

VOLUME 1

REPRESENTATIVE BODIES IN THE AI ERA

INSIGHTS FOR LEGISLATURES



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January 2024

Executive Summary

This report provides an overview of how artificial intelligence (AI) technologies have been gradually adopted in the legislative workflows of parliaments globally over the past decades. It focuses primarily on developments in the US Congress in areas like predictive modeling, machine learning, natural language processing, computer vision, and speech recognition. It also highlights examples of AI adoption internationally, including projects in Argentina, Brazil, Estonia, the European Parliament, Finland, India, Italy, Singapore, and Taiwan.

The recent emergence of generative AI (GenAI) is addressed — highlighting its potential to augment efficiency and effectiveness in lawmaking processes while acknowledging that these benefits raise complex questions.

The report describes actions taken in the US House and Senate to allow for cautious exploration and experimentation with GenAI. Both chambers have established AI working groups and issued initial guidance on responsible AI adoption.

Emerging workflow disruptions signal more significant impending impacts and underscore the need for technical investments and capacity building within legislatures.

The report makes several recommendations for legislative bodies planning for their own AI adoption:

◆ **Immediate**

Enable experimentation; foster sharing

◆ **Short-term**

Conduct expert studies; advocate prototype development

◆ **Medium-term**

Invest in integration and automation initiatives

◆ **Long-term**

Revolutionize constituent engagement and oversight leveraging custom models

It further advises formulating agile guidelines, promoting inclusive dialogue, adopting phased strategies, upskilling staff, ensuring human oversight of AI systems, and participating in international collaboration.

By prudently leveraging AI, representative bodies can take steps to maintain pace with a rapidly changing society, meet rising public expectations, and improve the responsiveness, effectiveness, and relevance of democratic institutions in this new AI era.

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Introduction

For the Members of Congress, parliamentarians, state lawmakers, county commissioners, city council members, and myriad other elected representatives around the world and the staff who support them,¹ much of the workflow is similar regardless of country, jurisdiction, or form of government. This can include meeting with constituents, receiving incoming inquiries or expressions of opinion, hearing from advocates, distributing public information, proposing or evaluating policy proposals, seeking expert analysis, processing large volumes of information, collaborating with colleagues, drafting and delivering speeches, issuing statements for the record and to the media, questioning witnesses, conducting oversight, voting, and much more. Many of these actions previously relied upon paper-based processes, but in recent years technology-enabled upgrades have come to include digital and automated technologies, often leveraging some form of artificial intelligence (AI). These process modernizations have — and continue to — improve legislator and staff workflows, increasing government efficiency, transparency, and effectiveness.

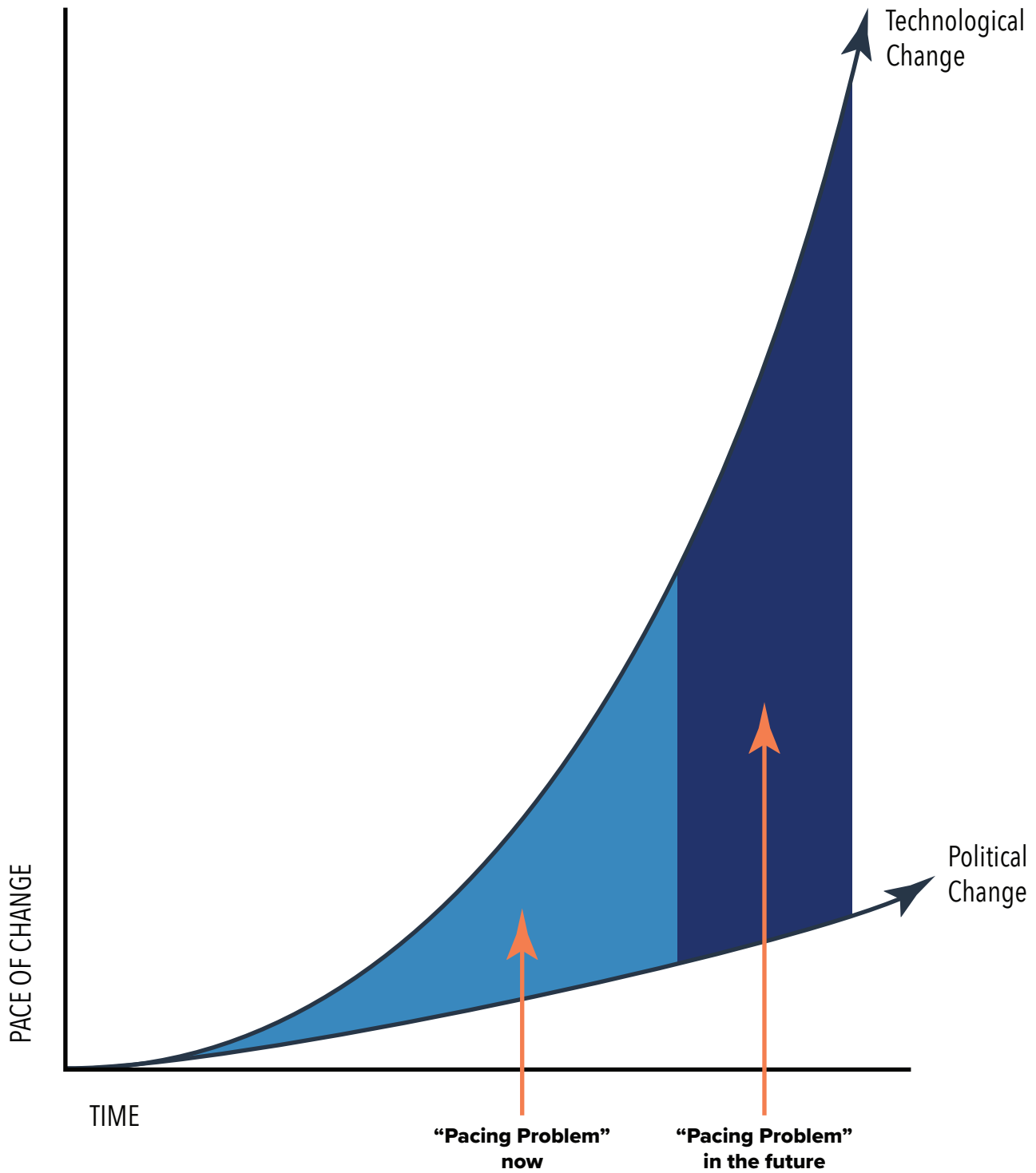
This report provides an overview of AI technologies and their gradual adoption in the legislative workflows of legislatures around the world over the past several years, with a primary focus on the United States Congress. The report then turns to a discussion of recent innovations in generative AI (GenAI) and discusses the opportunity for legislatures to proactively establish policies to evaluate potential GenAI use cases and allow for experimentation. The report chronicles actions taken by the US House and Senate as an illustrative roadmap for other legislatures considering their own future AI-adaptation strategy and then offers a list of potential use cases for deployment of GenAI in legislative contexts.

The report is written primarily for nontechnical legislators and staffers seeking to understand how AI is currently being deployed in legislative environments and to provide context as new institutional policies or investments are considered. It does not explore the questions of how AI should or could be regulated, but rather is narrowly focused on examples of AI in legislative workflows. It is written from an American perspective, with future reports under development with partners to tailor the information and examples to specific international audiences, languages, and governing systems. This volume is focused on technological developments and actions through December 31, 2023, with additional volumes planned to track progress, issues, and new technological advances.

This work builds on the authors' collective experience working both inside Congress and in civil society helping the US Legislative branch modernize through new technologies, updated processes, and increased staff capacity. While this work has always been important, accelerating changes due to AI necessitate even greater focus and investment to address the “pacing problem,” a term coined to describe the lag between technological advancements and the development of laws and regulations governing them.² The current pace of AI — still at a nascent stage — accentuates the urgency of bridging legislatures' capacity gap caused by their use of outdated tools and inadequate skill sets that are disconnected from the evolving needs and expectations of constituents and civil society. By proactively learning about and experimenting with new tools, legislatures can operate more efficiently, better serve constituents, craft more effective policy solutions, and ensure the ongoing relevance of democratic institutions in the years ahead.

¹ The Inter-Parliamentary Union identifies [190 national legislatures in the world](#) – 78 bicameral and 112 unicameral, for a total of 268 national governing chambers with over 44,000 representatives. In 2016, a [report from OECD](#) identified a further 1,700 state or regional level legislatures, and over 500,000 municipal level governments with at least partial legislative power.

² Marci Harris, “[Congress vs. the 'Pacing Problem\[s\]'](#),” *Medium* (August 29, 2019)



ASU Professor Gary Marchant and his co-editors in “The Growing Gap Between Emerging Technologies and Legal-Ethical Oversight,” described as “the pacing problem” – “the growing gap between the pace of science and technology and the lagging responsiveness of legal and ethical oversight society relies on to govern emerging technologies.”³

3 Gary E. Marchant, Braden R. Allenby, Joseph R. Herkert, “The Growing Gap Between Emerging Technologies and Legal-Ethical Oversight – The Pacing Problem,” Springer Dordrecht (2011)

1

Overview and Examples of AI Adoption in Legislatures

Key Terms and Examples of Legislative AI Adoption Over the Decades

An October 30, 2023 executive order issued by US President Joe Biden on the “Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence” defines AI as:

a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. Artificial intelligence systems use machine- and human-based inputs to perceive real and virtual environments; abstract such perceptions into models through analysis in an automated manner; and use model inference to formulate options for information or action.⁴ (15 U.S.C. 9401(3))

The Organization for Economic Cooperation and Development (OECD) recently updated its definition of “artificial intelligence” (AI):

An AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that [can] influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment.⁵

The term includes a spectrum of automated technologies that include but are not limited to:

◆ Predictive Modeling

Utilizing statistical techniques to predict future outcomes based on historical data, aiding in risk assessment, marketing, and other forecasting needs.⁶

◆ Machine Learning (ML)

Systems with the ability to learn from and improve with experience, used in predictive modeling, predictive text, data analysis, and statistical analysis.

◆ Natural Language Processing (NLP)

Analyzing and understanding human language to facilitate interactions between computers and human language, enabling applications such as text analysis, translation, and chatbots.

⁴ Executive Order on the [Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence](#) (October 30, 2023)

⁵ Luca Bertuzzi, “[OECD updates definition of Artificial Intelligence ‘to inform EU’s AI Act.’](#)” *Euractive*, November 8, 2023

⁶ Experts disagree on whether predictive modeling should be considered AI. This report embraces a broad definition to illustrate how the adoption of automated technologies and algorithms in legislative workflows has progressed over time.

◆ Computer Vision

Interpreting and making decisions based on visual data, used in facial recognition, image and video analysis, and object detection.⁷

◆ Speech Recognition

Translating spoken language into written text, aiding in transcription services, voice-activated systems, and customer service applications.

For the past several decades, legislative bodies around the globe have begun to incorporate these advanced tools into their operations to varying degrees, exploring the technologies' potential to enhance efficiency, accuracy, and engagement in the legislative process.⁸ The following examples demonstrate the use of forms of AI in legislative environments over time.

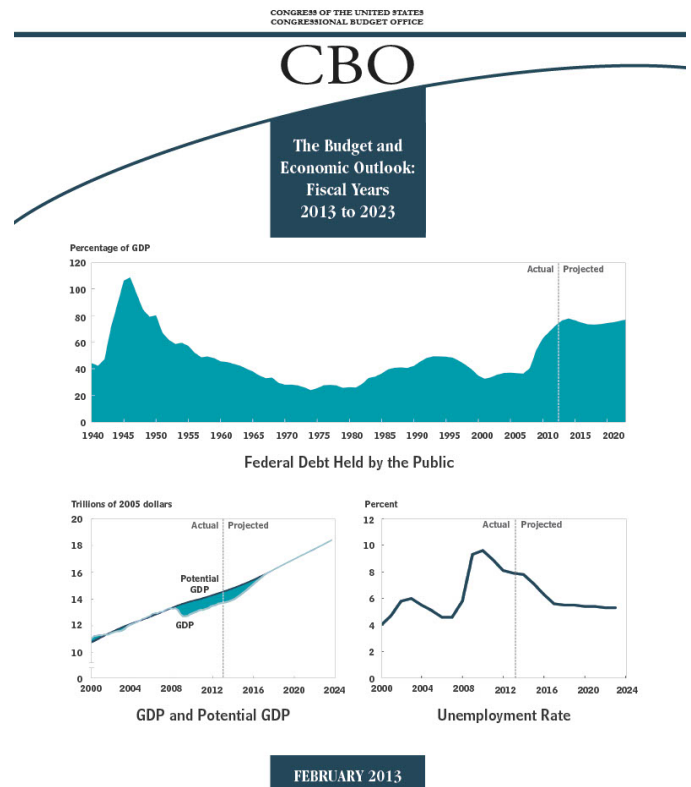
PREDICTIVE MODELING

Predictive modeling is the use of algorithms to forecast future outcomes by discerning meaningful patterns in data. This technique gained traction among actuaries, marketers, and risk analysts during the 1990s and 2000s. In the legislative realm, predictive modeling is used for assessing the potential impact of proposed bills on federal finances — sometimes referred to as the “fiscal note.”

In the US federal context, notable instances include the models utilized by the Congressional Budget Office (CBO) and the Joint Committee on Taxation (JCT).

The CBO provides budget and economic information to Congress, including, for significant legislative proposals, a cost-benefit “score” demonstrating how the proposed policy would impact the federal deficit.

To accomplish this, CBO employs a suite of automated technology or AI models, one of which is the Policy Growth Model (PGM), which analyzes the interplay between economic growth and the federal budget. It factors in the effects of labor force changes, productive capital alterations, and total factor productivity on US economic activity



⁷ While listed separately here, computer vision is a subset of machine learning.

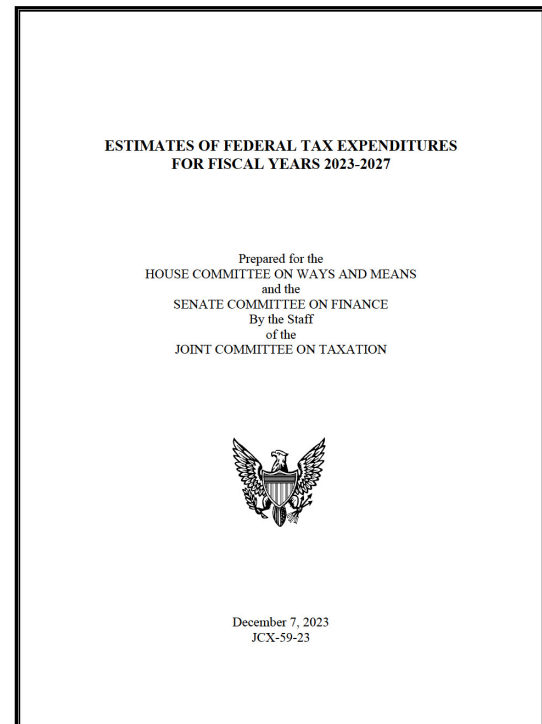
⁸ Monica Palmirani, Fabio Vitali, Willy Van Puymbroeck, Fernando Nubla Durango, “[Legal Drafting in the Era of Artificial Intelligence and Digitisation](#),” *Report to the European Commission* (2022)

particularly the gross domestic product (GDP). Within this predictive model, CBO staff can estimate how variables such as hours worked, savings, investment in capital, and GDP react to economic shocks and fiscal policy shifts, including alterations in federal tax rates, spending, and deficits providing legislatures valuable insight into the potential effects of proposed policies.⁹

The JCT provides the US Congress with tax-related analysis and revenue projections to score how a change in tax policy would impact revenue collected. Policy models maintained by JCT include “the Individual Model, the Corporate Model, and the Estate and Gift Model.”¹⁰

In a recent example, the US Government Accountability Office’s (GAO) Innovation Lab showcased a simulation tool in 2022 termed the “ID Verification Controls Simulator,”¹¹ demonstrating how predictive modeling could leverage ML-trained simulations to assist policymakers in navigating policy tradeoffs. This simulator enables agencies and their associates to model hypothetical policy and design choices, exploring the ramifications of varying verification approaches on program access, fraud, and participant satisfaction.

So, for example, if a policymaker asked the program to simulate a policy design with zero tolerance for fraud, then other characteristics — such as ease-of-use, user satisfaction, and accessibility — were adversely impacted. Similarly, a program designed solely for ease-of-use and accessibility might result in an unacceptably high rate of fraud. The pilot simulator helps to illustrate how AI-enabled dashboards can help policymakers understand the tradeoffs inherent in program design and how to balance them.



⁹ [CBO's Policy Growth Model](#) presentation (April 2021)

¹⁰ Joint Committee on Taxation [Frequently Asked Questions](#)

¹¹ GAO Innovation Lab [ID Verification Controls Simulator](#)

GAO’s policy simulator tool provides a glimpse of the kinds of complex policy interactions that predictive modeling — combined with other AI tools — could enable for legislatures in the near future. One open source project outside government is demonstrating how this policy modeling capability could help policymakers — and the public — better understand even broader potential impacts of proposed policy changes. [PolicyEngine](#), which is currently available in the US and UK, allows users to propose policy changes and calculate the impact both on their own household and the economy overall.¹²

Both the GAO ID verification simulator and PolicyEngine demonstrate the emerging technical feasibility of giving lawmakers and staff greater autonomy to explore interventions and their potential effects in a format that is much more interactive and useful than a pdf report or chart. With institutional investment in interactive modeling tools lawmakers could test their policy ideas with instantaneous insights well beyond the narrow frame of cost-benefit or revenue analysis.

ID Verification Controls Simulator

Simulation Settings

Can you improve the hypothetical program's performance?

- The selected program configuration **prevented 77% of improper payments**, and simultaneously **prevented 41% of proper payments**.
- The selected program configuration cost for 1,000 applicants is \$350.
- Overall, proper applicants were **dissatisfied** with their experience in the program.

Who is applying to the hypothetical program?

What is the perceived socioeconomic vulnerability of the population served by the hypothetical program?

Balanced

Show Advanced Settings

How will the hypothetical program operate?

Will the hypothetical program track an applicant's digital footprint as they interact with its system?

No

The screenshot shows the PolicyEngine website interface. At the top, there is a navigation bar with 'POLICY ENGINE' on the left and 'RESEARCH', 'ABOUT', 'DONATE', and 'COMPUTE POLICY IMPACTS' on the right. Below the navigation bar is a search bar for parameters. A list of parameters is shown, including 'aca', 'Bureau of Labor Statistics (BLS)', 'Contributed', 'Department of Labor (DOL)', 'Federal Communications Commission (FCC)', 'Department of Health and Human Services (HHS)', 'Internal Revenue Service (IRS)', and 'Local'. Below this list is a 'Policy parameters' section with a description: 'Build a tax-benefit reform by selecting parameters from the menu items below. Then when you're ready, click Calculate economic impact on the right to see how your reform would affect the economy.' Underneath, there is a grid of parameter categories: 'Government' (Aca, Bureau of Labor Statistics (BLS), Contributed, Department of Labor (DOL), Federal Communications Commission (FCC), Department of Health and Human Services (HHS), Internal Revenue Service (IRS), Local, Simulation, Social Security Administration (SSA)), 'States', and 'US Department of Agriculture (USDA)'. On the right side, there is a 'Current law' section with a search bar for existing policies, a dropdown for 'Your reform is empty', and fields for 'in the US', 'over 2023', and 'against Current law'. At the bottom of this section are two buttons: 'CALCULATE ECONOMIC IMPACT' and 'ENTER MY HOUSEHOLD'.

MACHINE LEARNING

Machine learning (ML) systems use algorithms that can learn and improve themselves by ingesting large volumes of data without requiring explicit programming. These algorithms detect patterns and draw inferences based on the data, and can be “trained” in several ways:



Supervised Machine Learning

Trained on labeled data to map inputs to outputs

“This means this.”



Unsupervised Machine Learning

Seeks patterns in unlabeled data

“Here’s some data. Go learn.”



Reinforcement Learning

Learns via feedback from interactions

“You got this right/wrong.”

Initially gaining traction in the 1980s, ML forms the backbone of many contemporary AI applications.

Since 2018, the Library of Congress (LC) has been actively researching and implementing ML technologies, including the creation of machine-readable text from digitized documents using Optical Character Recognition (OCR), generating standardized catalog records, extracting data from historical copyright records, and parsing legislative data.¹³ However, the Library is proceeding cautiously:

...at its simplest, machine learning (ML) and artificial intelligence (AI) tools haven’t demonstrated that they’re able to meet our very high standards for responsible stewardship of information in most cases, without significant human intervention.

As the Library of Congress, we have a responsibility to the American public. As shepherds of the largest library in the world, we also have a responsibility to all curious people, and especially to those whose stories we hold. We know how important it is to get information right, and we won’t implement technology that automates our work without thorough vetting to make sure we aren’t compromising our trustworthiness or the authenticity of the information we offer.¹⁴

The Library will soon release a draft framework for AI planning with an opportunity for public input on its plans.

A November 2022 report by the RAND Corporation highlighted machine learning’s potential to bolster public policy effectiveness. “By leveraging the increasing amount of available information, ML has the potential to more accurately predict policy outcomes, thereby reducing the risks of unintended consequences. ... Furthermore, ML algorithms can automate data processes to offer more-rapid predictions that increase the possibility of early intervention.”¹⁵

¹³ [AI at LC](#)

¹⁴ Laurie Allen, “[Why Experiment: Machine Learning at the Library of Congress](#),” (November 13, 2023)

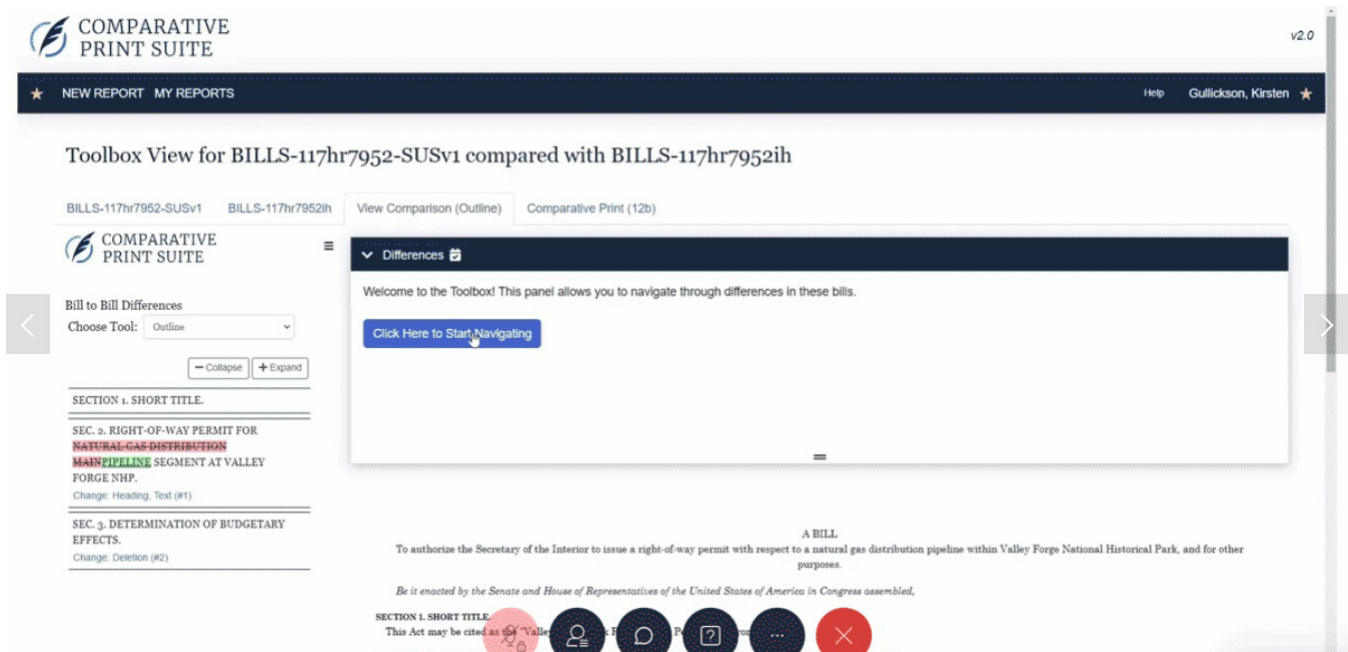
¹⁵ Evan D. Peet, Brian G. Vegetabile, Matthew Cefalu, Joseph D. Pane, and Cheryl L. Damberg, “[Machine Learning in Public Policy: The Perils and the Promise of Interpretability](#),” RAND Corporation (2022)

NATURAL LANGUAGE PROCESSING (NLP)

Natural Language Processing enables computers to understand, interpret, and generate human language in a way that is both meaningful and useful — translating language that humans can understand to the “ones and zeros” that can be processed by a computer, and vice-versa. NLP is used in applications such as chatbots, translation services, sentiment analysis, and voice recognition systems.



Since 2017, the US House of Representatives has invested substantial resources in an NLP-based tool named the Comparative Print Suite (CPS). A collaborative effort between the House Office of the Clerk and the House Office of Legislative Counsel, the CPS provides staff with a robust legislative comparison tool that empowers them with the ability to visualize changes in existing law through line edits, amendments, or newly drafted legislative proposals.¹⁶



Screen capture of the US Office of the House Clerk’s Comparative Print Suite interface (2023)

16 "House of Representatives' Comparative Suite," POPVOX Foundation

Additional NLP projects in the US Congress include LC Labs' experiments with legislative bill data to create bill summaries through natural language processing, which could augment the work of the Congressional Research Service and reduce the wait time for these important nonpartisan resources.¹⁷

GAO's Innovation Lab has also harnessed NLP tools to enhance its responsiveness to Congressional needs,¹⁸ with tools developed over the past several years that include:



Project Sia

An NLP tool that trawls through all Congressional committee websites for hearing notices, enabling GAO to notify committee staff about pertinent GAO reports ahead of the scheduled hearing.



Project Titan

An NLP tool aiding GAO staff in pinpointing relevant information within its past work product corpus.



Project Wordworkr

A drafting tool assisting GAO staff in adhering to the "GAO style" in their work, encompassing nonpartisan language usage.

Although use of these tools is exclusively limited to GAO employees, they demonstrate noteworthy NLP-enabled applications for a legislative context that representative bodies could explore for wide-use application. Several of these initial prototypes have been superseded by newer applications — including GAO's work on GenAI (discussed later).

17 ["Keeping Pace with AI: The Legislative Branch Charges Forward in Second Flash Report," POPVOX Foundation](#) (October 23, 2023)

18 ["Science, Technology, Assessment & Analytics at GAO,"](#) (September 2022) GAO-22-900426

COMPUTER VISION

Computer vision facilitates the interpretation and analysis of visual data such as images and videos through pattern recognition techniques. A notable application of this technology is facial recognition, which began gaining widespread adoption around 2010.

Although the application of facial recognition has been limited in the US legislative arena, various implementations are either in use or under consideration globally.¹⁹ For example, the European Parliament has used computer vision to aid in analyzing extensive volumes of archived video content.²⁰ Some parliaments, like Brazil, are employing facial recognition technologies for identity verification for electronic voting systems.²¹



Screen capture compilation of the Brazilian Senate Remote Voting System user interface and user identification sign-in screen (2023)

19 J. von Lucke, F. Fitsilis, & J. Etscheid, "[Research and Development Agenda for the Use of AI in Parliaments](#)." In Proceedings of the 24th Annual International Conference on Digital Government Research (pp. 423-433) Association for Computing Machinery (2023)

20 [Archives of the European Parliament](#)

21 "[Brazil's Senate develop a \(shareable\) app for remote voting](#)," *OECD Observatory of Public Sector Innovation (OPSI)* (April 28, 2020)

SPEECH RECOGNITION

Speech recognition converts spoken language into text. Its consumer adoption surged in the 2010s with the introduction of Siri on Apple's iPhones and Amazon's Alexa.²²

Recently, US Senator John Fetterman [D, PA] revealed that he began using speech recognition technology following a significant stroke last year.²³ The necessity to accommodate Fetterman led the Senate to adopt real-time, closed captioning capabilities, illustrating how needs that arise in response to an individual need can benefit the institution as a whole. While AI-enabled transcription technology is improving rapidly, the Senate is currently opting to have these captions "produced by professional broadcast captioners rather than artificial intelligence in order to improve accuracy."²⁴

As speech recognition technology continues to advance, adoption within legislative bodies will likely increase, making proceedings more accessible and efficient. The technology could potentially serve a broader array of applications, such as real-time transcription of debates, aiding in document preparation, or even facilitating multilingual communication, thus playing a pivotal role in modernizing legislative processes and making them more inclusive. Already, some courts in the US are experimenting with automated speech-to-text tools to address a shortage of court reporters.²⁵

22 Rhodri Marsden, "[Has voice control finally started speaking our language?](#)" *The Guardian* (December 4, 2016)

23 Anthony Adragna, "[John Fetterman choked up during a hearing discussing how transcription technology changed his life following his stroke,](#)" *Politico* (September 21, 2023)

24 Mini Racker, "[Exclusive: John Fetterman is Using This Assistive Technology in the Senate to Help With His Stroke Recovery,](#)" *Time* (February 1, 2023)

25 Jule Pattison-Gordon, "[More Than Stenography: Exploring Court Record Options \(Part 1\),](#)" *Government Technology* (December 8, 2023)

The Game Changer: GenAI

Generative AI (GenAI) refers to models capable of creating novel, human-like content including text, images, audio, and video. These include Large Language Models (LLMs) like OpenAI's GPT tools (including ChatGPT), Google's Bard, and Anthropic's Claude for text generation and multimodal models (allowing for photo, video, sound, and other types of non-text input and output) like Stable Diffusion, Midjourney, and DALL-E 2.

Large language models use ML and NLP techniques to ingest enormous amounts of text data, allowing them to "learn" the structure, grammar, and context of human language, allowing them to "predict the next word" with increasing accuracy.

The committee chair opened the

- book
- hearing
- meeting
- door

Alberto Mencarelli, a parliamentary official at the Italian Chamber of Deputies, recently highlighted a compelling rationale for the compatibility of legislatures with LLM-enabled tools, given the linguistic foundation of legislative work:

[I]t can be argued, to a broad approximation, that both parliamentary work and the functioning of LLMs have in common the fact that they use language as a key element. [L]inguistic activity (both written and oral) enables parliaments to create and transmit knowledge and rules and to negotiate between different political positions.²⁶

Mencarelli makes the case that the use of LLMs by legislatures is a natural evolution of these language-based systems.

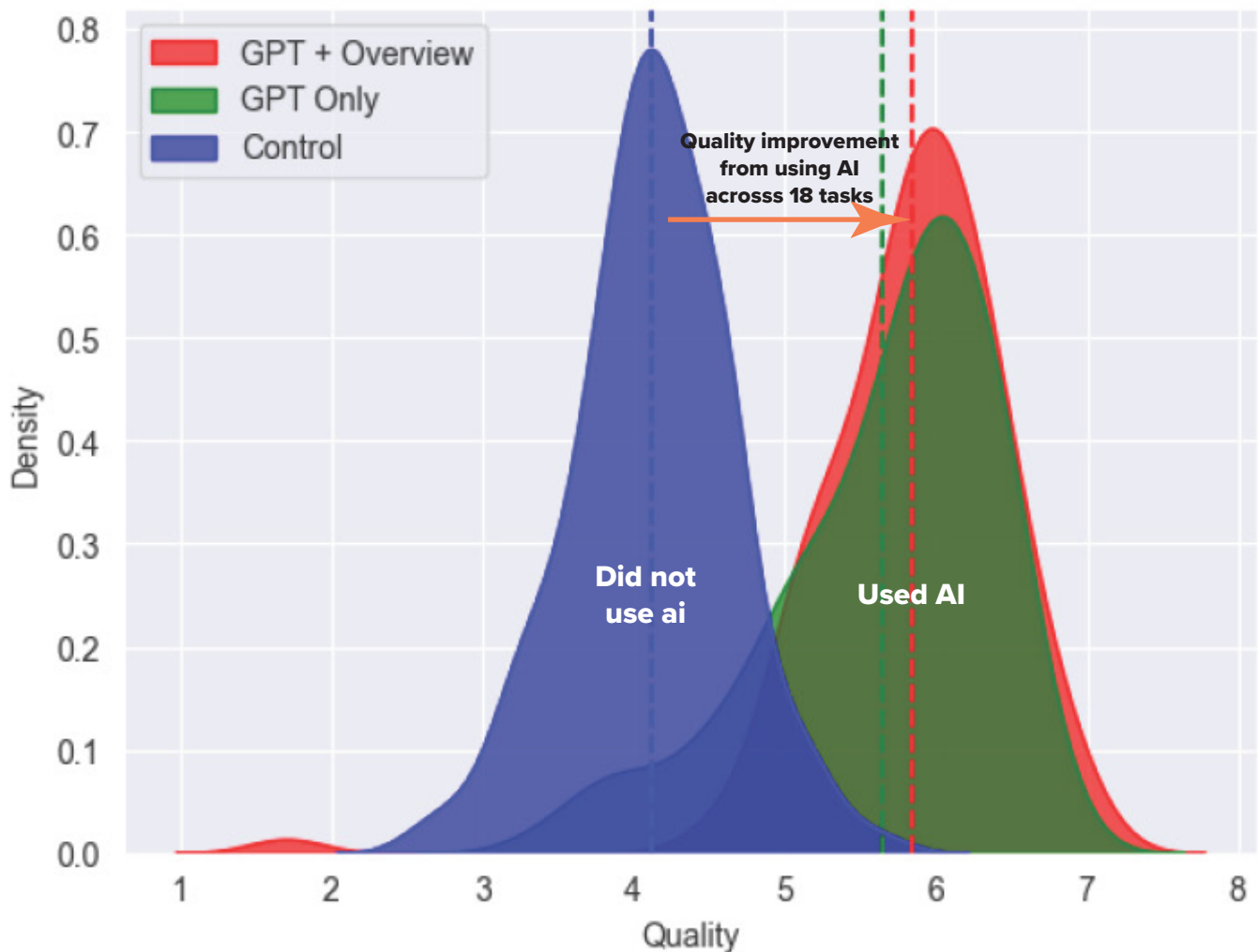
The release of ChatGPT on November 30, 2022 marked a pivotal moment, propelling the adoption of GenAI tools by non-technical users. By February 2, 2023, ChatGPT had amassed 1 million users, becoming the fastest-growing consumer application in history.²⁷

These tools are already reshaping work dynamics, particularly in knowledge-driven fields. A recent study conducted in collaboration with Boston Consulting Group to assess the impact of LLM tools on consultants' productivity found that "consultants using AI finished 12.2% more tasks on average, completed tasks 25.1% more quickly, and produced 40% higher quality results than those without."²⁸

²⁶ Alberto Mencarelli, "LLMs and parliamentary work: a common conversational architecture," *Substack* (August 3, 2023)

²⁷ Krystal Hu, "ChatGPT sets record for fastest-growing user base - analyst note," *Reuters* (February 1, 2023)

²⁸ Fabrizio Dell'Acqua, et. al, "Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality," *Harvard Business School Technology & Operations Mgt. Unit Working Paper No. 24-013* (September 18, 2023)



Distribution of output quality across all the tasks. The blue group did not use AI, the green and red groups used AI, the red group got some additional training on how to use AI.²⁹ Source: [Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality](#)

The study's insights are valuable for assessing the potential adoption of these tools within legislative settings, given the similarities in tasks performed by legislative staff and professional consultants. Both roles require the analysis of vast information and making tailored recommendations. Similar to the enhancement in productivity and quality observed among consultants using AI, legislative staff might leverage AI to expedite their research, craft more accurate policy memos, and address constituent inquiries more efficiently. However, legislative bodies must offer sufficient training and establish clear guidelines on AI usage to ensure the technology augments human judgment instead of supplanting or undermining it.

29 Ethan Mollick, "[Centaur and Cyborgs on the Jagged Frontier](#)," *One Useful Thing Substack* (September 16, 2023)

GenAI in the US Congress and State Legislatures

US CONGRESS

House of Representatives

The US Congress has initiated a cautious yet proactive exploration of GenAI technologies to support legislative processes. In 2023, some Members of Congress attracted attention for using ChatGPT and other LLMs to compose speeches,³⁰ formulate questions, and draft bills.³¹ Acknowledging the fast-paced adoption, the House of Representatives began taking measured steps to explore and integrate AI capabilities into Congressional operations.

In April 2023, the House's Chief Administrative Officer (CAO) established a voluntary "AI working group" at the direction of the Committee on House Administration (CHA), formalizing a structure through which Congressional staff could begin to safely explore new tools like generative language models and anonymously share their findings.³² The CAO accompanied the creation of this group with a published collection of best practices on safeguarding sensitive data and clearly communicated which commercial AI services were institutionally authorized for use.³³

In June 2023, CHA enlisted a nonpartisan detailee from the GAO's Science, Technology Assessment, and Analytics (STAA) office to research and provide counsel on AI policies for Congressional

30 "[Rep. Jake Auchincloss Uses Chatgpt Artificial Intelligence To Write House Speech](#)," Rep. Auchincloss' Website (January 26, 2023)

31 Cassie Semyon and David Mendez, "[Lieu's ChatGPT resolution seeks better understanding of AI](#)," *Spectrum News* (March 1, 2023)

32 "[House Digital Service Invitation to Join AI Working Group](#)," POPVOX Foundation

33 "[Office of the Chief Administrative Officer Notice to All House Staff](#)," POPVOX Foundation

2017

The House began developing its "[Comparative Print Suite](#)" leveraging natural language processing (NLP) to compare bills.

Dec. 15, 2022

House Select Committee on Modernization released its [final report](#), with two mentions of artificial intelligence.

Jan. 26, 2023

Rep. Jake Auchincloss [D, MA] became the first Member of Congress to [deliver a speech](#) on the House floor that had been written by AI.

March 8, 2023

Rep. Nancy Mace [R, SC] [opened](#) a House Oversight hearing on AI with remarks written by ChatGPT.

Oct. 2022

Comparative Print Suite officially launched to all House offices (available behind House firewall at [compare.house.gov](#)).

Jan. 23, 2023

Massachusetts state Sen. Barry Finegold [D-Essex] introduced privacy legislation "[drafted](#)" with the help of ChatGPT."

March 3, 2023

Rep. Ted Lieu [D, CA] [introduced](#) a resolution drafted entirely by ChatGPT.

April 13, 2023

Alaska state Rep. Jesse Sumner [R-Wasilla] [used Microsoft Copilot](#) to write a bill legalizing gambling on Alaska ferries.

operations. Her work includes convening Members and staff with AI expertise or interest, gathering insights and concerns, consulting with Executive branch experts, and promoting consistency in any emerging Legislative and Executive branch policies. In September 2023, the committee issued its inaugural “Flash Report,”³⁴ instructing support agencies and the internal operational offices of the House to publicly catalog current and potential AI uses — a step towards aligning AI adoption. Further guidance from the Committee urged the agencies to create comprehensive AI-related governance documents aligned with the US National Institute of Standards and Technology (NIST) AI Risk Management Framework³⁵ and to inform the committee about any AI advisory committees, pilots, or staff upskilling initiatives. Subsequent CHA Flash Reports have been issued on a monthly basis.³⁶

During a September 14, 2023 Congressional hackathon, then-House Speaker Kevin McCarthy emphasized the significance of balancing the risks and the potential to employ new automated technologies to better serve the public: “I understand the fear, but I also want to understand the opportunity. And I don’t want to see things only happening in the private sector.”

34 Marci Harris and Aubrey Wilson, “[House ‘flash report’ on AI signals capacity gains](#),” *FedScoop* (September 18, 2023)

35 NIST [AI Risk Management Framework](#)

36 Committee on House Administration [Subcommittee on Modernization Reports](#)

April 24, 2023

The House of Representatives CAO announced an experimental [AI working group](#) with 40 licenses of ChatGPT for Congressional offices to try out the technology.

June 26, 2023

The House of Representatives CAO [called for](#) Congressional offices to limit their use of commercial LLM services to the paid version of ChatGPT, with guidance on safeguarding sensitive data.

Sept. 13, 2023

The California legislature became the [first legislature](#) (that we know of) to adopt an AI-written legislative resolution.

Sept. 14, 2023

AI was prominently discussed & AI-enabled prototypes shared at [Congressional hackathon](#).

Nov. 14, 2023

Third AI Flash Report [released](#).

Dec. 2023

Senate issues [guidance](#) for using AI.

May 16, 2023

Sen. Richard Blumenthal [D, CT] kicked off an AI hearing with [opening remarks](#) written and [delivered](#) by AI trained on his voice and previous remarks.

June 26, 2023

Committee on House Administration onboarded a nonpartisan detailee from the Government Accountability Office to work exclusively on AI policy and processes for House operations.

Sept. 14, 2023

Committee on House Administration issued its first “[Flash Report](#)” requesting [public reporting](#) of AI uses by support agencies.

Oct. 20, 2023

Second AI Flash Report [released](#).

Dec. 18, 2023

Fourth AI Flash Report [released](#).

Senate

Similarly, the Senate Sergeant at Arms Chief Information Officer (SAA CIO) established an internal staff AI working group in November 2023 to foster experimentation and explore use cases. The chamber issued internal guidance in December 2023 authorizing use of Google’s Bard, OpenAI’s ChatGPT, and Microsoft Copilot with required compensating safety controls to decrease risk.

The directive issued by the Senate Sergeant at Arms’ Chief Information Officer (SSA CIO) allows use of the three AI services accompanied by safety controls. This will allow staff to experiment and become familiar with the technology while maintaining a cautious approach to wider deployment. The guidelines make it clear that human involvement remains a cornerstone of responsible usage.³⁷

Legislative Workflow Disruptions

Co-author Marci Harris recently warned that “without measured steps to understand and responsibly deploy these technologies, our democratic institutions risk being overrun or out-manuevered by outsiders deploying this technology to influence them.”³⁸

While new GenAI tools are already providing productivity gains in some areas of the legislative workflow, they are also creating disruptions — and these likely portend more significant issues ahead. In January 2023, Stanford’s John Nay warned of a coming era of “large language models as lobbyists”³⁹ and in March, Harvard’s Nathan E. Sanders and Bruce Schneier warned that LLMs would enable “high quality political messaging quickly and at scale.”⁴⁰ These predictions are becoming reality as lobbyists⁴¹ and academics⁴² begin to experiment with GenAI tools to target lawmakers.

In September 2023, POPVOX Foundation joined the Westminster Foundation for Democracy to provide evidence to the UK House of Commons Public Administration and Constitutional Affairs Committee and cautioned that:

Given the proliferation of GenAI since December 2022, it may be that 2022 is the last year in human history in which we can be certain that new texts were written by humans. While the addition of GenAI tools to the field of lobbying and advocacy may not be problematic in itself, these tools do raise new questions.⁴³

37 Aubrey Wilson, “[The Senate Issues Guidelines for Responsible Internal AI Usage](#),” POPVOX Foundation (December 14, 2023)

38 Alexandra Kelley, “[Senate’s top tech official greenlights research use of generative AI](#),” FCW/NextGov (December 19, 2023)

39 John Nay, “[Large Language Models as Lobbyists](#),” Stanford Law School (January 6, 2023)

40 Nathan E. Sanders and Bruce Schneier, “[How AI Could Write our Laws](#),” MIT Technology Review (March 13, 2023)

41 Kate Ackley, “[Lobbyists Flirt with AI While Remaining Cautious of its Promises](#),” Bloomberg Government (September 8, 2023)

42 Steve Israel, “[Here’s What Happened When ChatGPT Wrote to Elected Politicians](#),” The New Republic (March 30, 2023)

43 “[How artificial intelligence and large language models may impact transparency](#)” Joint submission by WFD and POPVOX Foundation in response to the call for evidence for the post-legislative scrutiny inquiry of the UK Lobbying Act 2014 (September 20, 2023)

While the proactive approaches to GenAI taken by the US House and Senate are commendable, the reality is that failing to understand and respond to these new technologies is not optional. Legislatures can either take steps to keep pace or be overwhelmed by the brute force changes that these technologies are bringing. For example:

◆ **Increased Volume of Advocacy Comments**

The Brookings Institution's Bridget C. E. Dooling and Mark Febrizio warned in May 2023 that AI-enabled technologies will make it much easier to create a large volume of comments (both genuine and fake) that could potentially flood government consultation processes.⁴⁴ Of course, legislative offices are among the most highly targeted audiences of advocacy communications and anecdotally, offices are already seeing an increase in message volume. The newly established House Digital Services team is monitoring these developments and exploring possible solutions.

Ultimately, the response to increased input volumes due to LLM-generated comments or calls should not be LLM-generated responses that just establish an AI-talking-to-AI loop removing the constituent and the lawmaker from the process completely. Researchers like Beth Simone Noveck at Northeastern University's GovLab are looking into ways to use AI to upgrade these processes and "Reboot Democracy"⁴⁵ for a better, more informative, and more satisfying constituent engagement experience. (AI-enabled engagement approaches will be discussed extensively in Volume 2 of this report.)

◆ **Issues with LLM-drafted Bill Text**

For the professional lawyers in the House Office of Legislative Counsel (HOLC), LLM tools have resulted in a surge of Members and staff "drafting" bill text using third-party LLM services. And while these drafts may be formatted to resemble a bill, it is often the case that the LLM-produced text would not have the policy impact that the lawmaker intends — as was recently the case in New York⁴⁶ — or could lead to other unintended interactions with United States Code. Although policymakers and their staff may assume that providing a draft to legislative counsel with LLM-generated text would streamline the process and allow for expedited review, the opposite is actually true. LLM tools are helping lawmakers and staff more easily explore policy ideas and turn them into proposals, which is increasing the volume of drafts submitted to the HOLC. The lawyers reviewing these submissions, however, must still undertake the same review process as always, without any corresponding increase in resources or tools to help them handle the increased workload.

A recent survey found that 82% of lawyers believe AI can be used for legal work, with 51% thinking it should be used.⁴⁷ In law firms, AI is being used for everything from e-discovery to legal research, to document management and automation, reducing the time spent on manual tasks, enabling legal professionals to devote more time to client-focused activities. Over time, it will be necessary for legislatures to ensure that this same kind of augmented efficiency is available for the professional lawyers who draft legislation, while preserving human oversight. (Examples and strategies for incorporating AI into legislative drafting will be discussed further in Volume 2.)

44 Bridget C. E. Dooling and Mark Febrizio, "[Robotic rulemaking](#)," *Brookings* (April 4, 2023)

45 "[Reboot Democracy](#)," The GovLab at the Burnes Center for Social Change

46 Grace Ashford, "[A.I. Wrote a Housing Bill. Critics Say It's Not Intelligent](#)," *The New York Times* (July 14, 2023)

47 "[AI's impact on law firms of every size](#)," *Thomson Reuters* (August 15, 2023)

◆ Privacy and Security Issues with Commercial Tools

Another significant issue, despite the clear guidance issued by the House CAO and Senate SAA urging staff to only use commercial LLM tools for research and avoid posting non-public information in chat windows — is that these recommendations are unenforceable. Unapproved uses are occurring and will become more common as staff and Members come to rely on these tools in other parts of their lives, which is why it is essential for the institution to take steps to provide more secure and private ways to access these technologies beyond commercial subscriptions.

GAO is leading the way with its “Project Galileo” — an internal LLM that deployed in September. GAO’s Chief Data Scientist Taka Ariga recently explained the impetus (in an event keynote speech): “We want to deploy our own large language model inside our own computer infrastructure so that we control what comes in [and] what goes out.”⁴⁸ Project Galileo leverages a commercial pre-trained model to access the corpus of GAO data. “We can actually experiment with a variety of learning techniques on how to point that generative AI to GAO’s corpus – that really rich historical data that we have.”

These are just a few examples of LLM-enabled disruptions that will only increase over time and require legislative institutions’ attention and increased technical capacity to address. They likewise point to the need for legislative bodies to begin preparing to increase their own technical capacity to respond in kind. (Later volumes in this series will look at approaches legislatures are taking to leverage AI tools to process, understand, and respond to these challenges.)

“The goal is to have thoughtfully implemented AI that can equip Congress to improve its capacity and meet rising constituent expectations in an increasingly digital age.”⁴⁹

48 Cate Burgan, “[GAO Building GenAI Tools to Face Internal Challenges](#),” *MeriTalk* (November 9, 2023)

49 Kate Ackley, “[Lobbyists Flirt with AI While Remaining Cautious of its Promises](#),” Bloomberg Government (September 8, 2023)

STATE AND LOCAL GOVERNMENTS IN THE US

Several state legislatures have begun experimenting with GenAI. In January 2023, Massachusetts state Senator Barry Finegold introduced a privacy bill crafted with the aid of ChatGPT, marking one of the first instances of AI-generated legislative text.⁵⁰ This innovative approach didn't remain an isolated case for long, as legislators in other states swiftly embraced AI to draft bills encompassing a range of topics from gambling regulation to non-controversial ceremonial resolutions. The rapid exploratory adoption of AI triggered states to initiate the formulation of policies governing accountable and ethical AI use. On August 15, 2023, California became the first state legislature to adopt an AI-penned resolution (Senate Concurrent Resolution No. 17), outlining principles for responsible AI use.⁵¹ On April 13, 2023, Alaska state Representative Jesse Sumner used Microsoft Copilot to draft a bill aimed at legalizing gambling on Alaska ferries.⁵² These instances underscore the growing inclination towards AI-assisted legislative drafting across various states, each with its unique legislative requirements and focus areas.

In exploring AI-enabled use cases beyond legislative drafting, multiple state legislatures have created advisory committees to oversee the technology's deployment, inventory its use, and strive to understand tools in greater detail. In June, the Louisiana legislature directed the state's Joint Committee on Technology and Cybersecurity to research AI's potential impact on "operations, procurement, and policy" within the government.⁵³ In the same month, Texas Governor Greg Abbott signed into law House Bill 2060 to create an AI advisory council to monitor state agency use of AI and determine the need for a code of ethics.⁵⁴ North Dakota, Puerto Rico, and West Virginia created similar councils during the 2023 legislative session.⁵⁵ In July, Connecticut's General Assembly enacted Public Act No. 23-16 directing the state's Office of Policy Management to "develop and establish policies and procedures concerning the development, procurement, implementation, utilization and ongoing assessment of systems that employ artificial intelligence and are in use by state agencies."⁵⁶

As state legislatures begin to grapple with the introduction of AI tools across their own entities and the private sector, the need is growing for legislators to be more educated and familiar with the technology that many are beginning to look to regulate. According to the National Conference of State Legislatures, twenty-five states, Puerto Rico, and the District of Columbia had AI-related legislation introduced for consideration in the 2023 legislative session.⁵⁷

50 Mojer Chatterjee, "[AI just wrote a bill to regulate itself](#)," *Politico* (July 19, 2023)

51 "[State Legislature Adopts Resolution on AI ... Drafted by AI](#)," *Tribune News Service* (August 15, 2023)

52 Jeff Landfield, "[Alaska House representative uses artificial intelligence to write bill legalizing gambling on Alaska ferries](#)," *Alaska Landmine* (November 21, 2023)

53 [Louisiana Senate Concurrent Resolution No. 49](#) (2023)

54 Keaton Peters, "[More than a third of state agencies are using AI. Texas is beginning to examine its potential impact](#)," *The Texas Tribune* (January 2, 2024)

55 "[Artificial Intelligence 2023 Legislation](#)," National Conference of State Legislatures (September 27, 2023)

56 "[An Act Concerning Artificial Intelligence, Automated Decision-Making and Personal Data Privacy](#)," Connecticut Substitute Senate Bill No. 1103 (July 1, 2023)

57 "[Artificial Intelligence 2023 Legislation](#)," National Conference of State Legislatures (September 27, 2023)

International Collaboration and Examples

While legislatures around the world often deal with very different political dynamics and issues, the adoption of new technologies is one area in which these institutions can benefit from sharing information and learning from one another. The Inter-Parliamentary Union has been an important convener and information hub for the digital transformation of parliaments worldwide, especially through the work of its [Centre for Innovation in Parliament](#) and resources such as the recent guide to digital transformation:⁵⁸

In reflecting on her research into AI in public institutions: Deputy Chief Information Officer (CIO) of Brazil's Chamber of Deputies Patricia Almeida described three stages of AI adoption in parliaments:

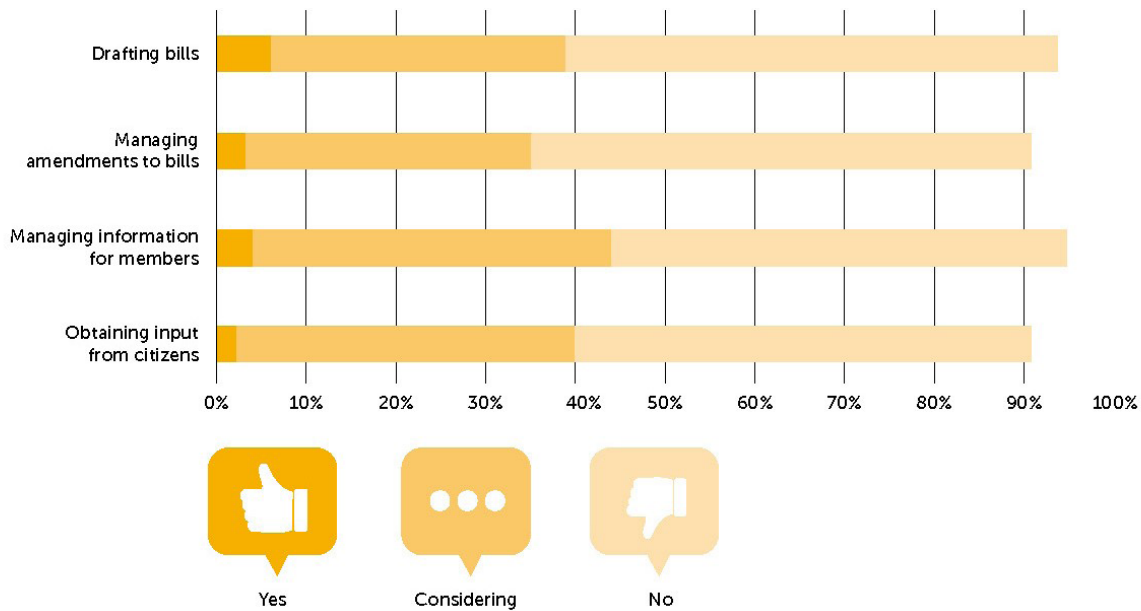
1. The first group includes parliaments that have already implemented AI projects successfully and are now focusing on making these solutions sustainable. Their focus is on policy and strategy development and creating requirements for public procurement that include AI services.
2. The second group includes parliaments that are experimenting with AI in a “lab mode” — testing solutions to demonstrate their benefits and gain support and funding from parliamentary leadership.
3. The third group consists of parliaments that have not yet adopted AI, primarily due to the lack of basic IT infrastructure, legislative systems, and data governance.

“Each group has different needs and can benefit from guidance and support, especially from inter-parliamentary networking.”⁵⁹

58 [“Guide to digital transformation in parliaments,”](#) Inter-Parliamentary Union (2023)

59 [“Expert perspectives on AI in parliament,”](#) Inter-Parliamentary Union Innovation Tracker (October 21, 2023)

A 2020 article on “Artificial Intelligence in the Parliamentary Context” found, at the time, that only 10% of parliaments had adopted any kind of AI technology, with 6% related to legislative drafting. However, 45% of those surveyed indicated that they anticipated some kind of AI adoption in the two years that followed.⁶⁰



Source: “[Artificial Intelligence in the Parliamentary Context](#),”
Techno-Politics Series: 4 — Smart Parliaments Data-Driven Democracy (2022)

In July 2023, The Open Government Institute (TOGI) at Zeppelin University, in partnership with the Hellenic OCR team, orchestrated an international research workshop on “AI in Parliaments” in Friedrichshafen, Germany. The event fostered a platform for representatives from diverse parliaments to exchange insights on AI policies and implementations in their respective countries, laying a foundation for potential future collaborations.



During a June 2023 workshop titled “AI for Parliaments” at Zeppelin University, participants from ten legislative bodies shared and discussed their AI endeavors.

⁶⁰ Xenia Ziouvelou, George Giannakopoulos, and Vassilis Giannakopoulos, “[Artificial Intelligence in the Parliamentary Context](#),” *Techno-Politics Series: 4 — Smart Parliaments Data-Driven Democracy (2022)*

In September 2023, three hundred parliamentarians, experts, and practitioners representing seventy parliaments from around the world gathered in Montevideo, Uruguay for the Second World Summit of the Committees of the Future, hosted by Parliament of Uruguay and the Inter-Parliamentary Union (IPU). Attendees discussed rapid developments in AI and challenges for legislatures worldwide. The outcome document emphasizes foresight, ethics, human rights, and global cooperation as central to government's role in steering AI's evolution in line with democratic values. Discussions encouraged further opportunities for parliamentary exchange and coordination on AI, such as an online map of AI-related actions. Annual Committees of the Future summits are proposed to continue collaboration between global parliaments on AI governance.⁶¹



In September 2023, the “Second World Summit of the Committees of the Future” convened in Montevideo, Uruguay to discuss artificial intelligence in future committee work.

The following examples are a sample of the experimentation and advances being made in legislative bodies around the world:

Argentina

The Argentinian Chamber of Deputies’ “DipLab” began experimenting with AI in 2019 — identifying processes that could benefit from AI, conducting training sessions, developing AI diagnostic tools with international partners, and creating an AI guide for parliamentary work.⁶² Existing AI projects include digitizing transcripts of plenary sessions from 2005 to 2020 and creating an editable transcript database in collaboration with the National Council for Scientific and Technical Research (CONICET). The algorithm indexes legislative information, allowing for effective searching and analysis of public policy trends and legislative changes. Future projects include developing a virtual tool for bill drafting with AI integration, digitizing all parliamentary archives, and launching additional AI-driven projects to improve efficiency and transparency in parliamentary work.⁶³

⁶¹ [“Second World Summit of the Committees of the Future” Inter-Parliamentary Union](#) (September 2023)

⁶² [“Inteligencia Artificial, Proyectos del DipLab,” DipLab, Diputados Argentina](#)

⁶³ [“Argentina: First steps towards an AI driven Chamber of Deputies,” IPU Innovation Tracker Issue 16](#) (October 21, 2023)

Brazil

In Brazil, the Chamber of Deputies uses its ML-powered “Ulysses” platform to analyze and tag large volumes of documents and data and match content to user interests. The platform allows the public to express support or opposition and comment on pending bills (sometimes receiving up to 30,000 comments on one bill) and uses ML and NLP to analyze the comments.⁶⁴ In exploring further public participation, the legislature is piloting AI chatbots to provide a conversational interface for citizens to access information on legislators, bills, and budget data. The Chamber is also experimenting with computer vision techniques like facial recognition to identify legislators during video broadcasts and plenary sessions.⁶⁵

Across the legislature, the Brazilian Senate is exploring AI-based speech recognition services for various parliamentary activities.⁶⁶

Estonia

The Estonian Parliament, the Riigikogu, has incorporated AI into its operations, using a system named HANS, based on large language models, to transcribe all parliamentary meetings, including plenaries and committees, through automated speech recognition. For plenary sessions, the AI-generated verbatim text is reviewed and corrected by editors before being published online. In committees, the digitally generated transcript is used by staff to manually prepare minutes. HANS has an error rate of around 5%, which can vary depending on the speakers and the meeting context. This implementation of AI has led to a reduction in staff, particularly in replacing the Parliament’s team of stenographers, who were nearing retirement and difficult to replace due to the nature of the job.⁶⁷

The screenshot shows the HANS interface for the Riigikogu. At the top, there's a navigation bar with 'HANS 1.3.5' and a play button. Below that, a calendar for 08.06.2023 is visible. The main content area is titled 'Valitud komisjon: Ahto' and shows a list of speakers and their times. The transcription text is displayed in a large font, with a play button and a list of speakers below it. The text includes a list of speakers and their times, and a main text area with transcription content.

Screen-capture of the Riigikogu HANS interface displaying AI-generated transcription text

64 "Case Study: Brazil: A digitally mature parliament," *Inter-Parliamentary Union* (January 6, 2022)

65 "Brazil: Ulysses machine learning for transparency and citizen participation," *Inter-Parliamentary Union* (July 21, 2021)

66 F. Fitsilis, & J. von Lucke, "Research and Development Agenda for the Use of AI in Parliaments," *The Journal of Legislative Studies* (2022)

67 "A view from Estonia: AI for advanced beginners," *IPU Innovation Tracker Issue 16* (October 21, 2023)

Looking ahead, the Riigikogu plans to explore more advanced AI applications, such as generating automated summaries of committee meetings. To address concerns about reliability and accuracy, the Parliament is adopting a dual approach: developing technology in “lab mode” to understand its capabilities and limitations while simultaneously engaging leaders and politicians in discussions about AI requirements. Estonia is prioritizing human oversight, ensuring that committee reporters will review, edit, and finalize the AI-generated text, mitigating fears about AI replacing human judgment.⁶⁸

European Union

At the 2023 “AI for Parliaments” conference in Friedrichafen, Germany, Charalampos Moschopoulos, the EU’s Project Leader in Artificial Intelligence, discussed the European Parliament’s (EP) integration of AI in its administrative and operational processes. The EP has adopted various AI-enabled tools to enhance efficiency and effectiveness including chatbots, which automate question-and-answer processes across multiple sectors, aiding in quick and efficient responses to queries.⁶⁹ Additionally, the EP uses an auto-summarizer and Microsoft Editor to provide concise text summaries, facilitating the understanding of complex documents.⁷⁰

The EP has also implemented eTranslation, a tool capable of translating documents into multiple languages, an essential function for a multilingual institution like the EP.⁷¹ Another significant integration is the Speech to Text service, which offers real-time transcription, enabling accurate and immediate documentation of spoken words during meetings and discussions. Furthermore, the EP uses its EUROVOC system for automatic document indexing within its system, streamlining the categorization and retrieval of documents.

Finland

The Finnish Parliament’s Committee for the Future, established in 1993, engaged in a unique experiment as part of its foresight activities. In 2021, the committee conducted a hearing using simulated personalities from “Project December,” an AI project enabling conversations with chatbots modeled after real or fictional characters. This hearing, which was structured similarly to standard parliamentary hearings, involved a detailed preparation process. During the session, the committee members interacted with two AI personalities, Muskie and Saara, posing questions and receiving written responses.

This initiative’s purpose was to explore the potential of AI in providing perspectives and information, and the technology’s ability to formulate arguments and counterarguments, akin to the contributions of human experts. After each interaction, the committee members discussed the AI responses and their implications with the facilitators. This innovative approach by the Finnish Parliament’s Committee for the Future highlights their commitment to integrating advanced technology into legislative processes and exploring AI’s role in enhancing parliamentary functions.⁷²

68 [“Estonian parliament uses speech recognition technology to create verbatim records,”](#) e-Estonia (September 2020)

69 [“Bringing the European Parliament closer to citizens through AI,”](#) Microsoft (Sep 15, 2020)

70 F. Fitsilis, & J. von Lucke, [“Research and Development Agenda for the Use of AI in Parliaments,”](#) *The Journal of Legislative Studies* (2022)

71 Gregorio Sorgi, [“EU gives more power to AI translation machines,”](#) *Politico* (June 15, 2023)

72 Fotios Fitsilis, [“Artificial Intelligence \(AI\) in parliaments – preliminary analysis of the Eduskunta experiment,”](#) *The Journal of Legislative Studies*, 27:4, 621-633 (2021)

India

In India, a newly inaugurated parliament building incorporates several AI-powered technologies to enhance operations, accessibility, and security. One innovation is the “Digital Sansad” application⁷³ that allows Members of Parliament to listen to proceedings in their own languages in real time. This AI-enabled platform leverages automatic speech recognition to accurately transcribe and translate speeches word-for-word. It aims to facilitate participation and understanding across India’s linguistic diversity.

The building’s security also utilizes AI, including biometric scanning and facial recognition to securely identify and grant access to officials. As MPs approach the entrance gates, scanning technology recognizes and verifies their identity, automatically opening the gates without need for badges or cards. Inside, access controls regulated by AI limit entry to sensitive areas like the Prime Minister’s wing.⁷⁴

Italy

The Italian Senate utilizes an AI system, “Gestore Emendamenti” (GEM), to manage amendments.⁷⁵ The system employs text clustering algorithms to quickly identify groups of similarly worded amendments. “The aim is to assist the Senate staff in the detection of groups of amendments similar in their textual formulation in order to schedule their simultaneous voting.”⁷⁶ While the system produces near-instant results, staff members review, approve, modify, and integrate the machine-generated analysis to ensure that no decisions are made without human oversight.

Singapore

Similar to the US Congress, the Ministry of Communications and Information (MCI) of Singapore issued guidelines for public officers and Members of Parliament on the use of AI tools like ChatGPT for research and writing in May 2023, allowing for responsible experimentation.⁷⁷ The guidelines explicitly instruct officers not to input sensitive information into these GenAI applications and require that all AI-generated work be reviewed to ensure accuracy and compliance with copyright laws. These guidelines target both general users of AI applications and developers creating apps for the government.

Singapore also released “Pair,” a suite of tools designed to amplify the productivity of public officers, including legislators. Pair offers a secure platform on government-issued laptops, allowing officers to harness LLMs’ capabilities without compromising confidential data. Endorsed by the AI Policy Group within the Smart Nation and Digital Government Group, Pair operates on a question-answer mechanism, akin to a secure and swift version of ChatGPT tailored for public officers. It has received clearance from Singapore’s Smart Nation Digital Government Office for use with documents up to the Restricted/Sensitive Normal classification, and its “bring your own data” feature allows officers to integrate personal datasets, enhancing its adaptability and relevance.⁷⁸

73 [“Digital Sansad app: An AI-powered platform to transcribe house proceedings at the new Parliament building,”](#) *IndiaAI* (June 1, 2023)

74 Milin Stanly, [“The Indian government is leveraging the power of AI in Parliament building for safe and secure working,”](#) *IndiaAI* (August 10, 2023)

75 [“How AI helps the Italian Senate manage amendments,”](#) *Inter-Parliamentary Union Innovation Tracker Volume 12* (October 6, 2022)

76 Tommaso Agnoloni, Carlo Marchetti, Roberto Battistoni, Giuseppe Briotti, [“Clustering Similar Amendments at the Italian Senate”](#) (June 20, 2022)

77 Osmond Chia, [“Public officers can use ChatGPT and similar AI, but must take responsibility for their work: MCI,”](#) *The Strait Times* (May 23, 2023)

78 [“Pair - A Helpful Assistant Powered by Large Language Models \(LLMs\),”](#) *Singapore Government Developer Portal* (September 29, 2023)

Taiwan

Beginning in 2015, Taiwan’s legislature integrated AI into its democratic processes through the vTaiwan (virtual Taiwan) and Pol.is platforms.⁷⁹ vTaiwan is an online platform designed for public consultation and participatory legislation. Pol.is, an AI-driven tool, plays a crucial role in the vTaiwan process — participants can express their opinions on specific issues, and the AI system visualizes these opinions, highlighting areas of consensus and disagreement. This visualization helps legislators and policymakers to understand public sentiment on various issues in a nuanced and detailed manner. This innovative approach to lawmaking has been applied to various issues, including the regulation of online alcohol sales, telemedicine, and fintech regulations.

Despite the technical success of the initiative, the substantive success of deliberative fora for public input is still dependent on the acceptance of that input by policymakers. As World Bank governance expert, Tiago Peixoto, explained to *The Daily Beast*, “Technology made it extremely easy for any government to put something out there and ask citizens... but it didn’t make it easier for governments to be able to respond.”⁸⁰

Greater Collaboration and Knowledge Sharing

Innovation in AI adoption in parliaments worldwide presents a significant opportunity for legislative bodies to learn from each other as they adapt to and experiment with new technologies. International fora, such as the Second World Summit of the Committees of the Future and the “AI in Parliaments” workshop, have already begun to facilitate this exchange of knowledge and strategies. These events have proven valuable in showcasing the varied applications of AI in legislative processes, from Argentina’s digitization of transcripts to Estonia’s AI-based transcription systems, and from Finland’s AI chatbot experiments in committee hearings to India’s use of AI for real-time language translation in its new parliament building.

As legislative bodies continue to navigate the early stages of AI experimentation, the opportunity to learn from each other’s successes and challenges becomes increasingly important. With the ongoing advancements in large language models and AI tools, and the growing interest in AI applications within legislative contexts, there is an expectation of more comprehensive AI integration in parliaments in 2024 and beyond. This trend underscores the potential for greater collaboration and shared learning among legislatures globally as they explore the capabilities and implications of AI in governance.

79 Carl Miller, “[How Taiwan’s ‘civic hackers’ helped find a new way to run the country](#),” *The Guardian* (September 27, 2020)

80 Nick Aspinwall, “[Taiwan Tried to Digitize Democracy. It Was a Huge Flop](#),” *The Daily Beast* (November 1, 2023)



**Initial Lessons, Emerging
Frameworks, and
Recommendations for
Phased Adoption**

Part I examined different types of automated technologies, early implementations of AI in legislative workflows, and initial responses over the past year to the proliferation of chat-based GenAI. Part II addresses how legislatures should be thinking about long-term investments and resource planning to incorporate AI into legislative workflows.

The ultimate goal of AI adoption in legislatures should be to help these institutions and those who serve within them do a better job for their constituents. This can take many forms — from better tools for managing large quantities of information that result in better legislating to improving the constituent engagement experience, or simply increasing the institutions’ day-to-day operational efficiency.

In 2022, researchers Fotios Fitsilis and Jörn van Lucke invited professional staff in the Greek and Argentine parliaments to help brainstorm parliamentary uses for AI, which ultimately resulted in a list of 210 use cases across various categories ranging from the legislative process to building security:⁸¹

◆ **Legislation**

- Automated drafting of laws
- Impact analysis
- Risk management
- Process automation
- Digital twins of laws

◆ **Parliamentary Control**

- Media monitoring
- Social media analysis
- Auditing of laws and contracts
- Petitions analysis

◆ **Administration**

- Visitor management
- Energy management
- Cybersecurity and authentication
- Recruitment and Human Resources

◆ **Assistance for MPs**

- Speech transcription and translation
- Notification and workflow management
- Argument analysis and debate aids
- Voting analysis

◆ **Outreach**

- Citizen inquiries and ticketing
- Political education apps and games
- Visualization of debates and arguments
- Voting advice applications

◆ **Infrastructure**

- Building and facility management
- Accessibility features

The diverse potential applications of AI in legislatures highlight the technology’s potential to revolutionize the way these institutions function. As legislatures continue to explore and adopt AI technologies, the focus should remain on leveraging these tools to better serve constituents and strengthen the legislative process. By taking a phased approach, investing in capacity building, ensuring human oversight, and participating in collaborative efforts, legislative bodies can integrate AI in ways that uphold transparency while achieving operational enhancements. Rather than replace human judgment, thoughtfully implemented AI can equip parliaments to meet rising constituent expectations in an increasingly digital era.

81 Fotios Fitsilis and Jörn van Lucke, “Using Artificial Intelligence in Parliament - The Hellenic Case,” *Electronic Government* (2023)

Adoption Approaches

Legislative bodies aiming to harness the benefits of AI have myriad options for deploying AI-enabled tools, each presenting a unique blend of control, customization, and institutional integration. These options range from using existing commercial tools — many of which are cloud services such as Google Workspace, Microsoft365, Salesforce, Airtable, Mailchimp, etc. — that are incorporating AI into their core offerings. Another option is the current route taken by the US House and Senate, establishing policies for use of commercial AI products such as OpenAI's GPTPlus, Google's Bard, and Anthropic's Claude. As discussed above, however, these subscription services should only be used with non-sensitive, public information, which limits their utility for legislative staff. The next level of adoption, as with GAO's Galileo project, is for legislatures to leverage third party models (such as OpenAI or Anthropic Claude) through an advanced programming interface (API), to query and derive insights from their own internal data. Current use terms for these companies stipulate that data passed through APIs is not retained or used to train their underlying model, allowing for greater security for legislative queries and applications. Over the long term, however, especially as the technology evolves and new methods for fine-tuning open source models with proprietary data emerge, legislatures may be able to create and maintain their own public sector LLMs. However, this final option is likely too resource intensive with the current state of the technology.

◆ COTS

Commercial Off-the-Shelf software that leverages AI

◆ 3rd-Party GenAI

Using third-party GenAI tools for basic tasks

◆ Custom GenAI

Developing custom apps (either institutional or with contractor) that leverage commercial models

◆ Institutional LLM

Maintaining institutional LLM, potentially leveraging open source models

THIRD PARTY COTS (COMMERCIAL OFF-THE-SHELF) APPLICATIONS

Third Party applications — such as Microsoft365, Google Workspace, Canvas, Airtable, and other cloud services — provide AI-enabled services through services that legislative staff may already be using in their workflows. These tools enable legislative staff to easily integrate new capabilities without upfront development costs or even new procurement. While these tools will necessarily be more general and not specific to the legislative workflow, they may provide significant efficiencies for non-legislative functions such as document drafting, information summarization, and scheduling.

COMMERCIAL GENAI APPLICATIONS

Legislative staff are already experimenting with commercial GenAI tools like ChatGPT/GPT-4, Claude, and Bard to assist with writing, research, and constituent interactions. While these tools can provide helpful drafts and suggestions, their use requires diligent verification to protect against factual errors, bias, and potential copyright issues. In addition, the terms of service for use of the basic interface with these models in most cases allows any information entered to be used to “train” the underlying model. As noted above, both the US House and Senate have approved the use of some of these tools for research and experimentation, with warnings against entering personally identifiable or non-public information. These privacy and data concerns will limit the usefulness of the commercial tools for further integration into legislative workflows, highlighting the need for government entities to make custom tools available in the future.

CUSTOM GENAI TOOLS THAT LEVERAGE THIRD PARTY MODELS

In order to address some of the privacy and data quality concerns with using the public interface for commercial models, institutions can develop their own interface that leverages “retrieval-augmented generation” (RAG) to improve the quality of responses by grounding the model on institutional data. (This approach will be discussed in detail in volume 2.) GAO uses this approach for its “Project Galileo” — leveraging a commercial API to return responses that reference GAO’s internal data.⁸² This approach allows higher quality, more relevant responses, and queries are not used to train the underlying commercial model. However, the use of this method requires significant in-house technological skill, organized data management, and a commitment to ongoing maintenance and support for the technology.

INSTITUTIONAL LARGE LANGUAGE MODELS

In the long term, it is possible that legislatures will develop and support their own institutional LLMs, trained on legislative text and the vast corpus of precedents, statements, testimony, and other records of the institution. This technology is still so new that it is not yet clear what the best or most efficient architectural approach will be for large organizations and enterprises as they approach this question. With current capabilities, developing an institutional model from scratch would likely be too resource-intensive, requiring massive datasets, extensive compute power, machine learning expertise, and a long-term investment. However, as open source models become more capable and similar institutions experiment with different approaches, bespoke institutional models may become a more viable path.

82 Cate Burgan, “GAO Building GenAI Tools to Face Internal Challenges,” MeriTalk (November 9, 2023)

Adoption Phasing & Timing

The integration of AI in legislative processes and institutional operations demands a phased approach. Initially, employing third-party applications and existing LLMs could provide useful augmentation, albeit necessitating quality and ethical oversight. Immediate actions could encompass enabling small-scale experimentation, fostering inter-office information sharing through transparent reporting, commissioning expert studies, and monitoring constituent interactions to gain insights into AI's practical utility.

In the medium term of six months to two years, the emphasis could shift towards investments in technical infrastructure to seamlessly embed AI in routine processes and to assemble multidisciplinary teams to harness AI in complex policy and oversight tasks, thereby augmenting the effectiveness of existing staff. Engaging with vendors to prototype customized AI applications tailored for legislative functions can accelerate AI adoption during this phase.

Looking further into the future, post two to five years of deliberate experimentation and integration, certain legislative bodies might be well-placed to revolutionize constituent engagement, lawmaking, and oversight using AI systems custom-built for their institutions. This phase could witness the development of in-house models trained on parliamentary data, leading to AI assistants adept in legislative processes and capable of drafting legislation in line with policy objectives. However, this requires substantial funding, multidisciplinary teams, and evolved oversight mechanisms to maintain human accountability.

In an April 2023 briefing, POPVOX Foundation shared the following recommendations with the US Congress. A review of subsequent steps taken in 2023 demonstrates that the institution independently took an approach that hewed closely to these suggestions:

Timeframe	Recommendations
Immediate (~3 months)	<ul style="list-style-type: none"> ◆ Facilitate experimentation; clarify tool incorporation guidelines ◆ Promote information sharing (e.g., via House AI Working Group) ◆ Acquire insights from other industries and legislatures ◆ Track advocacy practices and constituent engagement for inauthentic campaigns
Short-term (3–6 months)	<ul style="list-style-type: none"> ◆ Conduct hearings in pertinent committees ◆ Commission expert studies, engaging entities like GAO Innovation Lab ◆ Draw lessons from private sector innovations and global instances ◆ Encourage CRM vendors to integrate AI tools in offerings ◆ Advocate for prototype development (e.g., through House Digital Services)
Medium-term (6 months–2 years)	<ul style="list-style-type: none"> ◆ Amplify investment in tech/IT modernization for integrated information flow and process automation ◆ Formulate multi-disciplinary teams for complex policy, oversight tasks, and staff relief
Long-term (2–5 years)	<ul style="list-style-type: none"> ◆ Revolutionize constituent interaction, lawmaking, policy modeling, and oversight practices

Recommendations

1. INITIATE EARLY AND MANAGE TIMING EXPECTATIONS

Legislatures should begin the integration of AI technologies as soon as possible, focusing initially on low-risk areas to build a foundational understanding and capacity for these tools. Starting with non-critical functions allows for a learning curve, where mistakes have limited consequences, and insights can be gained without significant investment or risk. It is essential to communicate with the public and stakeholders about the gradual pace of adoption, prioritizing and preserving human decision-making and setting clear expectations that while AI can bring about significant improvements, it will not happen overnight. This transparency helps in managing expectations and fosters a trust-based relationship with the public regarding the use of AI in legislative processes.

2. PRIORITIZE DATA AS A STRATEGIC RESOURCE

Data integrity, clarity, and accessibility is paramount for harnessing AI's capabilities effectively. Institutions must either commence or continue the process of mapping, cleaning, and preparing data to take advantage of new AI capabilities. This includes ensuring that procurement contracts retain institutional access to the data. For example, recent guidance from the US Office of Management and Budget included the following directive to agencies on "Maximizing the Value of Data for AI":

In contracts for AI products and services, agencies should treat relevant data, as well as modifications to that data—such as cleaning and labeling—as a critical asset for their AI maturity. Agencies should take steps to ensure that their contracts retain for the Government sufficient rights to data and any improvements to that data so as to avoid vendor lock-in and facilitate the Government's continued design, development, testing, and operation of AI. Additionally, agencies should consider contracting provisions that protect Federal information used by vendors in the development and operation of AI products and services for the Federal Government so that such data is protected from unauthorized disclosure and use and cannot be subsequently used to train or improve the functionality of commercial AI offerings offered by the vendor without express permission from the agency.⁸³

Construct a Legislature-Wide Data Map

A data map is a structured visual representation of data sources, characteristics, pathways, and stakeholders. It encapsulates data ownership, flow, integration, and formatting, offering a clear depiction of data dynamics within the legislature.

Legislatures should consider empowering a dedicated task force or working group to create a data map of available resources, to foster broad understanding of legislative data and facilitate decision-making on data use for AI applications.

83 OMB Director Shalanda D. Young, "Proposed Memorandum For The Heads Of Executive Departments And Agencies," (November 2023)

Formulate an Institutional Data Management Plan

In addition to a data map, legislatures should create or update a Data Management Plan (DMP) to clarify access and protocols for data handling throughout its lifecycle. A DMP is a vital step towards ensuring data security, accuracy, and availability, aligning with the overarching goal of informed decision-making within the legislature.

Create Data Sandboxes

Data “sandboxes” allow internal technologists and trusted partners to explore potential applications in controlled environments where data management practices can be tested and refined. This involves creating isolated, controlled environments where institutional data can be safely accessed without risking the integrity of the primary data systems. Within these sandboxes, internal teams can test new ideas, analyze data, and develop applications without the fear of causing disruptions or breaches. Additionally, by granting access to these sandboxes to vetted external partners, the legislature can benefit from their expertise in app development and data analysis. This collaborative approach not only ensures data security but also promotes innovation by leveraging diverse skill sets. With clear guidelines and robust monitoring systems to manage access rights and track activities, these sandboxes can provide space for experimentation and innovation while ensuring compliance with legislative data policies and security protocols.

3. ISSUE AGILE AND TRANSPARENT AI GUIDELINES

As with the examples from the US House and Senate, legislative bodies should issue initial institution-wide guidance on the responsible use of AI, with the understanding that these guidelines will be updated iteratively as technology and legislative needs evolve.

Develop Guidelines for Intelligent Experimentation and Innovation

By setting a foundational framework for AI use without undue restrictions, individuals in various roles within the legislative body can confidently experiment with these new technologies.

As with the House of Representatives’ Chief Administrative Office (CAO) AI Working Group, participating offices are able to share information about their experiences with these new tools while following security and usage guidance as directed by the CAO.

Revise Official Communications Guidelines

As AI is increasingly integrated into legislative workflows, institutions will soon need to address transparency standards for AI-generated content in official communications. For example, the US House of Representatives should consider updating its Communication Standards Manual,⁸⁴ to address AI-generated content:

◆ Transparency

Propose a disclosure requirement for specific AI-generated content types in official communications, with an institution-approved insignia indicating AI involvement.

84 [“The House of Representatives Communications Standard Manual,”](#) House Communications Standards Commission (July 28, 2022)

◆ **Authenticity Verification**

Explore digital verification tools to confirm authenticity, countering deep fake threats.

◆ **Data Privacy**

Establish data protection standards, avoiding manipulative micro-targeting through AI.

◆ **Accountability**

Highlight clear accountability lines for AI-assisted content, with final responsibility on the elected legislator and staff.

◆ **Training**

Pair guideline updates with comprehensive training, ensuring ethical, transparent AI usage.

◆ **Feedback Mechanism**

Investigate feedback channels for constituents to voice concerns on AI-generated communications.

◆ **Updates**

Ensure periodic reviews of the manual to keep AI guidelines current and effective.

These proactive adaptations can preserve trust, transparency, and promote ethical, efficient AI utilization in Congressional communications.

4. PROMOTE RESPONSIBLE EXPERIMENTATION

Innovation in AI should be approached with an experimental mindset within legislative bodies. By promoting responsible experimentation, legislatures can explore the potential of AI to solve complex problems while ensuring that such explorations are conducted within a controlled environment to mitigate risks. This approach allows for the testing of AI applications in real-world scenarios, providing valuable data on their effectiveness and areas for improvement. It also prevents the establishment of overly restrictive policies that could stifle innovation and learning, aiding the legislative body in remaining at the forefront of technological advancements.

5. FOSTER INCLUSIVE DIALOGUE

The adoption of AI in legislative processes should be an inclusive endeavor, involving a wide range of stakeholders from different backgrounds and areas of expertise. Legislatures should establish forums and working groups that enable these diverse voices to be heard and considered in the development of AI policies and practices. Such inclusive conversations can lead to more robust, equitable, and well-rounded AI strategies that take into account the varied interests and concerns of the community, fostering stakeholder buy-in. These forums also serve as a platform for knowledge exchange, where lessons learned can be shared and best practices can be identified and adopted.

6. ADOPT A PHASED INTEGRATION STRATEGY

A phased approach to AI integration allows for gradual implementation, which is essential for managing the complexities associated with these technologies. The creation of a phased integration strategy demonstrates an institution's deliberate, responsible, and transparent adaptation to AI. Short-term phases may focus on small-scale pilots and foundational data management, while medium-term phases could expand AI use into more significant areas of legislative work as confidence and capability grow. Long-term phases might involve the integration of AI into core legislative processes, such as policy analysis and constituent engagement. By planning for these phases, legislatures can ensure that each step is manageable and that the institution is ready for the next level of AI integration.

7. INVEST IN UPSKILLING

As AI becomes integrated into legislative processes, the need for staff to understand and work alongside AI systems becomes critical. Legislatures should invest in comprehensive training programs that provide staff with the knowledge and skills needed to leverage AI effectively and be properly informed of institutional guidelines. This upskilling initiative should include technical skills as well as an understanding of the ethical implications and best practices in AI use. Change management programs can also help staff to adapt to new workflows and processes associated with AI tools, ensuring a smooth transition and minimizing resistance to change.

In the US House of Representatives, the CAO oversees the House Staff Academy and the CAO Coaches Program, both aimed at staff professional growth and enhancing institutional efficacy at the individual office level. By developing dedicated curricula that blend practical AI tool experimentation, these institution-supported offices can promote correct AI usage, disseminate best practices, guidelines, and restrictions to staff across all levels.

8. CUSTOMIZE AI SOLUTIONS

AI systems are most effective when they are tailored to the specific needs and workflows of the institution. Legislatures should seek out AI solutions that can be customized to their unique requirements, rather than adopting generic tools that may not align well with legislative processes. Customization ensures AI tools complement existing workflows, enhance productivity, and provide meaningful support to legislative staff and officials. It also allows for greater control over the data and outputs of AI systems, ensuring they meet the high standards required for legislative work while minimizing risks associated with staff using non-specialized tools for complex legislative functions.

9. ENSURE HUMAN OVERSIGHT

The integration of AI into legislative processes should not diminish the role of human judgment and oversight. Legislatures must establish transparent, well documented review processes and accountability structures that ensure AI systems are used ethically and in accordance with constitutional principles. Human oversight is crucial to monitor AI decision-making, catch potential errors, and provide a safeguard against biases or unethical outcomes. By maintaining a human-in-the-loop approach, legislatures can manage AI's potential to enhance human capabilities rather than replace them.

10. ALIGN AI WITH PUBLIC SERVICE GOALS

AI strategies should be directed towards making legislative processes more responsive, accessible, and transparent to the public. By focusing on the public benefit, legislatures can ensure that AI tools are used to enhance the democratic process, providing constituents with better access to information, more efficient services, and greater opportunities for engagement.

Establish Ethical Guidelines for AI Use

Some in the broader legislative technology ecosystem are beginning to explore standards for ethical AI adoption in parliaments.

The Hellenic OCR Team, in collaboration with a European Commission working group, released a draft version of “Guidelines on the introduction and use of artificial intelligence in the parliamentary workspace” at the April 2023 “LegisTech: the Americas” conference in Brasília. The draft guidelines state that AI should primarily serve as an instrument for upholding the rights articulated in the Universal Declaration of Human Rights.

Similarly, the Biden Administration OMB guidance to US agencies establishes a new framework with explicit provisions for “safety-impacting” and “rights-impacting” AI. The guidance further calls for AI to “align to national values and law:”

Agencies should ensure that procured AI exhibits due respect for our Nation’s values, is consistent with the Constitution, and complies with all other applicable laws, regulations, and policies, including those addressing privacy, confidentiality, copyright, human and civil rights, and civil liberties.

These are just a few examples of the evolving conversation on principles and approaches for the safe, responsible adoption of AI in democratic institutions.

11. ENGAGE IN GLOBAL COLLABORATION

AI is a global phenomenon, and legislatures can benefit greatly from international collaboration and learning. By engaging with parliaments around the world that are pioneering the use of AI in legislative processes, legislatures can learn valuable lessons and avoid common pitfalls. Global collaboration provides a platform for sharing experiences, strategies, and policies, fostering a collective advancement in the responsible use of AI in governance. This collaborative approach can accelerate learning and innovation, helping legislatures to adopt AI in ways that are informed by a diverse range of experiences and insights. International resources include:

◆ **Bússola Tech LegisTech Library**

The LegisTech Library by Bússola Tech is a digital platform dedicated to supporting the global legislative community through the sharing of knowledge and experiences. It aims to foster collaboration and facilitate the modernization and digital transformation of legislative institutions. This library is more than just a collection of articles; it's a carefully selected compilation of studies that highlights the journey and advancements in legislative modernization. These stories serve to inspire and guide lawmakers and institutions towards effective modernization. Bússola Tech's role is to provide a neutral space for these important conversations, supporting visionary leaders and promoting the evolution of legislative bodies for the benefit of their members, staff, and the citizens they serve.

◆ **Inter-Parliamentary Union Innovation Tracker**

The Innovation Tracker is a dynamic blog that spotlights the latest advancements in parliamentary processes, offering Members of Parliament and their staff a wellspring of innovative ideas to tackle the challenges of governance. Covering a wide array of topics from digital tools to broader parliamentary improvements, this platform is a go-to source for fostering efficiency and effectiveness in parliament.

◆ **Hellenic OCR Team**

Established in late 2017, the Hellenic OCR team is a unique crowdsourcing initiative focused on the processing and analysis of parliamentary textual data. This initiative enables the conversion of parliamentary documents into formats like XML, which are suitable for computational linguistics tools and methods. The work of the Hellenic OCR Team facilitates interdisciplinary research by making parliamentary data more accessible for studies in fields such as history, political science, and linguistics.

◆ **International Legislative Modernization Working Group**

A collaborative initiative focused on sharing best practices and experiences in legislative modernization from around the world. As part of POPVOX Foundation's Comparative Legislative Strengthening Project, this group aims to assist parliaments in becoming more effective, efficient, and transparent. It serves as a resource for legislators looking to enhance their work through modern techniques and technologies.

Sample Use Cases

AI PERSONAL ASSISTANT FOR ALL CONSTITUENTS

Description	Utilizing LLM technology, an AI Personal Assistant chatbot can provide constituents a seamless channel to access crucial information about their governmental representatives, voting records, upcoming elections, and more. This can help individuals navigating the complexities of the layered governmental system prevalent in the US and many other countries.
Complexity	Low to Moderate
Benefits	<ul style="list-style-type: none"> ◆ Increase efficiency and timely access to government information ◆ Address language and literacy barriers ◆ Promote inclusivity in political engagement across diverse demographics
Risks/Considerations	<ul style="list-style-type: none"> ◆ Data accuracy and timeliness ◆ Privacy concerns ◆ Continuous maintenance and updates
Short-term Implementation	Deploy a basic version of the AI assistant pulling information from reliable and official government databases and websites to address common queries.
Long-term Optimization	Continuous improvement of the AI model to include real-time data updates, expanding scope to cover state and local government information, and enhancing language processing capabilities to cater to a broader demographic.

IMMEDIATE, IMPACTFUL ACCESS TO OFFICIAL TRANSCRIPTS

Description	Utilizing AI for rapid transcription of Congressional activities, making them accessible to the public in a variety of languages in a more timely manner.
Complexity	Low
Benefits	<ul style="list-style-type: none"> ◆ Accelerated transcript availability ◆ Increased transparency ◆ Broader accessibility across language barriers
Risks/Considerations	<ul style="list-style-type: none"> ◆ Accuracy of transcription ◆ Data privacy ◆ Maintenance of contextual link relevance ◆ Real-time translation challenges
Short-term Implementation	Implementing automatic speech recognition for real-time transcription, with human oversight for accuracy verification.
Long-term Optimization	Incorporating AI for contextual information addition, real-time translation into multiple languages, and generating analytical summaries for easier public comprehension.

WEBSITE LLM INTEGRATION

Description	Integration of a custom-trained LLM as a chatbot on legislators' official websites to provide 24/7 assistance, streamlining engagement and inquiries from constituents regarding recent actions, policy positions, and other services.
Complexity	Low to High
Benefits	<ul style="list-style-type: none"> ◆ Enhanced constituent experience ◆ Reduced administrative burden ◆ Increased efficiency in handling inquiries ◆ Valuable insight into constituent concerns
Risks/Considerations	<ul style="list-style-type: none"> ◆ Data privacy ◆ Accuracy of information provided ◆ Managing inappropriate content ◆ Ensuring inclusivity across languages and dialects
Short-term Implementation	Implementing a basic chatbot for FAQs and redirecting to human staff for complex inquiries.
Long-term Optimization	Training a sophisticated LLM with extensive legislative data, local dialect recognition, multi-language support, and direct integration with scheduling and resource allocation systems.

CASEWORK INNOVATION

Description	Streamlining casework processes through technological innovations to enhance efficiency, better manage case data, and improve service delivery to constituents.
Complexity	High
Benefits	<ul style="list-style-type: none"> ◆ Increased efficiency ◆ Improved data management ◆ Enhanced constituent service ◆ Better identification of systemic issues
Risks/Considerations	<ul style="list-style-type: none"> ◆ Data privacy ◆ Accuracy of case handling ◆ Ensuring a smooth transition during technological upgrades
Short-term Implementation	Implementing standardized tagging systems and enhancing current CMS platforms for better case tracking and management.
Long-term Optimization	Establishing a central liaison office for caseworkers, developing comprehensive on-demand training modules, and exploring AI applications to automate routine tasks while ensuring accurate and effective constituent service.

ENHANCING INFORMATION MANAGEMENT FOR LEGISLATIVE STAFF

Description	Utilizing AI for rapid summarization, analysis, and contextualization of vast amounts of legislative material to aid Congressional staff in policy understanding and engagement.
Complexity	Medium
Benefits	<ul style="list-style-type: none"> ◆ Increased capacity ◆ Time-saving ◆ Better informed legislative staff ◆ Efficient engagement with complex policy issues
Risks/Considerations	<ul style="list-style-type: none"> ◆ AI “hallucination” ◆ Bias ◆ Ensuring accuracy and neutrality of generated summaries or analyses
Short-term Implementation	Deploying LLM tools for summarizing and analyzing existing reports, legislation, and briefing documents while ensuring verification and accuracy of generated content.
Long-term Optimization	Continuous training and improvement of AI tools to ensure balanced, nonpartisan analysis, incorporating feedback from legislative staff to tailor AI tools to their evolving needs.

ENHANCING LEGISLATIVE ITEM TRACKING, HISTORICAL ANALYSIS, AND ALLY IDENTIFICATION

Description	Utilizing AI to manage, analyze, and correlate legislative items, uncover legislative histories, and identify potential policy allies for improved collaboration and awareness among legislators and staff.
Complexity	High
Benefits	<ul style="list-style-type: none"> ◆ Efficient legislative item tracking ◆ Enhanced understanding of legislative histories ◆ Fostering relationship building ◆ Bipartisan collaboration ◆ Informed decision-making
Risks/Considerations	<ul style="list-style-type: none"> ◆ Data accuracy ◆ Privacy concerns ◆ Ensuring nonpartisan, unbiased analysis
Short-term Implementation	Deploy AI tools for basic tracking, summarizing, and correlating legislative items while ensuring data accuracy and privacy.
Long-term Optimization	Continuously refine AI algorithms, expand databases, and implement feedback loops for improved analysis, historical tracking, and ally identification, while maintaining strict data privacy and neutrality standards.

ENHANCED CONSTITUENT ENGAGEMENT THROUGH AI

Description	Leveraging GenAI to draft rapid, high-quality, personalized responses to constituents, improving engagement quality and efficiency.
Complexity	Low
Benefits	<ul style="list-style-type: none"> ◆ Timely, informed, consistent responses ◆ Better engagement ◆ Maximized staff resources ◆ Improved issue understanding
Risks/Considerations	<ul style="list-style-type: none"> ◆ Data privacy, accuracy ◆ Potential loss of personal touch ◆ Ensuring balanced, unbiased information
Short-term Implementation	Authorize staff to use commercially available LLMs to assist in drafting content with proper safety controls implemented, maintaining human oversight of final products.
Long-term Optimization	Continuously refine AI, expand databases, automate consistency checks, and integrate seamless updates on legislative activities for comprehensive, accurate constituent engagement. Utilize AI to assist in sentiment analysis.

AI-ENHANCED MEETING MANAGEMENT FOR CONSTITUENT & SPECIAL INTEREST ENGAGEMENTS

Description	Utilizing AI for real-time transcription, key points highlighting, and post-meeting summary generation in meetings with constituents and special interest groups.
Complexity	Medium
Benefits	<ul style="list-style-type: none"> ◆ Streamlined information capture ◆ Actionable summaries ◆ Better follow-up ◆ Integrated CRM updating ◆ Improved project management
Risks/Considerations	<ul style="list-style-type: none"> ◆ Accurate transcription ◆ Data privacy ◆ Ensuring accurate capture of nuanced discussions ◆ Tech integration with current systems
Short-term Implementation	Pilot with AI transcription and summary generation in select meetings, human review of AI-generated summaries.
Long-term Optimization	Full integration with CRM and project management systems, expanding AI use for actionable insights from accumulated meeting data, and continuous improvement of transcription and summary accuracy.

AI-ASSISTED INSTITUTIONAL KNOWLEDGE RETENTION FOR DISTRICT REPRESENTATION

Description	Bridging the knowledge gap between succeeding representatives by aggregating, analyzing, and providing insights from historical data of previous office holders to improve understanding and representation of district needs and priorities.
Complexity	High
Benefits	<ul style="list-style-type: none"> ◆ Accelerated onboarding of new representatives ◆ Improved continuity in representation ◆ Enhanced engagement with long-term district issues ◆ Fostering informed policy decisions
Risks/Considerations	<ul style="list-style-type: none"> ◆ Data privacy ◆ Accuracy of historical data interpretation ◆ Ensuring non-bias in AI analysis
Short-term Implementation	Develop a pilot AI system trained on publicly available historical data of a few selected offices, and evaluate its effectiveness in aiding newly elected representatives.
Long-term Optimization	Expand to a fully integrated AI system accessible to all new representatives, continuously updated with public data, and possibly integrate feedback mechanisms for continuous learning and improvement.

AI-OPTIMIZED SCHEDULING ASSISTANCE

Description	Utilizing AI to analyze membership rosters, identify potential scheduling conflicts, and optimize scheduling of legislative activities to enhance efficiency and Member engagement.
Complexity	Medium to High
Benefits	<ul style="list-style-type: none"> ◆ Reduced scheduling conflicts ◆ Improved adherence to official session calendars ◆ Enhanced legislative effectiveness ◆ Real-time schedule adjustments to maximize Member engagement
Risks/Considerations	<ul style="list-style-type: none"> ◆ Ensuring accuracy in AI analysis ◆ Adherence to House rules ◆ Ensuring the system's adaptability to real-time changes
Short-term Implementation	Develop a pilot AI system to optimize scheduling for a subset of committees, evaluate its effectiveness, and refine the system based on feedback.
Long-term Optimization	Implement a fully-integrated AI scheduling assistant across all committees and subcommittees, continuously refine the block schedule, and possibly extend the system to coordinate with other legislative activities.

ENHANCING COMMITTEE CONSIDERATION OF REFERRED LEGISLATION

Description	Utilization of AI tools across committees to track, analyze, and provide insights on referred bills, aiding in better legislative scrutiny, and efficient committee proceedings.
Complexity	High
Benefits	<ul style="list-style-type: none"> ◆ Improved legislative analysis ◆ Enhanced institutional knowledge ◆ Efficient committee proceedings ◆ Timely generation of necessary documentation and communications
Risks/Considerations	<ul style="list-style-type: none"> ◆ Accuracy of AI analysis ◆ Ensuring unbiased insights ◆ Managing staff adaptation to AI tools
Short-term Implementation	Pilot AI analysis tools in a few committees to evaluate effectiveness and refine based on feedback.
Long-term Optimization	Implement AI analysis tools across all committees, continuously update the AI system with new legislative data, and possibly extend functionality to assist in other areas of legislative process.

ENHANCING COMMITTEE HEARING PREPARATION AND MEMBER WITNESS ENGAGEMENT

Description	AI aids in hearing preparation by analyzing past transcripts and suggesting witnesses and questions, provides question redundancy checks during hearings, and post-hearing, generates official transcripts and summaries.
Complexity	Low to Medium
Benefits	<ul style="list-style-type: none"> ◆ Saves manual work hours ◆ Assists in more informed oversight ◆ Improves likelihood of quality witness engagement ◆ Enables focused staff efforts on high-value tasks
Risks/Considerations	<ul style="list-style-type: none"> ◆ Accuracy of effectiveness in identifying high-value questions and witnesses ◆ The need for staff adaptation to AI tools
Short-term Implementation	Pilot in a few committees to assess effectiveness in hearing preparation, management, and post-hearing analysis. Further assess ability of AI to assist in drafting lines questioning that both improve the public's understanding of the issue at hand and achieve oversight goals.
Long-term Optimization	Implement across all committees, increase data standardization and accessibility to improve tool's usability of previous hearing data.

IMPLEMENTATION ANALYSIS PRIOR TO ENACTMENT

Description	AI reviews legislation for clarity and consistency in language, offering alterations for better implementability, and flags conflicting guidance with prior requirements on affected agencies.
Complexity	High
Benefits	<ul style="list-style-type: none"> ◆ Ensures clear, consistent regulatory language ◆ Identifies potential implementation conflicts ◆ Supports more effective legislative drafting
Risks/Considerations	<ul style="list-style-type: none"> ◆ Accuracy in language analysis ◆ Ensuring unbiased suggestions ◆ Maintaining up-to-date reference data
Short-term Implementation	Pilot AI analysis tool on selected legislative proposals to evaluate effectiveness and refine based on feedback.
Long-term Optimization	Implement across legislative drafting processes, continuously update with new legislative and regulatory data, extend functionality for broader language analysis.

DEMYSTIFYING INSTITUTIONAL SUPPORT

Description	An AI chatbot trained on institutional data to provide instant guidance on processes, support functions, and resource locations, enhancing efficiency and easing onboarding.
Complexity	Low to Medium
Benefits	<ul style="list-style-type: none"> ◆ Improved staff onboarding and employee experience ◆ Enhanced resource utilization ◆ Increased productivity ◆ Institutional resilience
Risks/Considerations	<ul style="list-style-type: none"> ◆ Data accuracy ◆ Ensuring up-to-date information ◆ Staff adaptation to AI tools
Short-term Implementation	Develop and pilot AI chatbot trained on common inquiries directed to a specific department or to assist with a particular function, and gather feedback.
Long-term Optimization	Implement AI chatbot across institutional support entities, continuously update with new institutional data, and possibly extend functionality for broader support.

MINIMIZING TIME AND ERRORS DURING LEGISLATIVE PROCESSING

Description	Employ AI tools to streamline legislative document processing in the US House of Representatives, enhancing accuracy, efficiency, and public transparency.
Complexity	High
Benefits	<ul style="list-style-type: none"> ◆ Reduced processing time ◆ Improved accuracy ◆ Enhanced transparency ◆ Modernized legislative processing
Risks/Considerations	<ul style="list-style-type: none"> ◆ Accuracy of AI tools ◆ Adaptation of staff ◆ Ensuring nonpartisan, objective information dissemination
Short-term Implementation	Pilot AI tools in specific stages of legislative processing, gather feedback, and refine.
Long-term Optimization	Implement AI tools throughout the legislative processing pipeline, continuously update AI systems, and extend functionalities for broader legislative operations.

AUTOMATIC FINANCIAL DISCLOSURE REQUIREMENT ADHERENCE

Description	Utilizing AI to automate and streamline the financial disclosure process for Members of Congress and senior Congressional staff, ensuring accuracy, transparency, and compliance with ethical standards.
Complexity	High
Benefits	<ul style="list-style-type: none"> ◆ Increased transparency ◆ Improved accuracy ◆ Timely submissions ◆ Reduced administrative burden ◆ Enhanced institutional accountability
Risks/Considerations	<ul style="list-style-type: none"> ◆ Accuracy of AI logs ◆ Privacy concerns ◆ System integration
Short-term Implementation	Pilot AI disclosure assistant with a small group of filers, refine based on feedback.
Long-term Optimization	Implement AI assistant across Congress, continuously update to reflect changes in disclosure requirements, and possibly extend functionality to other compliance areas.

RETENTION OF INSTITUTIONAL KNOWLEDGE

Description	Utilizing LLMs as repositories to capture, preserve, and utilize the institutional knowledge of retiring employees, thereby minimizing the impact of staff turnover on technical and procedural expertise within legislative support offices.
Complexity	High
Benefits	<ul style="list-style-type: none"> ◆ Preservation and accessibility of invaluable institutional knowledge ◆ Enhanced support to legislative operations ◆ Creation of a virtual “mentor” for staff
Risks/Considerations	<ul style="list-style-type: none"> ◆ Data privacy ◆ Accuracy of captured knowledge ◆ Ongoing maintenance of the AI system
Short-term Implementation	Initiate comprehensive interviews with retiring employees, and begin collection and organization of knowledge assets for AI training.
Long-term Optimization	Continual training and auditing of the AI system, ensuring it remains updated and accurate, and possibly expanding its utilization across other institutional offices.

Conclusion

The advent of artificial intelligence presents both opportunities and challenges for legislative bodies worldwide. AI has the potential to significantly enhance efficiency, transparency, and engagement in lawmaking processes. However, realizing these benefits requires thoughtful integration amidst ethical, legal, and technical complexities.

This paper aimed to provide a comprehensive perspective on AI adoption in parliaments over the past decade, examining innovations in machine learning and natural language processing and previewing current and potential use cases for the deployment of GenAI. The analysis highlighted legislative operational benefits like accelerated access to transcripts, real-time translation services, advanced document resource management, and elevated constituent interactions. It also covered limitations around bias, factual accuracy, and model generalizability.

Managing public perceptions and formulating policies around emerging technologies is essential. Our recommendations emphasize a phased approach beginning with controlled experimentation and information-sharing. We advise legislatures to invest in AI literacy, establish ethical guardrails, and learn from global best practices. With prudent implementation, AI can equip representative bodies to meet rising public expectations in the digital era while preserving human accountability in representative governance.

Legislatures now stand at a pivotal juncture. The choices they make today regarding AI governance will profoundly influence their capability to represent citizens effectively in the coming decades. As Samuel Hammond, Senior Economist at the Foundation for American Innovation, recently stated when testifying before the US House Oversight Subcommittee on Cybersecurity, Information Technology, and Government Innovation:

The question is whether governments will keep up and adapt, or be stuck riding horses while society whizzes by in a race car. The risks from adopting AI in government must therefore be balanced against the greater risks associated with not adapting AI proactively enough.

We hope this paper supports legislative bodies in navigating this transition — harnessing AI to augment their capabilities while upholding public trust through transparency and human oversight. The principles and insights within can assist parliaments worldwide in developing nuanced strategies for AI adoption that strengthen democratic institutions.

About

POPVOX FOUNDATION

POPVOX Foundation is a 501(c)3 nonprofit organization with a mission “to inform and empower people and make government work better for everyone.” This includes reimagining the concept of civic infrastructure, and providing new ways for government to share information and engage the public, with an emphasis on diverse participation and rebuilding public trust.

POPVOX Foundation works with governments to address the challenges presented by the constantly evolving landscape of technology and society, known as “pacing problems.” Through collaborations with researchers, government officials, and other stakeholders, the foundation aims to advance innovative solutions that facilitate effective oversight, transparency, accountability, and accessibility, ensuring efficient and effective governance.

To support this work, please visit: popvox.org/donate

THE AUTHORS

Marci Harris, Cofounder and Executive Director

As founder and CEO of POPVOX.com and cofounder and executive director of the nonprofit POPVOX Foundation, Marci Harris is passionate about using technology for social good. She conceived POPVOX while working on the Affordable Care Act as a Congressional staffer from 2008-2010. Marci has rich experience unifying communities, including leading redevelopment in Jackson, TN after a 2003 tornado. She was a fellow at Harvard’s Kennedy School and the University of California. In 2018, she advised Puerto Rico’s government on recovery strategies. Marci makes regular contributions to Congressional modernization, testifying before the House Select Committee and co-writing tech recommendations for the American Political Science Association. During the pandemic, she guided Congress’ adoption of remote technologies and workflows. Marci co-founded CapitolStrong to support staff after January 6 and the First Branch Intern Project to diversify talent pipelines. Marci is a lecturer in political science at San Jose State University and adjunct professor at the University of San Francisco. She holds a B.A. from Franklin University Lugano, Switzerland, a J.D. from the University of Memphis, and an LL.M. from American University.

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Aubrey’s driving passion is to raise awareness of all the good that is happening in the US Congress every day. As former Deputy Staff Director for the Committee on House Administration (CHA) for the 118th House of Representatives, she played a lead role in making the institution work more effectively. In this role, Aubrey also served as the Staff Director of the Joint Committee on Printing and oversaw the inaugural session of CHA’s bipartisan Subcommittee on Modernization. Prior, Aubrey served as Director of Oversight and Modernization for CHA during the 117th Congress following a year-long appointment as a Congressional Fellow.

Acknowledgements

We are grateful to the countless individuals in the US Congress and around the world who are working to help democratic governments keep pace with a changing society and sharing their work, lessons, hopes, and innovations. These include:

Jennifer Anastasoff

Samuel Hammond

John Nay

Taka Ariga

Derek Harley

Beth Noveck

Yuri Beckelman

Ari Hershowiz

Heather Painter

Ananda Bhatia

Galen Hines-Pierce

Jennifer Pahlka

Craig Butler

Max Katz

Ayushi Roy

Juan De Dios Cincunegui

Lorelei Kelly

Autumn Richards

Franklin DeVrieze

Luís Kimaid

Lars Erik Schönander

Steve Dwyer

Maya Kornberg

Reynold Schweikert

Fotis Fitsilis

Lauren Lombardo

Jessica Smith

Kirsten Gullickson

Alberto Mencarelli

Jörn von Lucke

Zach Graves

Travis Moore

Ken Ward

Big thanks to our POPVOX Foundation colleagues for their advice and input.

Juan García

Anne Meeker

Gabriela Schneider

Ben Harris

Beatriz Rey

Daniel Schuman

Victoria Houed

Nicole Tisdale

Taylor J. Swift

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