based on the majority view of the Assembly were presented to Parliament who would provide a response to the recommendations. For the recommendations which were approved, the Parliament would provide a timeline for when that issue would be brought as a public referendum. While reports have not been finalized for the final two issues, the recommendation for the first issue debated - the Eighth Amendment to the Constitution - was accepted by Parliament and put to a public referendum on May 25, 2018, which passed by a majority of 66.4 percent.¹⁰

In addition to improving *policy effectiveness*, engagement also improves policy legitimacy; in particular, "digital communication technologies point toward innovative ways of spanning the distance between everyday experience and democratic governance."¹¹ Public engagement enables policy to be made with the benefit of public input and that procedural enhancement creates the mechanism for inferring consent to the policies that are being made.

Failure to take adequate account of public concerns around the various ramifications of policy issues could lead to opposition to policies once enacted. Furthermore, the value of public engagement is

8. Lakhani, Karim & Boudreau, Kevin & Loh, Po-Ru & Backstrom, Lars & Baldwin, Carliss & Lonstein, Eric & Lydon, Mike & McCormack, Alan & Arnaout, Ramy & Guinan, Eva. (2013). Prize-Based Contests Can Provide Solutions to Computational Biology Problems. *Nature Biotechnology*. 31. 108-11. 10.1038/nbt.2495.

9. involve UK. The Irish Citizens' Assembly / An Tionól Saoránach. Retrieved from <https://www.involve.org.uk/resources/case-studies/irish-citizens-assembly-tion%C3%B3l-saor%C3%A1nach>

10. An Tionól Saoránach. The Citizens' Assembly Fact Sheet. Retrieved from <https://www.citizensassembly.ie/en/About-the-Citizens-Assembly/CA-Fact-Sheet-June-2018.pdf>

11. Mitozo, Isabele and Francisco Paulo Jamil Marques. (2019). Context Matters! Looking Beyond Platform Structure to Understand Citizen Deliberation on Brazil's Portal e-Democracia. *Policy & Internet*, vol 9999. Retrieved from <https://doi.org/10.1002/poi3.196>

rooted in the interplay between legitimacy and effectiveness as policies that achieve their stated purpose will also enjoy greater acceptance, buy-in and loyalty.

The International Association for Public Participation summarizes the legitimacy-building value of public engagement in its list of seven core values:¹²

1. Public participation is based on the belief that those who are affected by a decision have a right to be involved in the decision-making process.
2. Public participation includes the promise that the public's contribution will influence the decision.
3. Public participation promotes sustainable decisions by recognizing and communicating the needs and interests of all participants, including decision-makers.
4. Public participation seeks out and facilitates the involvement of those potentially affected by or interested in a decision.
5. Public participation seeks input from participants in designing how they participate.
6. Public participation provides participants with the information they need to participate in a meaningful way.
7. Public participation communicates to participants how their input affected the decision.

To work well, open policymaking should be designed to elicit the needed information at the right time and combine multiple opportunities for engagement.¹³ Different approaches and methods should be used depending on what the specific goals of the open policymaking processes are. If the goal is to define and understand the problem, methods should be used that attract widespread forms of lived experience from larger numbers of people. If the goal is to identify and design solutions, methods should be used that attract diverse and innovative thinking from smaller numbers with relevant expertise. If the goal is to draft a policy openly, methods should be used that promote constructive collaboration by those with the time to invest. If the goal is to assess and evaluate what does and does not work, methods should be used that encourage all "hands-on-deck" and provide feedback from all relevant communities.

12. International Association for Public Participation. *IAP2 Core Values*. Retrieved from <https://www.iap2.org/page/corevalues>

13. Mitozo, Isabele and Francisco Paulo Jamil Marques. (2019). Context Matters! Looking Beyond Platform Structure to Understand Citizen Deliberation on Brazil's Portal e-Democracia. *Policy & Internet*, vol 9999. Retrieved from <https://doi.org/10.1002/poi3.196>

PHASES AND RECOMMENDATIONS

The eight recommendations to create open and engaged policymaking are distributed across four phases into which any policymaking cycle can be split: *Understanding the Problem, Developing Solutions, Drafting, and Evaluation and Assessment*.

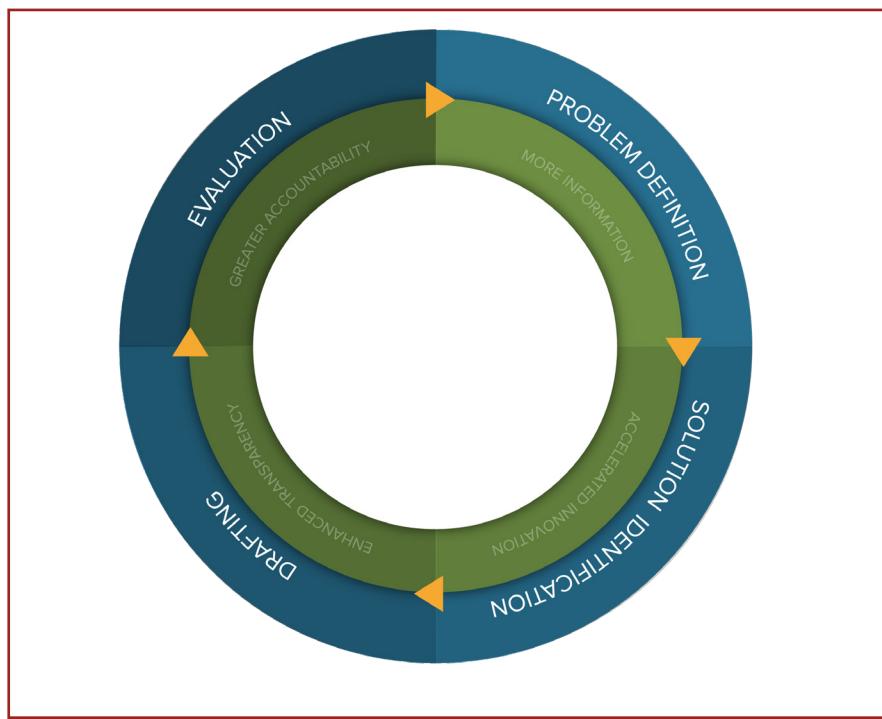


Image: Policymaking cycle.

All four phases are interconnected and completion of each one contributes to the success of the others. Integrating public engagement in all four phases ensures greater legitimacy and effectiveness of resulting policies when created using open policymaking values and practices.

Included in each phase are proposed processes and platforms that can be used to achieve the objectives of that phase, examples illustrating real-world applications with lessons learned and specific recommendations of actionable steps for implementation.

Phase 1 - Understanding the Problem

Recommendation 1: Use an artificial intelligence-based platform to define the problem collectively and at scale.

Discussion

The first phase focuses on understanding the problem; rather than request input on solutions, the requests should be reframed to define an actionable and specific problem. This can be done by seeking diverse *lived* and *tacit* experience. When a solution is championed based on a perceived but inaccurate understanding of what the problem actually is, the likelihood of developing solutions that actually work is reduced. Thus, defining the problem is essential to both developing solutions and developing solutions together.

At its simplest level, a three-question survey about problems (what the problem is, for whom it is a problem, and why) can jumpstart a conversation with the public about the underlying problems and their root causes.

Case and Tool: vTaiwan and Pol.is

The vTaiwan experience illustrates well that, to truly understand the problem, we need to seek input from people with relevant first-hand experience. The vTaiwan - or Virtual Taiwan - process is a method for using online tools to develop a shared understanding of a public problem. In Taiwan, 200,000 people have participated in this open policymaking process to define the problem around such complex issues as Uber, telemedicine, online alcohol sales and other hard topics. They have used the process to formulate 26 pieces of national legislation efficiently because they start with a thoroughgoing attempt, first, to describe the problem to be solved so that the resulting policies are responsive.

How do they do it? The vTaiwan process uses a number of different tools, including Pol.is, one of many tools which use artificial intelligence (AI) for “crowdsourced consensus-mining.” Tools that use artificial intelligence to create a scalable conversation about the problem with diverse audiences can be valuable in helping to understand and define a problem.

Pol.is is an open source online platform and discovery tool designed to show areas of consensus and divisiveness and uses artificial intelligence to make the process of obtaining information about the

"dynamics of the issue, the facts of the matter, what is at stake, and who is involved" both efficient and scalable.¹⁴

The problem definition process with the public unfolds in multiple phases. In the first round, organizers, followed by participants, write statements about the problem. In other words, the organizers create sample problem statements to prompt discussion. In the second round, participants are asked to 'Agree,' 'Disagree' or 'Pass' on those statements or indicate "Is This Statement Important to You."

Statements are shown to all participants based on a comment routing system that gives each statement a priority score based on the responses it has received so far. Every person who enters the conversation sees a different ordering of the statements to avoid bias. As voting progresses, the algorithm then finds the underlying structure of the conversation using unsupervised machine learning. The software analyzes the votes and participants are projected onto an opinion landscape based on their vote. A German political party ran a large scale Pol.is conversation with 33,547 people who cast 1,966,989 votes on the topic of what the new platform for the political party should be.¹⁵ The intention was to create the political platform based on the will of its constituents and the party used Pol.is to determine what the majority issues were to then inform the party's program.¹⁶

Since the platform is open source, organizations are welcome to customize the software themselves, to hire a third-party vendor or request customizations from Pol.is. Thanks to the efficiency of the underlying artificial intelligence, running such an exercise can be done by a single staff member working part-time.¹⁷ The standard price for using Pol.is is \$5,000 per month and \$48,000 per year for unrestricted use and unrestricted support from the team. The cost and service-level are negotiable.

14. Atlee, Tom. (2018, April 23). vTaiwan (Part 2) – Notes on Aspects of the vTaiwan Phenomenon. *Tom Atlee Blog*. Retrieved from <http://www.tomatleeblog.com/archives/175327882>

15. Pol.is. *Report*. Retrieved from <https://pol.is/report/r6xd526vyjyjrj9navxrj>

16. Aufstehen. *Become Part of the Movement: Founding Statement*. Retrieved from <https://aufstehen.de/gruendungsaufruf/>

17. Like Pol.is, Moral Machine is another example of how artificial intelligence has been tested to bring public input to bear in formulating AV policy at scale. The Moral Machine is an online experimental platform launched by the MIT Media Lab in 2016 designed to quantify how people react to 'moral dilemmas.' It is a tool designed to guide how AVs might be programmed to act when faced with those dilemmas. Participants are given several scenarios online in which an AV suffers brake failure and asked to choose between the injury or death of two possible groups. Scenarios include variations of car passengers, pedestrians legally and illegally crossing the road, humans and animals, children and elderly persons, athletes and large persons, businesspeople and the homeless, and pregnant women. A challenge typically consists of 13 scenarios. The Moral Machine experiment has received over "40 million decisions in 10 languages from millions of people in 233 countries," and as analysis has shown, different demographics and geographical regions have different preferences on how they would prefer the AV to behave. Awad, Edward, Sohan Dsouza, Richard Kim, Jonathan Schulz, Joseph Henrich, Azim Shariff, Jean-Francois Bonnefon, and lyad Rahwan. (2018). The Moral Machine Experiment. *Nature*, 563. Retrieved from <https://www.nature.com/articles/s41586-018-0637-6>

Tool: Remesh

A second tool that uses artificial intelligence to create conversations to understand a problem is Remesh. Remesh is a closed-source, private platform an organization can use in real-time to measure the opinion of a large group in a synchronous conversation in contrast to Pol.is' asynchronous approach. This tool allows the organization to launch a topic, pose a question, such as asking about the problem, and get people to offer responses, such as suggestions of what the problems are. Like Pol.is, the system "feeds" participants the responses submitted by others in response to the moderator's questions and asks them to vote on how they feel about those responses, indicating whether they agree or disagree with other participants' responses. The AI analyzes those responses and shows the facilitator in realtime a dashboard grouping the responses and how participants felt about the responses.

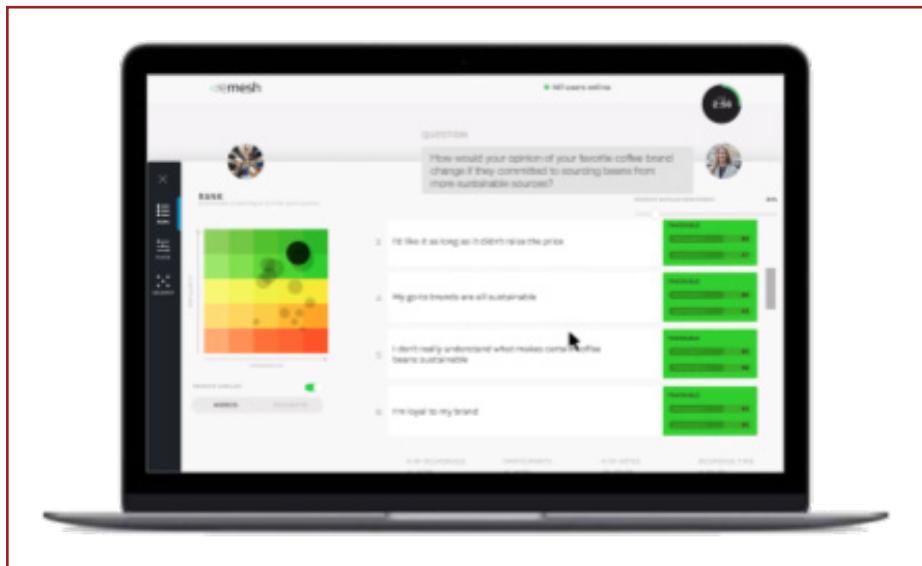


Image: Dashboard of Remesh.AI

Moderators can chat freely with participants, pose open-ended conversations, ask poll questions, and display media. The artificial intelligence helps to organize the content efficiently. The moderator of the conversation receives highly visual analytics in real-time explaining where sentiment is on the issue and how people clustered in response.

Conversations can include up to 1,000 participants and typically cover 25 to 30 questions asked in an hour-long conversation. Multiple conversations can be run in parallel. The cost per conversation is \$2,500 (sometimes discounted for non-profits) and includes full support from Remesh staff throughout the process of developing question guides, soliciting participation, using the Remesh platform, and analyzing the responses. Remesh suggests budgeting 3 to 5 days to plan, execute and analyze a dialogue, including the process of developing questions, having a conversation, and then analyzing the data after the fact.

One large financial services institution used Remesh to have a large-scale conversation on gender inequality. Previously, the organization was using email, surveys, web conferencing, community sites, chat rooms, in-person events and other methods to collect information from people regarding their view of the subject. However, by using so many different tools and having disparate conversations, it was very difficult to synthesize all the research gathered into comprehensive insights in an efficient and meaningful way. To address these inadequacies, the organization used Remesh to have a large-scale conversation with 12,000 employees whose feedback was aggregated into one location, which allowed the organization to use those insights to understand the problem and later define responsive solutions.¹⁸

While similar in structure and objectives, there are distinct features of Pol.is and Remesh that should be considered when determining which platform to use. Essentially, Pol.is facilitates a “many to many” conversation whereas Remesh enables a “many to one” conversation. In Pol.is, a question is posed to participants and a large, aggregated discussion naturally evolves as participants comment on and indicate their support for previously added text, allowing for numerous participants to enter into an open and transparent dialogue with each other. The discussion evolves solely based on participants’ comments and support/disagreement and is participant-driven. Alternatively, in Remesh, a facilitator has a conversation with many participants at once, views an aggregation of responses in real-time, and steers the direction of discussion as they would like by posing new questions to participants. The facilitator has control over the discussion topics and is directing the conversation. Pol.is is better suited for allowing participants to thoroughly review discussions and drive conversation topics, such as when the initial question or topic is very broad, and Remesh is best used when the discussion is intended to be more structured through facilitation and responses to questions can be provided more quickly. In addition to Pol.is and Remesh, there are other, promising AI-based platforms in development which

18. Remesh. Gender Equality Case Study: Real-time Truth Drives Change (on file with authors).

aim to improve prediction accuracy by harnessing the collective intelligence of large groups of people to form predictions which stem from the most common responses to questions and are free of bias.

Tool: All Our Ideas

All Our Ideas is an open source platform designed by Princeton sociologist Professor Matt Salganik that allows anyone to create polls and surveys, public problem statements, and related projects. The intention of All Our Ideas is to combine “the scale, speed, and quantification of a survey while still allowing for new information to “bubble up” from respondents as happens in interviews, participant observation, and focus groups.” This so-called wiki-survey tool presents respondents with a question and the choice between two responses (or I can’t decide). They can also submit an idea using 140 characters or less. When an idea is submitted, it is reviewed by the creator of the survey to monitor for appropriateness, and if it is approved, the idea will start appearing as an option under the corresponding question. Respondents always receive two randomly generated options to choose from in response to the question and no more than two. The tool was originally called “which do you want more?” By having many people complete the two-response survey, however, the tool accurately evaluates and compares ideas, and allows new ideas to bubble up, so that the results accurately reflect collective wisdom rather than being skewed by mechanics of the process. Users can respond to as many questions as they would like or stop at any time, and can submit as many ideas as they’d like. The user can also select “View Results” to see how other participants are voting, including seeing scores for each question and data visualizations. All Our Ideas has been used for over 14,000 wiki survey mechanisms.

Running a problem definition dialog on autonomous vehicles

If using an AI-based platform like Pol.Is or Remesh, engagement needs to begin by reframing questions to focus on asking people about the problems they anticipate rather than the solution. Thus, when pre-populating the platform with questions, instead of asking, “What policies will promote the safety of passengers and those outside the vehicle, including pedestrians and cyclists?” instead ask, “What is the greatest safety risk posed by driverless vehicles, for whom is it a problem, and why?” To focus people on problems rather than solutions, draft sample responses that begin with “The greatest safety problem will be...” Again, pre-populating the answer choices will help people to understand the kind of feedback being sought. For fewer future-oriented problems than AV policy, however, responses could begin with “In my experience, the greatest problem is....” Sample responses should be provided and might include:

- “The greatest safety problem will be that of an urban rider in a shared autonomous car, such as an autonomous Uber, who has no way to know the performance history of that vehicle.”
- “The greatest safety problem is that slow adoption of autonomous vehicles will mean a combination of human and AV drivers on the road, leading to more accidents.”
- “The greatest safety problem will be from the hacking of a vehicle’s controls by outside malicious sources.”
- “The greatest safety problem will be for those in rural areas where lack of infrastructure will result in poor functioning of AV systems that are not yet advanced enough to deal with bad road conditions.”
- “The greatest safety problem is that autonomous vehicle manufacturers and operators do not share or publish data that would enable the whole industry to advance and policymakers to make informed decisions.”

Recommendation 1 at-a-glance: Implementation

■ WHAT IS THE METHOD?

Use an artificial-intelligence based platform to define the problem(s) surrounding AVs and safety, liability, and access collectively.

■ WHAT IS IT INTENDED TO DO?

Allow for a scalable conversation from diverse stakeholders and discern how stakeholders define the major problem(s) in the face of the rise of AVs.

■ HOW DOES IT WORK?

- Create different spaces for specific topics (safety, accessibility, and liability) on the AI-based platform to facilitate conversations that collectively define the problem(s) surrounding each topic.
- Solicit participation from across all stakeholders to provide comments and contribute to the discussions.
- Provide guidance on what content is helpful and how submissions should be framed (see above for specific examples). Instructions should be framed so comments focus on identifying the problems rather than identifying solutions to perceived but unconfirmed problems.
- Designate a point person to moderate each of the three discussions (safety, liability, and access) to help guide the conversation and monitor for off-topic content. The AI-based platform will use algorithms to aggregate and analyze the conversations and assist in determining which problem definitions are the most popular and most representative of the participation.
- These problem-definitions can then be used in the activities in Phase 2 - Finding Solutions.

■ PLATFORMS

- | | | |
|-----------------|----------|-------------------|
| • Platforms | • Pol.is | • Wikisurvey |
| • All Our Ideas | • Remesh | • Your Priorities |

■ HOW MUCH TIME AND MONEY ARE REQUIRED TO SET UP AND RUN?

AI-based platforms are moderately priced and require the effort of a part-time staffer to set up and moderate.

■ PROS

This activity works at scale to aggregate ideas and has a low per-person cost.

■ CONS

The activity needs to be framed correctly to yield productive comments and light-touch moderation is required to ensure conversations stay on track. It should always be followed by a communications strategy to communicate what was learned and a solution-identification exercise.

Recommendation 2: Use a “Citizen Panel” to help the public articulate and prioritize problems

Discussion

Developed in 1971 by the [Jefferson Center](#) in Saint Paul, Minnesota and modeled on the idea of the criminal jury, the Citizen Jury process involves recruiting and randomly selecting a demographically representative community group to study, deliberate, and make recommendations on an issue. A Citizen Jury (sometimes called a Citizen Panel) is designed to “help restore legitimacy, hope, and trust to collective decision-making.”¹⁹ In contrast to the self-selection of participants who volunteer to join in Recommendation 1, the Citizen Jury method relies on sortition or selection of demographically representative participants. Here participants are a statistical microcosm of the larger community. The group selected is generally on the order of 12 to 24 people and meets over a period of two to seven days. This can be done with multiple people or even larger groups. The panel is provided with unbiased background information to inform a facilitated conversation to allow the group to understand the issues and generate high quality statements of the problem through dialogue and voting. (Deliberative Polling is a related method that uses a larger representative sample and measures how people change their mind during the process. It is not designed to produce a policy outcome).²⁰

Case: NHS England

NHS England used [Citizen Juries](#) to understand the problems involving health record privacy. In January 2016, the Jefferson Center ran a series of Citizen Juries for the NHS in Manchester, UK over the course of two weekends with a different selection of 17 jurors attending each three-day jury. At each event, residents had the chance to hear from and ask questions of expert witnesses on health and data privacy. They identified, discussed, and ranked reasons for and against two main questions: “Should the National Health Service body be allowed to create these records about you and other patients?” and “Given your answer to question 1, who should be allowed to access and extract data from the records created?” By delving into the problems as people experience them and getting their detailed input, these events helped the NHS Information Commissioner craft more informed policies on healthcare record privacy.

19. Jefferson Center. (2019). *How We Work / Citizen Juries*. Retrieved from <https://jefferson-center.org/about-us/how-we-work/>

20. Center for Deliberative Democracy. *What Is Deliberative Polling?*. Retrieved from <https://cdd.stanford.edu/what-is-deliberative-polling/>; Fishkin, James S. (2011). When the People Speak: Deliberative Democracy and Public Consultation. Oxford Scholarship Online. Retrieved from DOI:10.1093/acprof:oso/9780199604432.001.0001

Case: South Australia

Another case of Citizen Juries is South Australia's use of this methodology in a blended online and offline process used to find innovative ideas to improve safety for cyclists in 2014. The Citizen Jury, entitled "Sharing the Roads Safely," comprised 37 randomly selected but demographically representative citizens of South Australia. Over one month's time, the Citizen Jury met five times face-to-face and received expert and public opinion and information on relevant topics online to enable them to become well-informed so they could ultimately define the problems and create recommended solutions.



Image: Screenshot of YourSAy, Australia

Advocacy groups and individuals submitted information online via a platform called YourSAy to inform the jury deliberations. YourSAy is an online consultation hub in South Australia that hosts online discussions, surveys, and polls for residents to engage with the South Australian government. There were also social media discussions (including a Twitter Chat) on the topic that were shared with the Jury for consideration. An independent facilitator moderated the online conversations with the Citizen Jury and later provided guidance on how to make use of what was learned for the organization. The Jury submitted a report to the South Australian Government with its discussion of the issues and problems along with suggested recommendations. In the end, the government created two new cycling laws and the State appropriated an AUS \$6.5 million budget over a period of four years for better cycling infrastructure.²¹

21. yourSAy. (2015). *Sharing the Roads Safely*. Retrieved from <https://yoursay.sa.gov.au/decisions/sharing-our-roads-safely/about>

A Citizen Panel or online Citizen Jury does not require fancy custom software to run. A web conferencing platform like Zoom will suffice to organize the communication. Zoom costs on the order of \$80/month with the ability for multiple people to set up online conferences and the option for participants to connect by phone as well as via the web. Additional charges may apply depending on features.

Recommendation 2 at-a-glance: Implementation

■ WHAT IS THE METHOD?

Use a Citizen Jury to convene a demographically representative group to define the problem(s) around AVs and safety, liability and accessibility.

■ WHAT IS IT INTENDED TO DO?

Provides a representative and diverse group of people with time and resources to study the issues and articulate what problems should be addressed in future policy.

■ HOW DOES IT WORK?

- Identify, solicit, and recruit participants for a Citizen Jury or Panel or similar sortition mechanism. The goal is for the Jury to determine what the most pressing problems are for stakeholders regarding the rising prominence of AVs and to create a formal report on what problems should be addressed through policy.
- Ideally, the Jury would consist of 25 members and meet online, off or both at least four times.
- An independent facilitator would be present at all meetings to facilitate the discussions and help organize the findings into the three relevant focus areas (safety, liability, and access).
- Prior to the meetings, the Jury should be provided with unbiased information and expert and public opinion on what AVs are, their potential impact on society (both negative and positive), what the commonly accepted challenges are in developing AV technology, an overview of existing public policies on the topic, and why developing policies are being actively considered at this time.

■ PLATFORMS

- Zoom or any group web-conferencing software
- Professional facilitation services

■ HOW MUCH TIME AND MONEY ARE REQUIRED TO SET UP AND RUN?

Part-time staff time is required to solicit participation for the Jury, organize the logistics of meetings, compile resources to be shared with the Jury, and provide a facilitator to oversee the Jury meetings.

■ PROS

A representative sample in the Citizen Panel adds legitimacy to the process, which becomes well-suited to understanding problems because it leverages a diverse group.

■ CONS

- Identifying and selecting a statistically random sample can be a hard job. It may be helpful to hire a third-party to help.
- There can be a high per-person cost because of the small size.

Additional considerations for Phase 1 - Understanding the Problem include:

- Focus tightly on policy issues
- Frame both questions and responses to focus on problems not solutions
- Define the terms of the debate
- Provide specific terms, definitions and statistics
- Run moderated focus groups online and offline
- Record problems and share them to invite comment on them
- Where appropriate, use social media to invite people to pinpoint problems

Phase 2 - Developing Solutions

Recommendation 3: Use an open innovation platform to get innovative ideas from diverse sources.

Discussion

Henry Chesbrough, now a professor at the Haas School of Business at the University of California, Berkeley, popularized the term “open innovation” in 2003 to describe the distributed process of working across organizational boundaries to accelerate innovation.²² While originally used to describe how firms innovate using the external ideas of employees, suppliers and customers, open innovation has become commonplace in public institutions over the last decade. Around the world, institutions are turning to open innovation for good ideas for how to solve problems or supply information and solutions - what might otherwise be referred to as brainstorming or ideation. The federal government’s open innovation platform [Challenge.gov](#) has hosted over 1,000 such challenges since 2010 and tackled hard problems such as improving methods to find asteroids that could threaten Earth to removing sediment from reservoirs. With regard to task-oriented outcomes, the open innovation literature shows that when average participants are asked to perform technical tasks with specific instructions, their performance is equal to or better than the performance of experts.²³

By crowdsourcing the collective intelligence of a large, spatially-separated and diverse group of people, open innovation platforms convene expertise which could otherwise not be organized. There are numerous examples of open innovation in practice, such as using an existing platform and online community like [InnoCentive](#) or [Kaggle](#), or learning from those experiences to set up your own challenge platform with your own members using open source software like [Your Priorities](#) or proprietary software such as [Brightideas](#) or [Spigot](#). For a cloud based version, Your Priorities costs are very reasonable and on the order of a few hundred dollars a month and costs for a fully customized and installed version with full support are clearly outlined and also negotiable. Brightideas costs \$30,000 per year for up to 1,000 users.²⁴

22. Chesbrough, Henry W. (2003). Open Innovation: The new imperative for creating and profiting from technology. Harvard Business School Publishing Corporation.

23. Behrend, Tara S., David J. Sharek , Adam W. Meade, and Eric N. Wiebe. (2011). The Viability of Crowdsourcing for Survey Research. *Behavior Research Methods* 43 (3): 800-813. Retrieved from <https://doi.org/10.3758/s13428-011-0081-0>

24. InnovationTools.com. First Look: Brightidea.com transforms idea management into a web service. Innovation Management.SE, Retrieved from <http://www.innovationmanagement.se/imtool-resources/first-look-brightidea-com-transforms-idea-management-into-a-web-service/>

Tool: Innocentive

One tool used by private, public and civic institutions to attract “solvers” with good ideas to solve hard problems is InnoCentive. InnoCentive provides a network, methodology, platform, and expert support to crowdsource innovation from either outside or inside an organization. A method known as Challenge Driven Innovation™ (CDI) is used to identify problems and needs, which Challenge Experts reformulate as Challenges. Challenges clearly define the problem, solution and IP requirements and are shared on InnoCentive’s platform to which Solvers submit solutions over a period of 30 to 90 days. The Challenge can either be shared with InnoCentive’s network of 380,000+ solvers or restricted to an organization’s employees. Solvers are located all over the world and nearly 60 percent are educated to Masters Level or above.²⁵ InnoCentive helps with framing the problem, handles all communication with solvers and can assist in sorting through solutions to determine winners. The average fee to host a challenge on InnoCentive is \$60,250, including an average fee of \$11,000 to host a challenge, an average cost of \$10,000 for internal staff to write and review challenges, and an average prize of \$39,250.²⁶

Tool: Kaggle

Kaggle is a “crowd-sourced platform to attract, nurture, train and challenge data scientists from all around the world to solve data science, machine learning and predictive analytics problems. It has over 536,000 active members from 194 countries and it receives close to 150,000 submissions per month.”²⁷ A variety of both private and public organizations have hired Kaggle to post challenges spanning a variety of problem areas. For example, Home Depot posted a Challenge searching for an algorithm that would improve search results on their website, and HappyWhale is using Kaggle to find an algorithm to identify individual whales in images to help them monitor whale populations. The host of the Challenge provides a description of the problem and the data needed to solve the problem, and all work is submitted through the Kaggle platform. Submissions are typically scored immediately and posted to a live leader board based on pre-determined criteria, and participants can revise their submissions as many times as they’d like to increase their scores, allowing them to continually innovate better solutions. To incentivize participation, Challenge winners are provided with monetary prizes, awards, free products or job offers. Kaggle charges a fee to host the competition on its platform and

25. InnoCentive. *Premier Challenges*. Retrieved from https://info.innocentive.com/hubfs/premium_challenges_2018.pdf

26. Forrester Consulting. (2010). The Total Economic Impact of InnoCentive’s Enterprise Solution: Challenges, InnoCentive@Work, and ONRAMP. Retrieved from <https://www.innocentive.com/files/node/casestudy/total-economic-impacttm-innocentives-enterprise-solution-challenges-innocentivework-and-onramp.pdf>

27. Kaggle. (2018). *What Is Kaggle, Why I Participate, What Is the Impact?*. Retrieved from <https://www.kaggle.com/getting-started/44916>

encourages prizes be awarded to challenge winners. The typical commercial budget for a challenge is \$85,000 to \$200,000, including a minimum commercial prize of \$25,000.²⁸ The value of using Kaggle is that an organization can find a solution to a challenge in weeks using the crowdsourcing platform, rather than spending months to find a solution with its own employees.

Tool: Loomio

A third tool, Loomio, offers a different approach to developing solutions by leveraging the collective intelligence (often of an organization's employees, but not exclusively) to develop solutions with consensus. Loomio is open source software developed by a social enterprise in New Zealand that can be used for governance, collaboration, or engagement and aims to make it easier for people to participate in decisions that affect their lives. An engagement begins by bringing people together for a collaborative dialogue; any participant can start and comment on discussions. While this is similar to other collaborative problem-definition platforms, Loomio's defining feature, however, is that discussions only come to an end when a participant creates an actionable proposal, such as a solution to an issue. Once a proposal has been submitted, participants state their position by selecting either 'Agree,' 'Abstain,' 'Disagree' or 'Block.' Submitting proposals and receiving responses are how discussions move towards consensus. Loomio presents the deliberation and conclusions side by side in a pie chart which displays the disagreement, forcing participants to view and work through the disagreements to come to a solution with consensus. The monthly price of Loomio is \$49 for small organizations (up to 50 people), \$149 for medium-sized organizations (up to 500 people), \$449 for larger organizations (up to 5,000 people) and is free for unfunded community organizations. Nonprofits receive a 35 percent discount.²⁹

Tool: CrowdGauge

CrowdGauge is an open source tool that uses gamification to show how trade-offs work in city level budgetary decision-making. Users are assigned a number of "coins" that are proportional to the city's available budget for a given period and then decide how to spend the respective coins. The algorithms of the platform correlate to how different sector investments might affect resources in other sectors, e.g., that for every coin spent on education, there will be more teacher positions at the cost of fewer services in other areas, such as police officers on the streets. Residents can submit their preferred budget configuration within minutes. The tool was developed to educate the public about issues as well as involve the public in the related work of defining budgets. Future iterations of this platform have

28. Kaggle. *Meet Kaggle*. Retrieved from https://www.kaggle.com/static/slides/meetkaggle.pdf?Host_Overview.

29. Loomio. *Pricing*. Retrieved from <https://www.loomio.org/pricing>

the potential to allow users to vote on other users' budgets and/or submit popular budgets to governmental bodies for consideration. CrowdGauge can be customized for each city to account for differing laws and resources. CrowdGauge is entirely open-source and free, but additional support and consultation can be provided for a fee.

The screenshot shows a web-based application titled "I want to live in a Greater Des Moines where...". At the top, there is a navigation bar with links: INTRODUCTION, PRIORITIES (which is underlined in blue), IMPACTS, PLAN A SCENARIO, MAP RESULTS, and COMPARE SCENARIOS. To the right of the navigation are links for Credits and Send Feedback. Below the navigation, a large heading "I want to live in a Greater Des Moines where..." is followed by a list of 18 statements, each preceded by a small icon and a five-star rating system. To the right of the list is a cluster of orange circular icons representing various community elements like housing, transportation, and nature. At the bottom left, a message says "You have 2 stars left". The footer contains the text "THE TOMORROW PLAN .com" and the Sasaki logo.

Image: Screenshot of CrowdGauge

Case: Better Reykjavík

An example illustrating how to develop solutions with a crowd online is the [Better Reykjavík](#) experience. In Reykjavík, Iceland, 20 percent of the population uses the Better Reykjavík platform. The program runs using the Your Priorities software created by Active Citizens to contribute solutions to problems for the City, thus “harnessing the creativity and innovation of the broader society.”³⁰ The website is a simple ideation platform where citizens post ideas in relevant topic sub-pages. They can rate one another’s ideas and debate each other in the respective idea’s comment section. A “pros and cons”

30. Hummel, Keiva. (2018, February 16). Recap on Our Tech Tues Feat Iceland's Citizens Foundation. National Coalition for Dialogue and Deliberation, Retrieved from ncdd.org/25627

feature discourages “flame wars” while promoting reasoned arguments simply by encouraging participants to sort and organize their own feedback. The result is a list of solutions and the best arguments for and against the ideas. What is truly novel, however, is not the technology but the process, which requires that the city try to implement the public’s best ideas. Each month, the five top rated ideas are processed in the appropriate government standing committee; hundreds of citizen ideas have been implemented. Now, Active Citizens is exploring the integration of machine learning algorithms to improve participation by giving users personalized recommendations of proposals that might interest them. The open source Your Priorities platform has been used by one and a half million people and is now in use in copycat projects in 20 countries.



Image: Screenshot of Better Reykjavik

Case: Bogota Abierta

An additional example of how to elicit innovation solutions comes from [Bogota Abierta](#). Bogota Abierta is an online civic crowdsourcing platform where the District Government of Bogota, Colombia posts “challenges” for public feedback. Each challenge is centered around a different problem or issue that affects city residents and provides space for citizens to submit solutions, share opinions, “like” other people’s comments, and comment on other people’s comments and submissions. Challenges have included topics such as “How do you imagine a better Bogotá for women?”, “What is your idea to make Bogotá an inclusive and respectful city of LGBTI people?”, “What ideas do you propose for the protection and welfare of animals in our city?”, and “How can we make Bogotá a safer city?”³¹ For the “How do you imagine a better Bogotá for women?” challenge, for example, 124 contributions were submitted,

³¹ Bogota Abierta. *What Is Your Idea for Bogota?* Retrieved from <https://bogotaabierta.co/retos>

analyzed and used in the process to update the Public Policy on Women and Gender Equity (PPMyEG) of the Capital District.³² Bogota Abierta had nearly 1 million visitors in its first eight months and was recognized by the Digital Public Innovation Center as ‘the best digital public innovation in 2016’ and awarded the Indigo+ Award.³³

Case: Decide Madrid

A final example of open innovation to highlight the application of new technology to developing solutions with a distributed audience is [Decide Madrid](#). Decide Madrid is an online portal, launched by the Madrid City Council in 2015, which allows residents to submit proposals for draft legislation, vote on citizen proposals, participate in public dialogue, and engage in participatory budgeting. The portal was designed to increase public participation in democratic decision-making. The software facilitates the engagement of those unable to participate in-person, creating the opportunity for more proposals to be sourced and viewed, and enables users to filter proposals by category, popularity and other factors. Over 400,000 people have used the platform to propose potential solutions to policy challenges for the city council to consider adopting. Two citizen proposals that gathered enough support to be put to a vote and were subsequently approved were on the topics of 100 percent sustainability and free transfers in public transportation from the bus to the subway. Decide Madrid runs atop an open source software platform called [Consul](#) in use in over 70 cities.

Recommendation 3 at-a-glance: Implementation

■ WHAT IS THE METHOD?

Use an open innovation platform to solicit crowdsourced policy ideas from stakeholders. The activity should be designed in the form of a challenge in which prizes, awards, or recognition are provided to winners.

32. Bogota Abierta. *How Do You Think We Could Improve the Mobility Experience in Argentina?* Retrieved from <https://bogotaabierta.co/reto/como-crees-que-podriamos-mejorar-la-experiencia-de-movilidad-en-bogota>

33. Caracol Radio. (2017). Bogota Abierta, the Most Successful Digital Government Initiative in Latin America, Caracol. Retrieved from http://caracol.com.co/emisora/2017/04/04/bogota/1491342048_137447.html

■ WHAT IS IT INTENDED TO DO?

Create an opportunity for diverse opinions and ideas to be submitted in an organized and systematic manner that can then be used to inform policy.

Do broad and targeted outreach to encourage participation, grouping participants by interests, backgrounds, and more. For more guidance, see GovLab's [People-Led Innovation Toolkit](#).

Ensure that solutions are attributed to specific problems by creating different "spaces" for participants to respond to different problems.

Better solutions can be elicited by adding data and detail to these "spaces" to further define a problem.

Once solutions are recorded, ask other participants to rate and evaluate proposed solutions for effectiveness and feasibility, steering away from popularity.

■ HOW DOES IT WORK?

Using a customizable platform for open innovation, create three separate spaces for discussion and suggested solutions on safety, liability and accessibility. Each space should have clear definitions of that topic's previously defined problems and policy considerations. Here are the other choices that need to be made when setting up the open innovation program:

- **Goals** - To innovate potential solutions to the previously defined problems associated with AVs and safety, liability, and access that can potentially be addressed through policy.
- **Eligibility** - Decide the scope and limit of participation.
- **Defining entries** - Create instructions and a template for each phase. See Recommendation 3 for details on what to include in submissions.
- **Two-way communication** - When announcing the challenge, provide participants with literature on why policy is being considered around AVs, what the three topic areas being focused on are (safety, liability, access), and what problems have been defined for each of the three topic areas. Each submission should indicate which specific problem the proposed solution addresses.
- **Marketing** - Experiment with different primes and communication channels to determine which methods will reach the highest number of participants and solicit the most participation. Where applicable, the challenge should be marketed through newsletters, social media, and a stand-alone web page.

■ PLATFORMS

- Your Priorities
- Bright Ideas
- Consul
- Spigot
- Innocentive
- Kaggle

■ HOW MUCH TIME AND MONEY ARE REQUIRED TO SET UP AND RUN?

Part-time staff time will be needed to set up the appropriate spaces on the online platform and sift through the submissions as well as set up and customize the online platform and develop a marketing campaign to encourage participation. Services like Innocentive provide consulting help with defining the challenge. It also provides a ready community of “solvers.” Tools like Your Priorities are open source and customizable for your own users.

■ PROS

This is a relatively inexpensive way to crowdsource diverse and innovative ideas and solutions.

■ CONS

Good marketing and communication are needed to solicit participation or people may not know how to participate. Without an implementation commitment, public engagement can decrease.

Recommendation 4: Use prize-backed challenges, especially two-stage challenges, to create incentives and excitement to participate in innovation challenges.

Discussion

Adding the incentive of a prize helps to create an inducement for participation in an open innovation exercise. Prize-backed challenges also add an element of fun and excitement. Components of a prize process include defining:

- **Goals** - launch the challenge with a clear and compelling articulation of the goal.
- **Eligibility** - dictate clearly who can and who cannot participate.
- **Incentives** - prizes can be extrinsic (e.g., monetary reward) or intrinsic (e.g., recognition) in na-

ture and it is generally recognized that intrinsic rewards are more effective in these contexts.

- **Timeline** - in addition to deciding on dates for announcement, submission, and judging, decide whether the challenge will be one or two stages. A two-stage challenge would involve a first phase to propose good ideas and a second stage to propose an implementation plan for those ideas. The advantage to a two-stage challenge is that it leads to workable, shovel-ready solutions.
- **Submissions** – use an online platform that makes it easy to see and comment on people's submissions.
- **Defining entries** - it is important to explain what submissions need to contain and what people need to do, using a simple and standard template.
- **Two-way communication** - provide data or tutorials to participants.
- **Marketing** - to succeed, people need to be aware of the opportunity to participate. Experiment with different primes to attract engagement across communications channels.
- **Judging** - an upfront and transparent decision needs to be made about how winners will be judged, according to what criteria and by whom—whether by experts, peers or both.
- **Implementation** - decide if there is an implementation commitment of the winning ideas and who will be tasked with implementation of the winning projects. In some case, participants can also be involved in designing or even carrying out the implementation of a policy, as they were in the [City Challenges Program](#) led by the GovLab at San Pedro Garza García, México.

Prizes do not have to be big. Rather, many organizations are having great success with small prizes designed to produce what are sometimes called 'micro-innovations' – small creative shifts that are subtle but can add up to significant results. Micro-innovations provide broad scale rewards to lots of people for contributing productively. They allow innovation to become a daily habit rather than an out-of-reach phenomenon for the select few who win big competitions. Micro-innovation challenges use small prizes as a great way to create an incentive to participate in developing solutions via an ideation platform. In other words, small and incremental ideas can make a big difference and thinking in terms of micro-innovation is simply a reminder that open innovation, especially with the incentive of a prize, no matter how small, can coax good ideas from unlikely places, resulting in insights about policy issues that might not have been previously considered.

Case: SAVE Award

One case study of using an online ideation platform to develop both macro and micro-innovative solutions was the [SAVE Award](#) experience. In 2009, then-President Barack Obama launched the SAVE

Award, which sought “ideas from Federal employees to make government more effective and efficient and ensure taxpayer dollars are spent wisely.”³⁴ Over the course of five years, Federal employees were given the opportunity to submit ideas designed to yield savings while also improving the way that government operates. Submissions were judged against the following three criteria designed to gauge feasibility: ‘Does the idea reduce costs in a way that is concrete and quantifiable?; ‘Does the idea improve the way that government operates by either improving the quality of outputs at lower costs, simplifying processes to reduce administrative burden, or improving the speed of government operations to improve efficiency?;’ and ‘Can the idea be implemented administratively by the Executive Branch or would it require an act of Congress?’ Winners of the annual contest were awarded a face-to-face meeting with President Obama with finalists receiving certificates signed by the President. These rewards proved to be strong incentives as 90,000 ideas were proposed, 90 of which were incorporated into the President’s budgets.³⁵ One winning idea came from a Department of Education employee who suggested that “all Federal employees who receive public transit benefits shift from regular transit fare to the reduced senior fare as they are eligible.”³⁶ This simple idea would result in a reduction of cost for employees’ travel with no reduction in employee benefits.

Recommendation 4 at-a-glance: Implementation

■ WHAT IS THE METHOD?

Use prize-backed challenges to incentivize participation in innovation challenges hosted on an ideation platform.

■ WHAT IS IT INTENDED TO DO?

Create the incentives for and encourage participation in an innovation challenge to innovate solutions to the previously defined problems policy should address relating to AVs.

34. The White House, President Barack Obama. *The President’s SAVE Award: About the SAVE Award*. Retrieved from <https://obamawhitehouse.archives.gov/save-award>

35. Federal Soup staff. (2014, July 22). SAVE Awards End, *Federal Soup*. Retrieved from <https://federalsoup.com/articles/2014/07/22/save-awards-end.aspx>

36. The White House, President Barack Obama. *The President’s SAVE Award: SAVE Award Past Winners*. Retrieved from <https://obamawhitehouse.archives.gov/save-award>

■ HOW DOES IT WORK?

Prizes and good design create an incentive to participate at low-cost and this is low-cost to implement. In round one, participants can submit their ideas in specific spaces and vote on one another's submission based on a predefined set of criteria, including effectiveness and feasibility. Each submission needs to answer the following questions:

- What's your idea? (20 words or less)
- What problem does it solve? (100 words or less)
- How is your idea implementable? (200 words or less)
- What's the anticipated impact? (200 words or less)

The 20 most important and implementable short proposals, as rated by participants, will then advance to the next stage.

In round two, participants will be invited to compete either as individuals or in teams and craft a plan for how to implement one of those 20 winning ideas. Submissions should include:

- Who are the members of the implementation proposal team?
- Which winning idea have you developed an implementation plan for?
- What is the strategy for implementing the idea?
- What are the human resources needed to implement the idea?
- What is the cost of implementing the idea?
- What is the implementation timeline?
- What are the anticipated savings or efficiencies that would result from implementation, and how would they be measured?
- What are the risks of implementation?
- What are the impediments to implementation?
- Where and how would the implementation be piloted?
- How could implementation be scaled and expanded?

A panel of expert judges will select up to five winning teams using the following criteria:

- **Quantifiable Impact:** How large is the potential impact of the proposed idea and can the impact be measured?
- **Implementation Capacity:** Can the organization autonomously implement the proposal?
- **Rapid Implementation Feasibility:** How feasible is it to implement a proposal within a period of one year?
- **Proposal Completeness:** Is the implementation plan comprehensive enough to be exe-

cuted upon in its current state?

- **Judging:** Criteria on which submissions will be judged for both phases should be presented when the competition announcement is made. Criteria for Phase 1 includes effectiveness and feasibility, and criteria for Phase 2 includes quantifiable impact, implementation capacity, rapid implementation, feasibility, and proposal completeness.

■ PLATFORMS

- Your Priorities
- Bright Ideas
- Spigot

■ HOW MUCH TIME AND MONEY ARE REQUIRED TO SET UP AND RUN?

Besides the extrinsic prize, in case it applies, primary costs are limited to setting up the online platform; developing a marketing campaign to encourage participation; and moderating the expert or peer evaluation.

■ PROS

Creates an incentive for open innovation and adds excitement to the process of participating. A two-stage challenge, in particular, provides shorter and longer ways for people to get involved and encourages more and more diverse participation.

■ CONS

Poor process design depresses participation.

Recommendation 5: Use “Smarter Crowdsourcing” to get innovative expert thinking on autonomous vehicles quickly.

Discussion

Pioneered by the GovLab, Smarter Crowdsourcing is a three-month online process for convening 100+ global experts online and developing the learnings into 15 to 20 fleshed out solutions with implementation plans.

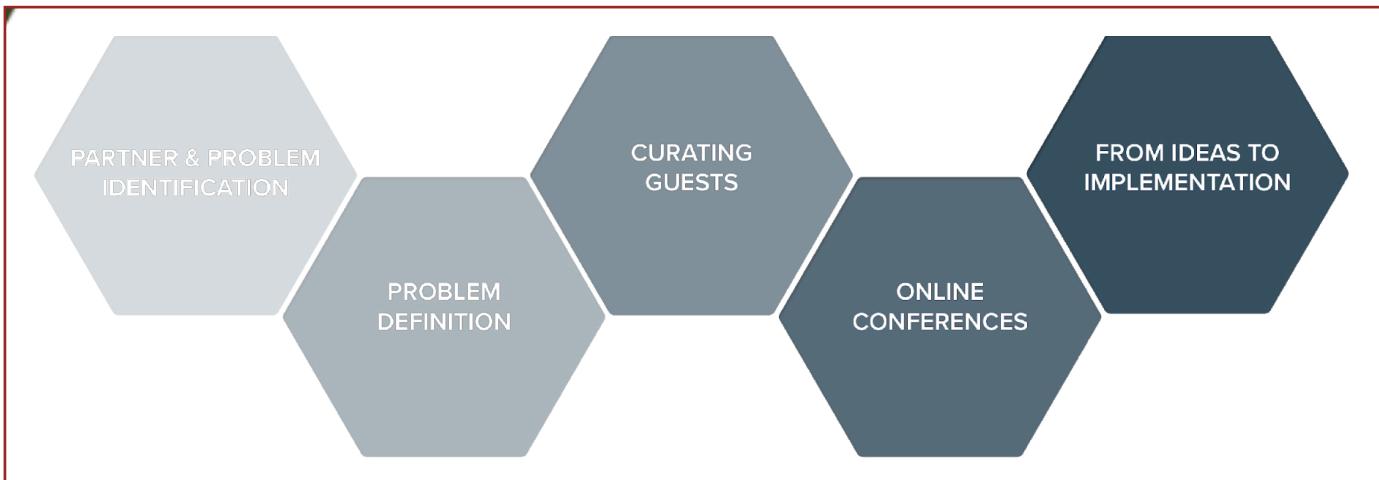
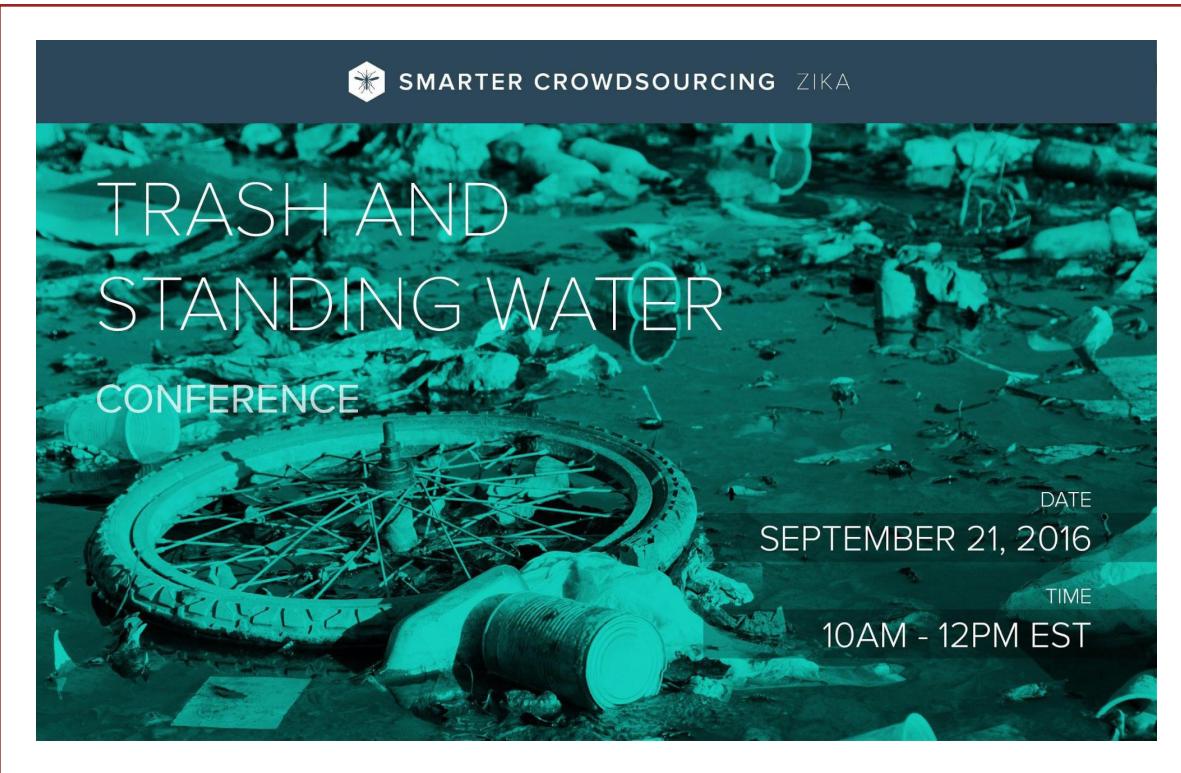


Image: Smarter Crowdsourcing process.

The process enables ongoing, systematic, and actionable exchange of global expertise to solve policy challenges by combining rigorous problem definition, research and curation with crowdsourcing to attract not just diverse ideas but also the ability to render those ideas useful and implementable. Unlike crowdsourcing, where anyone can participate, Smarter Crowdsourcing focuses on obtaining diverse expert participation. Expertise can be understood broadly to include those with practical as well as academic know-how but the process emphasizes strategies for targeting who participates.

Following a problem identification process, an organization would convene a series of online deliberative conversations with invited and self-selected experts to identify and discuss solutions. This can be done using a web conferencing platform such as Zoom. Participants are both invited and invited to suggest another expert as a way to grow the group beyond the “usual suspects.” The GovLab uses its convening power to ensure participation by a wide variety of individuals from industry, civil society, government and academia. Following those conversations, ideas are fleshed out with interviews and research into actionable policy proposals.

An example of developing solutions online using expert input involved the Inter-American Development Bank (IADB)'s use of Smarter Crowdsourcing to address Zika.



■ Image: Smarter Crowdsourcing - Zika (Conference on trash and standing water)

In 2016, IADB partnered with the city government of Rio de Janeiro in Brazil and the national governments of Argentina, Colombia and Panama to find solutions to Zika. Working with the GovLab, the team broke down the issue into 15 actionable problems. Partner governments selected six to address: Assessing Public Awareness; Communication and Behavior Change; Predictive Analytics; Trash and Standing Water; Information Collection/Data Governance; and Long-term Care. The team organized six online dialogues over two months in response to each problem - attracting 100+ global experts - and created a [Playbook of 20 implementable solutions](#).



SMARTER CROWDSOURCING
ZIKA

zika.smartercrowdsourcing.org

A. Overview of Recommendations

Twenty recommendations in six issue areas

ISSUE AREA	RECOMMENDATION
1 Assessing understanding	1.1 Conduct an assessment of social media penetration to understand who can be reached by digital listening activities and how 1.2 Convene an interagency committee to assess and prioritize demand for digital listening insights across government 1.3 Appoint a Chief Analytics Officer to drive implementation of data-driven policies and projects such as digital listening and predictive analytics platforms 1.4 Partner with research organizations, technology platform partners, and commercial analytics providers to develop the supply of desired digital listening insights
2 Behavior change	2.1 Create prize-backed challenges to promote engagement and innovation in Zika control at both the community and individual levels 2.2 Compile peer-reviewed best practices in Zika / MBD public communications and present them in a way that is accessible for policymakers seeking actionable ideas 2.3 Explore the use of "serious games" to raise awareness and change behavior by organizing hackathons and/or partnering with game designers to deploy effective platforms
3 Trash accumulation	3.1 Involve communities in locating and removing litter 3.2 Use drones to identify and map areas with accumulated trash 3.3 Commit to private-public partnerships (PPPs) with manufacturers to reduce trash accumulation 3.4 Collect trash in hard-to-reach areas using adaptive vehicles
4 Surveillance and data sharing	4.1 Improve the speed and reliability of surveillance data by integrating flexible mobile technologies like SMS and smartphone app reporting into surveillance activities 4.2 Collaborate with companies and universities to identify new sources of disease surveillance data 4.3 Promote openness and participation in surveillance data collection, storage, sharing, and use by developing a data governance playbook for epidemic response and building broad commitment to use it
5 Long-term care	5.1 Use online support communities akin to Patients Like Me to provide patient-to-patient support 5.2 Develop 2-way SMS-based support systems like Text4Baby to provide long-term medical care and support cost-effectively
6 Predictive analytics	6.1 Improve Zika response by building a predictive analytics platform 6.2 Use prize-backed challenges to rapidly develop predictive models and leverage outside expertise 6.3 Increase data analytics literacy among public health officials by training them in data science (through partnerships with research institutions, universities, and other training providers) 6.4 Collaborate on creation of a Zika-related data portal that compiles national and other open datasets

Image: Smarter Crowdsourcing - Zika Overview of Recommendations

Recommendation 5 at-a-glance: Implementation

■ WHAT IS THE METHOD?

Use Smarter Crowdsourcing to get innovative expert thinking on policy issues quickly.

■ WHAT IS IT INTENDED TO DO?

Obtain diverse expertise from across sectors and geographies.

■ HOW DOES IT WORK?

Detailed mechanics are described in the Smarter Crowdsourcing Playbook.

- **Partner Identification** - Selection of relevant institutional partners who help with selecting problems and choosing guests.
- **Problem Definition** - An iterative process of defining actionable problems to solicit expert input.
- **Guest Curation** - Selection of guests using a process of self-selection, invitation and nomination to ensure a diverse array of experts.
- **Online Conferences** - A series of online conferences (usually around 6 to 8) each with 20 to 30 experts to deliberate on a specific problem
- **Documentation** - Write up of the solutions discussed.
- **Research and Interviews** - Further exploration of the proposed policy solutions.
- **Implementation Planning** - Drafting of implementation plans for the most promising solutions.
- **Measurement and Evaluation** - Tracking of implementation and its success.

■ PLATFORMS

Zoom or any group-based web-chat platform.

■ HOW MUCH TIME AND MONEY ARE REQUIRED TO SET UP AND RUN?

Because of the effort needed to define the problems, source and invite the experts, moderate the dialogues and write-up the insights, this is a team of three people needed for three to four months.

■ PROS

It yields a high-level of innovative thinking from the best minds and leverages real-time deliberation to improve proposals, as well as builds a network of experts for future consultation.

■ CONS

It is medium-cost to implement, costing 3 employees 3-4 months of work.

Additional considerations for Phase 2 - Developing Solutions include:

- Define the problem(s) to be solved, regardless of the audience
- Define the task the public is being asked to perform
- Decide whether you will use a one or two stage challenge with or without a prize
- Articulate and show what constitutes a “good” solution
- Enable people to share solutions by text, voice or video
- Allow transparent peer rating and evaluation
- Experiment with targeting specific audiences based on profession and interest as targeting those who have a connection to the subject matter of the proposal based on profession or personal passion will attract more participation
- Experiment with different primes that respond to diverse motivations, as the right priming creates an incentive to participate
- Combine expert rating and peer rating as complementary mechanisms
- Implementation – the organization should decide if there is an implementation commitment of the winning ideas and convene a committee to determine the costs, staff resources, and time needed to implement the winning proposals, as well as who specifically would be best suited to implement specific proposals

Phase 3 – Drafting

Recommendation 6: Use an annotation platform.

Discussion

The third phase is to use the wisdom of the crowd to *write* policies together. Participating in this stage is challenging because it demands a high level of commitment and greater knowledge of the subject matter. However, when done right, inviting the public to participate in drafting offers key advantages, including addressing issues organizers don't know about and ensuring that drafts more effectively reflect the concerns of the people impacted by them. This also provides a way to "road test" some of the organization's early thinking to its members and may be easier to get useful public feedback on a draft that explains the planned approach than earlier when the policy is still inchoate. Asking people to comment on a draft rather than an idea in the abstract to define a problem or a solution often provides a clearer, more specific way to ask for input. To avoid unhelpful complaints, the process needs to be designed well.

A draft policy can be posted to an annotation platform like Hypothesis or Rap Genius or Wikimedia. Then the general public can be invited to review and provide comments on various documents including summaries that define policy problems and suggest potential solutions. Then, outreach should be conducted and participation solicited for the collaborative drafting exercise. In addition to seeking feedback from the general public, expert committees could be formed to provide comments and feedback as well.

Case: Brazilian Bill of Rights

A case study to illustrate the collaborative drafting of policies comes from Brazil. In Brazil in 2009, the Ministry of Justice, in collaboration with a local law school, launched an interactive website where they posted the first draft of the Marco Civil – a new bill on Internet freedom – for public comments. The website allowed individual citizens and organizations — including NGOs, businesses, and political parties — to add to the law's content and 800+ contributions were received in the form of comments, e-mails, alternative drafts and references. After three more collaborative drafting phases, the bill was sent to Congress in 2011 and ratified by President Dilma Rousseff with the support of four ministries.³⁷

37. Souza et al. 2015

Two of the tools Brazil uses to annotate legislation are the [WikiLegis](#) platform (which allows users to review bills and edit articles, allowing for collective editing of legislative text) and the [Mudamos](#) app (which uses blockchain technology to collect electronic signatures on popular initiative bills at the municipal, state and national level and also allows users to submit popular initiative bills for signature).

France replicated the process in 2015 with its Internet law with a high degree of success for citizens and, perhaps more surprisingly, satisfaction among government officials. “The Secretary of State praised the quality of the opinions submitted to the Government and the collaboration with the administrative authorities during production of the bill” (Government of France 2015).³⁸ Now France uses [Parlement et Citoyens](#), a website where a representative poses a problem that citizens help define, generate solutions for, and for which they then help evaluate and draft the proposed solutions. Citizens may also engage in video discussions with the representative. At the end of the process, a concluding report explains if, when, and how citizen input was incorporated into the resulting draft law.



■ Image: Screenshot of Parlement et Citoyens

Tool: Hypothes.is

Another annotation tool is [Hypothes.is](#), an open source annotation tool that can be used on any web-page using the browser plug-in but can also be embedded into a website during development. It is

38. Noveck, Beth Simone. (2018). Crowdlaw: Collective Intelligence and Lawmaking. *Analyse & Kritik*. Retrieved from http://www.analyse-und-kritik.net/Dateien/5be9b083bc696_noveck.pdf

free to use but to embed in a web page requires a small amount of technical customization. Hypothes.is offers the ability to highlight, mark up or respond to other people's comments and offers both public and private annotations on the same page. Comments can be tagged for ease of filtering. Adding Hypothes.is to a webpage does not change how the site looks or works; when the plug-in is active, it "adds a layer" on top of the website to enable annotation. Users can turn on and off this layer as they want. While you can invite public commenting on a draft policy, you can also invite a select subset of experts (or an internal review committee) to comment and discuss the same draft but see only the private group comments (and hide the public comments if required). With some technical development ability, comments can be processed using Hypothes.is' API and filtered or sorted as required. Hypothes.is is free and easy to use. Almost no technical web development skills are necessary to add Hypothes.is on top of an existing website, and it can be done in minutes. Minor HTML and CSS skills are necessary to embed Hypothes.is into a website.

In 2018, the German government used an annotation platform to crowdsource feedback on its draft Artificial Intelligence policy, which was published in 2019. By putting the draft on [Hypothes.is](#), the Germans, working in collaboration with non-profit partners, were able to solicit the input of dozens of global experts on the policy and coordinate that feedback in one place. Using an annotation platform also made it possible for people to see one another's feedback and create a robust dialogue rather than having a series of disconnected comments.

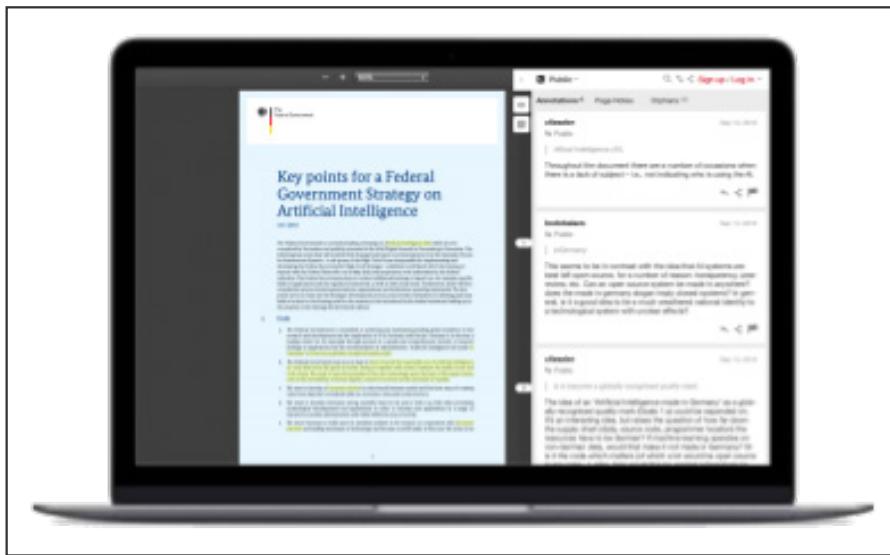


Image: Screenshot of the German AI Strategy Document being annotated using Hypothes.is

Tool: PubPub

PubPub is an open-source annotation tool for collaboratively “conducting research, drafting, reviewing, and publishing an idea they call *community publishing*.³⁹ PubPub supports all aspects of the publishing process from drafting documents, conducting peer review, hosting journal and books, and collecting and displaying reader feedback and analytics. Although designed primarily to support sharing and review of academic articles, it offers many useful features for community annotation. Participants start by creating a ‘community,’ which focuses on a particular topic, theme, or expertise, and falls into one of four categories: Journals, Book Publishers, Research Labs, and Conferences. While each category has slightly different functionalities, the core functions remain the same: content is either published online or solicited through a submission process, content is made public for review and commenting and/or specific users are invited to join the community for commenting, and lastly, interactive discussions occur and analytics are presented which allow the author(s) to make smarter publishing decisions.

The benefits of community publishing include that publishing work earlier creates more opportunities for feedback to be provided and that more impactful research occurs when researchers collaborate. Perhaps most notably, “a community-driven approach can also invite people likely to be affected by research into the knowledge creation process. As a result, research becomes more transparent, more inclusive, and ultimately, more trusted and impactful.” PubPub aims to reverse the trend which has seen publishing tools become increasingly closed-source and all of its core features can be accessed for “free, forever” though its Community package.⁴⁰ There is also a Full Service version with additional amenities that can be purchased including robust technical support and customization.

Recommendation 6 at-a-glance: Implementation

■ WHAT IS THE METHOD?

Use an annotation platform to use stakeholder expertise to collectively draft and annotate policy.

39. PubPub. *Our Mission*. Retrieved from <https://www.pubpub.org/about>.

40. PubPub. *Pricing*. Retrieved from <https://www.pubpub.org/pricing>

■ WHAT IS IT INTENDED TO DO?

Allow diverse opinions to be incorporated into policies and ensure that policies are closely reviewed and supported by the people they are meant to affect.

■ HOW DOES IT WORK?

- Host draft versions of suggested policies and initiatives surrounding AVs and safety, liability and access on an annotation platform.
- Create a marketing campaign to solicit participants to review the draft policies and offer comments and revisions.
- Designate a committee for each of the three topics (safety, liability, and access) to moderate annotations and send feedback.
- Complement annotation with periodic surveys of stakeholders on specific policies using a platform such as Typeform, Screendoor or Qualtrics, including sample questions such as:
 - Are you aware [example] policy exists?
 - What do you believe the intended impact of the policy is meant to be?
 - Has the development of this policy impacted your quality of life?
 - Do you have suggestions on how to improve this policy?
 - Is the problem this policy seeks to address important to you? [provide a likert scale to record responses]
 - Are there other policies you would recommend to address the problem this policy seeks to address?

■ PLATFORMS

- Hypothes.is
- Wikimedia
- PubPub

■ HOW MUCH TIME AND MONEY ARE REQUIRED TO SET UP AND RUN?

Primary costs are limited to developing a marketing campaign to encourage participation, moderating the process and processing the information gathered. Both platforms are free.

■ PROS

It creates an easy mechanism to gather a diverse set of opinions and public expertise and it helps the public learn and contribute. It is low-cost to implement at scale.

CONS

Participation may be poor if this opportunity is not marketed widely and appropriately and annotation platforms require effective moderation to stay on topic.

Additional considerations for Phase 3 - Drafting include:

- Ensure that a draft policy is written in plain language and with supporting definitions
- Framing questions should be asked to explain the desired feedback
- Explain how feedback will or will not be used and what constitutes a helpful comment
- Use a tool (e.g., Wordpress plug-in) that enables comments to be peer-moderated for relevance, abuse, or spam

Phase 4 - Evaluation and Assessment

Recommendation 7: Institute online social auditing to engage members in evaluating the rollout of autonomous vehicles.

Discussion

Policy evaluation is the process of understanding how a policy or other intervention was implemented, what effects it had, for whom, how and why. Policymaking often ends with enactment. There is no systematic effort to understand the impact a policy had, for whom, how and why. In an International City/County Management Association (ICMA) survey of over 500 local governments in the United States, 59 percent reported that they do not collect performance data on service delivery. This presents an opportunity for public engagement such as asking the public how to measure impact, what data to use for that purpose and engaging them in the process of evidence gathering and crowdsourcing monitoring to improve existing service delivery and inform future policy formulation.

Widely-distributed membership can provide a vital assessment of on-the-ground conditions and perceptions both before and after the fact. Such participatory evaluation, sometimes known as “social audits” or “civic auditing,” has the potential to enhance accountability and performance by using collective intelligence to monitor results. Many nonprofit organizations and governments are turning to online technology, including web platforms and mobile phones, to enable “social auditing” whereby constituents or members collectively collect data about constitutions to aid with monitoring and evaluation. Unlike some of the other processes we have discussed, social auditing gives people a task to do other than commenting or writing and can provide a nice counter-balance to those forms of engagement. By asking people to take pictures, gather data and submit other “evidence” of on-the-ground conditions, social auditing can engage more people. Stakeholders could be used to provide real-time monitoring and reporting on various policy issues. This can be done using a variety of mechanisms, including: ongoing surveys and polls, reporting via a web platform, reporting via social media such as Twitter and a Tweet bot, reporting via SMS, and/or collaborating with design challenges to engage members in designing their own reporting mechanisms all for sharing real-time stories and evidence. Enabled by new technology, a watchful community can improve the outcomes of policymaking by collectively evaluating outcomes and impact.

Case: TransGov

One example of social and civic auditing is [TransGov](#). TransGov is a platform created by a nonprofit in 2014 to help Ghanaian citizens monitor the progress of local development projects by empowering citizens to hold government accountable for faulty or incomplete infrastructure projects and service delivery in their localities. TransGov curates a list of projects in local communities and gives people the ability to comment on the project's status. Examples of projects include an 18-unit classroom building of the Millennium City school project funded by USAID and delayed by four years, the Kwame Nkrumah Circle intersection completed in 2016, and a public toilet facility which is on indefinite hold.⁴¹ Today, TransGov has 600,000 registered users who provide feedback through the TransGov website, mobile app, by SMS or using Interactive Voice Response (IVRS).

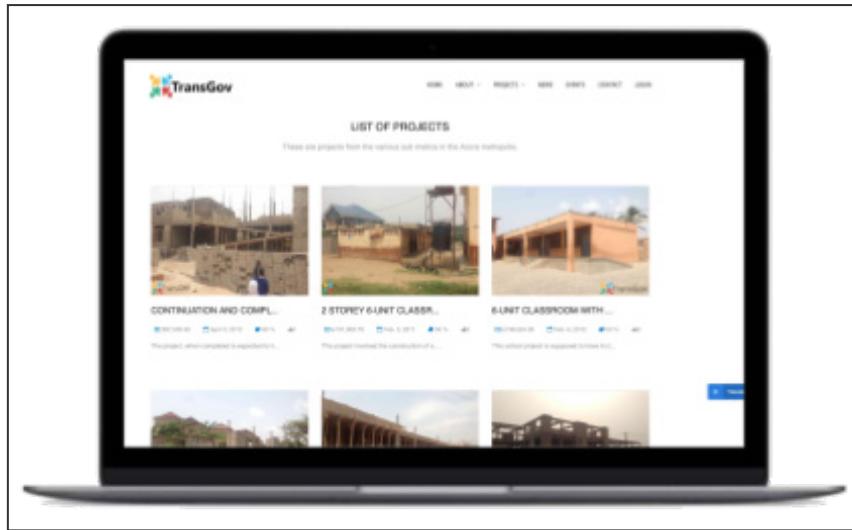


Image: Screenshot of TRANSGOV Ghana

Case: Chilean Congress

A second case study comes from the Chilean Congress. The Chilean Senate uses a full-time facilitator who runs evaluative focus groups post-implementation of a new law to understand how it has been implemented and the positive and negative consequences that it has generated. They evaluate three things: compliance with the metrics established when the law was enacted, public perceptions of the policy and its implementation, and corrective measures to bring the law into line with the stated metrics. The ex-post evaluation has as a goal to determine if the regulatory framework has fulfilled the desired objectives, if the law or regulation was sufficiently efficient and effective in its implementation

⁴¹ TransGov. *List of Projects*. Retrieved from <https://www.transgovgh.org/projects?page=4>

and to what extent expected and unexpected impacts of the intervention regulations were adequately addressed when conceiving the regulatory instrument. The facilitator convenes lawmakers, staff, stakeholders and citizens to discuss evaluative metrics and the success of the implementation to date. In 2019, Chile is moving from off- to online focus groups and enabling people to provide the same information via the web and mobile phone as an ex post check on the policymaking process.

Case: Social Auditing in Brazil

A third case study on social auditing is the case of Brazil. Audits conducted in random municipalities by the national comptroller have shown that there are deficiencies in school infrastructure quality across the country. In 2016, the comptroller launched an experimental project called the Projeto Controlladoria na Escola to engage students in 10 public schools in Brazil in the process of auditing school infrastructure, mapping commonly raised issues and fostering civic education in schools. The project involved asking students to collect data about their local school environments, report the major issues they faced, identify the root causes of those issues and propose ideas to fix them. In one school alone, students identified 115 issues and within just three months, 45 percent of the issues were fixed either by the Department of Education or, where possible, by the students and school management themselves.⁴².

We recommend examples of these successful social and civic auditing projects be followed and to develop a series of active and engaged participation opportunities for stakeholders to share visual evidence of and tell their own stories relevant to the specific policy issue at hand. For this purpose, crowdsourcing and citizen science toolkits such as Crowdcrafting built by SciFabric can be used, which enables any organization to set up a distributed information gathering project. Crowdcrafting is a web-based service that invites volunteers to contribute to scientific projects developed by citizens, professionals or institutions that need help to solve problems, analyze data or complete challenging tasks that can't be done by machines alone, but require human intelligence. The platform is open source and uses PYBOSSA software. The hosted Crowdcrafting platform costs around \$325 a month but for a fee, SciFabric will customize and white-label the PYBOSSA platform for an organization's use. Institutions, such as the British Museum, CERN and the United Nations Institute for Training and Research (UNITAR), are also PYBOSSA users. Civic tech providers such as MyGov will also customize software for this purpose. However, social auditing does not require any customized software. Depending on the project design, one can use Facebook, Twitter, Instagram and other commonly used social media platforms to

42. "Horta Comunitária Será Usada na Merenda do CEF 404, em Samambaia" (in Portuguese), Brazilian News Agency (Agência Brasília) retrieved from <https://www.agenciabrasilia.df.gov.br/2016/11/07/horta-comunitaria-sera-usada-na-merenda-do-cef-404-em-samambaia/>

invite people to gather and share pictures, data and stories.

Case: Evidence Checks

An additional example of a process for social auditing is the UK Parliament's use of "Evidence Checks." Evidence Checks are exercises where members of the public are invited to scrutinize and comment on the research and evidence that government uses to create policy. Evidence Checks allow members of the public – including academics, practitioners and those with relevant lived expertise – to determine how robust the evidence is that informs policy, including highlighting contrasting evidence, selection biases, and gaps in the evidence.⁴³ To complete an Evidence Check, government completes an evidence summary which states what the policy is and what evidence was used to inform that policy. Then, the public is invited to submit comments via a simple web forum or through Oral Evidence Sessions. This process allows citizens and organizations to support, question, or refute the government's response on a specific policy with evidence of their own. Evidence Checks are best used around specific policy issues and with clear rules of engagement to ensure comments are provided on the strength of evidence and not the policy itself. One example of an Evidence Check was by the Women and Equalities Committee in 2016 and was called a Fact Check. For this Fact Check, the Committee did targeted outreach to "specific organizations and communities on Twitter who were known to have interest, expertise and/or lived experience in the relevant areas [and used] specific hashtags to build a community and an informed debate around the topic."⁴⁴ To receive comments, the bill to be reviewed for its evidence was split into sections, with each section ultimately receiving a small number of high quality contributions. Many of the comments submitted were incorporated into the subsequent ministerial briefing and two contributions led to a change in the government's position on the issue.

Recommendation 7 at-a-glance: Implementation

■ WHAT IS THE METHOD?

Use online social auditing to engage and collect feedback from stakeholders on the development and implementation of policy on issues of safety, liability, and access.

43. Gould, Jen. (January 2016). *Making an Evidence Check Work*. Institute for Government. Retrieved from <https://www.instituteforgovernment.org.uk/blog/making-evidence-check-work>

44. Nesta. UK Parliament Evidence Checks. Retrieved from <https://www.nesta.org.uk/feature/six-pioneers-digital-democracy/uk-parliament-evidence-checks/>

■ WHAT IS IT INTENDED TO DO?

Allow the intended beneficiaries of a policy to provide ongoing feedback on the development and implementation of the policy to allow for continual enhancement of the policy to become as effective as possible.

■ HOW DOES IT WORK?

- Create a crowdsourcing exercise and invite stakeholders to participate in monitoring the roll-out of AV policies in their own communities.
- Articulate the intended goals of a policy and what it was supposed to accomplish and give people a specific task that contributes to monitoring whether that goal was accomplished.
- Create varied tasks for people to do, including taking pictures, gathering data and telling stories.
- Tasks should be clear, simple and well-defined.
- Safety and accessibility are ideal topics for social auditing as is asking people to tweet or take pictures of and document the ways in which AV services may or may not be accessible or safe.

■ PLATFORMS

- Crowdcrafting
- Social media
- Customized open source software toolkits like TransGov

■ HOW MUCH TIME AND MONEY ARE REQUIRED TO SET UP AND RUN?

Limited financial resources are required. Part-time staff time is required to design social auditing exercises, facilitate conversations and/or administer surveys and polls, and analyze the results.

■ PROS

It leverages distributed human resources to undertake the neglected task of evaluation at low-cost.

■ CONS

It works best for policy which has already been implemented. But, in this case, can be used for distributed storytelling about transportation.

Recommendation 8: Use telephone town halls.

Discussion

Telephone town halls are an hour of substantive deliberation about a policy with relevant stakeholders conducted over the phone or computer. They have become an increasingly popular way for an organization that wishes to connect with their stakeholders to do so easily and at a reduced cost while achieving greater scale and interactivity.

Telephone or web-based town halls replace the traditional in-person town halls with a more modern way of speaking to participants about a particular issue but without the complexity of other online processes as they are simply a technology-facilitated deliberative discussion. They make it possible to connect with a broader, more diverse array of participants beyond talking only to those in leadership roles in the organization or the most vocal “usual suspects.” Though not required, participation in telephone or web-based town hall can be rewarded with a small incentive from the organization such as a discount or free publication or other reward. Web-based discussion software like Zoom makes it possible to have a two-way conversation where everyone interacts on equal footing. A larger group of participants can be sub-divided into smaller “rooms” where people can deliberate and outputs a video of the discussion and a transcript of the chat. With Zoom, participants dial-in via the Web or telephone.

A Tele-Town Hall dials out to a list of phone numbers provided by the organization. People receive a personalized, pre-recorded message inviting them to remain on the line if they wish to be transferred automatically into the Town Hall event. Participants can ask questions and can respond to polls and surveys using their telephone keypad. It is somewhat less interactive but also very easy for people to join because the system calls them. The Tele-Town Hall also provides an output of the call and the responses to the survey questions. In both cases, the audio recording can be automatically transcribed to facilitate better mining for insights.

Such a town hall can also be conducted using the even simpler technology of a conference line and manual recording or the popular mechanism of using a social media platform such as an [“Ask Me Anything”](#) on Reddit or a [Twitter Town Hall](#) although these techniques are going to be less interactive than other approaches discussed in this report. However, they are a good, cheap and simple way to

get more into the habit of promoting more conversation with the public. In every case, consent must be obtained from participants before recording them.

One obvious benefit of telephone or web-based town halls is that the facilitators do not have to be in the same physical location as the participants who can be widely distributed as telephone town halls can be conducted from any location where there is connectivity to the town hall platform. This removes the barrier of only being able to speak to those in the same geographical space. In addition to being beneficial for the speaker, this also allows stakeholders who may be unable to travel to attend traditional town halls, such as those with disabilities, the ability to participate from wherever they are and the opportunity to learn from and engage with other members of a common community. But, unlike the usual webinar, done right these are not one-to-many broadcasts but a truly interactive and deliberative discussion, not dissimilar to the City Jury or Citizen Panel in style.

As with other techniques discussed in this report, telephone town halls also allow facilitators to reach more stakeholders at a fraction of the cost of holding traditional town halls and require fewer logistics to organize. Compared to traditional town halls, telephone town halls do not require a venue to be secured, travel for the speaker and facilitators to be coordinated, or staff to be available to manage the flow of attendees. Speaking to stakeholders through a telephone or online platform, rather than during a large in-person meeting, also streamlines the conversation and can avoid disruptions which prevent productive conversations from taking place. Multiple concurrent or frequently repeated town halls can make it possible to keep the size small enough to allow for more interaction while still achieving significant scale. Telephone town halls have been demonstrated to yield positive results for evaluation and assessment due to their ability to facilitate large-scale conversations on a particular topic. They can also be used at other stages of the policymaking lifecycle.

Case: Congressional Telephone Town Halls

One use of telephone town halls at a national level were those Congressional telephone town halls run with members of Congress and their constituents by a group of researchers in 2018 designed to test the efficacy of the telephone town hall. Since legislative policy is generally made behind closed doors, the telephone town hall, while technologically simplistic, still represented a major innovation for the organization. “Nowadays members rarely consult with representative groups of their constituents while they are actually governing. Unsurprisingly, then, the public feels disconnected from their lawmakers and the political system more generally. Members of Congress, in turn, find it difficult to keep their fingers on the pulse of their districts, and systematically misperceive the opinions of their

constituents.⁴⁵ To explore a solution to this issue, an experiment was conducted with 12 sitting United States Representatives and one Senator, including both Republicans and Democrats. The researchers recruited a random sample of each Congressperson's constituents to participate and randomly assigned some to talk about important issues (e.g., immigration reform and anti-terrorism policy) with their members online in small groups. They also had a "control group" - citizens who just read the briefing materials but didn't participate in a conversation. The results were that "those most frustrated by politics were the most likely to accept the invitation. Participants increased their knowledge about the issue and loved the event - 95 percent said it was "very valuable for democracy," and 97 percent said they would be interested in doing another."⁴⁶ Organizations could use this method either using a representative sample like a Citizen Jury or Citizen Panel or simply with a self-selected group of participants or a hybrid of both types of participants to foster greater engagement with members in connection with evaluating state AV policy.

Recommendation 8 at-a-glance: Implementation

■ WHAT IS THE METHOD?

Use telephone town halls to connect with stakeholders to get feedback on enacted policies regarding AVs and safety, liability, and access to determine their effectiveness and consumer support.

■ WHAT IS IT INTENDED TO DO?

Telephone town halls could be utilized after policies have been instituted around AVs to evaluate how those policies have affected stakeholders and how well they are working or after a State has enacted policies to solicit reflection on them.

45. Neblo, Michael A., Kevin M. Esterling, and David M. J. Lazer. (2018). Representing Is Hard. Online Town Halls Can Help, Roll Call. Retrieved from <https://www.rollcall.com/news/opinion/congress-online-town-halls>

46. Neblo, M., Esterling, K., & Lazer, D. (2018). Politics with the People: Building a directly representative democracy (Cambridge Studies in Public Opinion and Political Psychology). Cambridge: Cambridge University Press. doi:10.1017/9781316338179

■ HOW DOES IT WORK?

- Set up multiple online and telephone town halls on specific policies moderated by staff and/or professional facilitators.
- Run multiple town halls on each topic, some with self-selected and others with representative participants.
- Before the telephone town halls, provide members with brief literature on the specific topic and guidelines on how to engage productively in the online town hall.
- For example, for a town hall on safety, stakeholders would be provided with brief information on the core issues surrounding safety and AVs; what the primary issues, concerns, and challenges are considered to be; and what policies the participating state legislatures have enacted to date regarding the topic in order to focus on evaluation of those policies to date.
- Prepare a moderation guide and share that guide with participants.

■ PLATFORMS

- Zoom
- Tele-Town Hall

■ HOW MUCH TIME AND MONEY ARE REQUIRED TO SET UP AND RUN?

Limited financial resources are required. Part-time staff time is required to prepare the documentation support, to facilitate the conversations and to analyze the results.

■ PROS

Telephone town halls are short, easy, and cost-effective to run on topics where it is useful to have a representative sample.

■ CONS

Creating a representative sample in a town hall is time consuming and not useful for solution identification nor where geographic diversity is needed.

Additional Considerations for Phase 4 - Evaluation and Assessment include:

- Ensure that metrics for evaluation and data collection are clear to all parties lest the social auditing process result in a partisan or ideologically motivated attempt to undermine the legitimacy of the policy
- Provide a clear and distinct tagging system for reporting on specific conditions
- Establish a policy evaluation which tracks effectiveness of both state and national policies

Conclusion

Throughout this report, we have provided recommendations for participatory practices and platforms to use at each stage of the policymaking process together with specific suggestions for tools and tips on how to implement them. Generally, each of the methodologies we discuss involves convening either a small or large group of people to provide information or take action in different ways. For any of these to succeed, there must be a clearly articulated goal for the process, what constitutes the desired participation and how feedback will be used. Above all, however, there needs to be a plan to go beyond consultation and to use what is learned. Thus, every one of these strategies must be complemented by a plan for taking the input on board and providing feedback to demonstrate how engagement was relevant. Only by creating this feedback loop can a culture of participatory policymaking be built and the rhetoric/practice gap narrowed between talking about participation and making it a regular part of policymaking supported by action.

Key to this cultural change is to demonstrate empirically what works. To that end, you need to experiment and try, try, and try again, repeating these open policymaking practices multiple times. Effective engagement requires practice and learning how to listen digitally and at scale both for the organization and for individuals. Thus, multiple engagement exercises should be conducted at each step of the policymaking cycle from problem identification to evaluation, building research and evaluation into the process — either on its own or in collaboration with a research organization — in order to evaluate the impact from the organization and its members.

Natural experiments and randomized controlled trials can both be used to test variables such as: what kind of “priming” or messages attracts participation, whether intrinsic or extrinsic prizes are the best motivator, and whether targeting participation on the basis of professional expertise or other factors causes people to participate more. Research should not only test the impact on participants, why they participate, who participates and under what circumstances but also the impact on the organization, surveying staff to understand whether and how such open policymaking helped the organization to identify new ideas, hear from diverse people it would not have been in contact with, get information and input quickly and efficiently, or otherwise improve its policymaking processes.

By creating a culture and practice of open policymaking using these and other practices that will evolve as technology evolves, the hope is that we can deepen and broaden the predominance of

listening organizations that effectively and legitimately channel the expertise of their beneficiaries into the creation of the highest quality policies that governments and companies listen to more because they are crafted using a participatory and open approach.

Additional Resources

For more information on open policymaking, please see the following recommended readings:

- The GovLab's [CrowdLaw](#) project ([crowd.law](#)) homepage (project resources on tech-enabled engagement in policymaking, including video how-to's)
- The GovLab's Living Library [Selected Readings](#) (best of readings on open government topics)
- The Open Government Research Exchange (OGRX) [bibliography](#) (over 1,000 articles on open government topics, including citizen engagement, open innovation and crowdlaw).

If you are interested in learning more, or want to share examples of how these or other open policymaking processes have worked for your organization, please contact us at openpolicymaking@thegovlab.org.