How Can AI Improve The Regulatory Process?

By Dan Chenok and Virginia Huth

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Significant attention has been paid of late on how best to approach potential regulation of artificial intelligence (AI). This issue raises key questions around supporting benefits of AI while minimizing risks; such questions merit sustained focus.

But what about the converse of this proposition – how can AI support the process of developing, commenting on, reviewing, and publishing regulations, regardless of the issue being regulated? In other words, how can AI help governments become more efficient in issuing and analyzing regulations?

A major challenge in the rulemaking process involves managing mass volumes of comments, which agencies must review for substance to inform the basis of the rulemaking. For example, the National Environmental Protection Act rulemaking of 2020 received over 1.1 million comments; a nearly insurmountable challenge for humans to review, without technology assistance. AI can improve agency accountability in addressing all substantive comments.

*Consider the purposes of the regulatory process under the Administrative Procedure Act (APA), which drive* ***public engagement, transparency, and agency accountability****:*

* *Requires that the public be given opportunity to provide comments on rulemakings and that the agency summarize those comments when it publishes the final rule.*
* *Requires that agencies give any interested person (including anonymous commenters) the right to make a comment and that “person” includes both individuals and organizations.*
* *Requires that agencies consider all reliable and “substantive” comments. Given that bot-based comments may provide substantive arguments (logical arguments based on facts), there is a legal argument to be made that such comments*
* *be considered in the rulemaking process and included in the regulatory record.*

Another major challenge is the complexity of some rulemakings, some over 1,000 pages, relying on scientific studies and data to inform the analysis, and taking years to complete. Yet rulemakings still appear typically as a PDF, with no ability to search on the document for key text. Text analytics that tag data for meaning would enable an important step forward in establishing machine-readable text. Machine readable text would not only allow rulemakers to identify key parts of a new rulemaking needing coordination, but can also help with both retrospective review of prior rules and identifying opportunities to reduce duplication in multiple rulemakings. Machine readable text can also help the public identify parts of a rule of particular interest to them, helping them to provide meaningful comments. In fact, any member of the public could easily identify all rulemakings of interest. Many opportunities exist for AI and related technologies to improve public engagement.

Some argue that the risks of AI are too high for the regulatory process, and that the current process is sufficient. Yet the current process can be strengthened, especially in how AI can support key regulatory tenets. The key lies in how AI can further the foundation principles of **transparency, public engagement, and accountability** within the regulatory process, principles that have governed agency activity since the Administrative Procedure Act (APA).

* **Transparency** is the cornerstone of the rulemaking process. And while proposed rules are posted in the Federal Register, usually for 60 days, to allow ample time for the public to comment, and the final rulemaking is again published in the Federal Register and then incorporated into the Code of Federal Regulations -- all publicly available – the average citizen does not check the Federal Register or the CFR frequently.
* **Public engagement** is a vital part of the regulatory process. Agencies may also conduct public meetings to hear directly from the public, or conduct private meetings with members of the public that must be a matter of public record. But how many citizens can travel to Washington DC for meetings? Also, agencies are not required to verify the source of comments, and many agencies accept comments anonymously; accepting anonymous comments encourages public participation, so that no commenter need be concerned about the possibility of retaliation or being drawn into a negative public dialogue. While many have concerns about more comments being written by AI, is there anything inherently wrong with getting help that facilitates engagement and helps someone write a better comment?
* **Accountability** by agencies for relying on scientific data and other supporting evidence wherever appropriate is critical to the regulatory process. Without sound evidence, rulemakings may be challenged and have been overturned in the Federal courts and by Congress. AI can help agencies make informed decisions across multiple parts of the process:
	+ AI can help agencies **sift through immense volumes of data and evidence** to identify areas where rule writers can focus research and validate conclusions through multiple sources of evidence.
	+ AI can help **i**n **public comment review**, assessing large volumes of comments to array common themes quickly, allowing agencies to array important issues needing expert judgement, and understanding what comments may be generated by “fake” sources to mitigate potential impacts from disinformation
	+ AI can support **retrospective review** of existing rules, enabling agencies to identify rules needing updates based on factors that include evolving conditions that render current regulations obsolete, streamlining based on overbroad procedural requirements, or consolidation based on redundancies with similar rules.

And if a rulemaking is determined, through retrospective review, to impose too harsh requirements on a party, or whose perceived benefits did not materialize, the rule can be amended, just as it is today.

Perspectives on each of these applications of AI to regulatory development follow.

**Regulatory Development**

Agency analysis and decision making for a rulemaking generally begins with a determination of the need for a regulation, followed by conducting research and gathering information to support the analysis (known as “establishing the record), and then drafting the text of the proposed rule. These activities supporting usually occur well before the rule appears in Regulations.gov – sometimes years before. Regulations affect the behavior of businesses, state and local governments, non-profits, and individuals.

The final step is development of the final rule, which may be updated based on public comments. Regulatory requirements can potentially confer high benefits and impose high costs, and the decisions made on how to frame such requirements can have lasting impact and be difficult to unwind.

Historically, agency staff have engaged in regulatory analysis in a linear fashion, sifting through many documents of varying degrees of complexity to develop alternatives for review. Much time is spent on producing a record of such analysis, which becomes even more complex and lengthy for “economically significant” rules that under EO 12866 require a formal regulatory impact analysis.

AI has enabled public and private sector organizations to collect vast amounts of information and array common themes in an organized fashion, in orders of magnitude faster than conventional analysis. This same benefit can allow regulatory teams in agencies and OMB to focus on complex issues needing careful human judgement more quickly – identifying such issues in days and weeks rather than months or years. Time is a precious commodity for regulatory action to remain relevant given evolving context of issues being regulated, and increased speed of decisionmaking can ensure that regulations are “fit for purpose.”

In the same way that cost/benefit analysis and risk estimation are critical tools in the rulemaking process, agencies can consider the costs, benefits, and risks of using AI to support the rulemaking process. There is no “perfect” conclusion for a given rulemaking, as rulemakers always balance costs and benefits, impacts to particular communities, and Administration priorities, in order to reach a decision. Moreover, rulemakings do not involve sensitive data -- all the information is already public, making regulation a low-risk function.  And if a rulemaking is determined, for example through retrospective review (see below), to impose too harsh requirements on a party, or whose perceived benefits did not materialize, the rule can be amended.

In contrast, higher-risk scenarios include health care, which involves highly sensitive information, such as patient data, and a wrong conclusion as to a patient diagnosis could put health at risk. Military applications provide another example of a higher risk functions, holding sensitive data where the impact of a wrong conclusion can be very high. A prior [report issued through NAPA](https://napawash.org/standing-panel-blog/can-ai-be-used-to-increase-fairness-and-equity-in-government-decisions) contends that that AI can reduce human mistakes and correct bias in law enforcement decisionmaking, and those lessons could apply to other regulated sectors.

The IBM Center has reported on agency’s use of [AI to make procurement rules more efficient](https://www.businessofgovernment.org/blog/future-has-begun-using-artificial-intelligence-transform-government), and University of Pennsylvania scholars Cary Coglianse and Lavi Ben-Dor authored a longer [piece for the Brooklyn Law Review](https://brooklynworks.brooklaw.edu/blr/vol86/iss3/1/) that sheds light on this in the context of both rulemaking and broader considerations of administrative law. Other useful resources on this subject have been [aggregated](https://www.acus.gov/ai) by the Administrative Conference of the United States.

**Public Comment Review**

A key issue that AI can both introduce and protect against involves “fake comments” or “fake commenters.”The process for rulemaking is not democratic. That is, decisions are not up for a vote, based on numbers of public comments received for or against the rulemaking, but rather left to the rulemakers’ discretion after thoughtful consideration of all relevant issues identified in the research -- including review of public comments. While quantity of comments may affect decision-makers on certain issues, the APA requires that data, evidence, and a sound rationale drive behind the final decision. Yet perceptions matter; the belief that fraudulently submitted comments could sway the decision-making process is a dangerous threat to the integrity of the rulemaking process.

Agencies also decide which comments to make available to the public, usually selecting the most salient ones when space is limited. Deduplication technology currently assists agencies in managing high volumes of comments by sorting out the duplicates and identifying comments that are very similar. New AI tools can help agencies more effectively summarize mass volumes of public comments. A human should always be involved to review the analysis, and current technologies exist today to enable tracing of summary information back to the source document (the public comment) for validation. Greater public awareness of these capabilities can improve public trust; in contrast, lack of technology support in large data environments can lead to incomplete analysis.

Moreover, today’s technology makes it vastly easier for advocacy groups to organize public comment, which has both pros and cons**.** Through social media,advocacy groups can promote an issue and enable an individual to “make a comment” in just a few clicks. Such comments are often submitted to the General Services Administration’s eRulemaking system at a rate of 30,000 per hour, and around 100,000 per day. This affords greater opportunity for public access and engagement. While there may be greater opportunity for bad actors to manipulate the public on issues, this risk should be balanced against the benefits from improving access to the rulemaking that can help the public find a particular section of the rulemaking to read for themselves. Plain language summaries, provided by technology, can also improve public engagement.

GSA has addressed the risk related to so-called “fake” comments by implementing ReCAPTCHA technology, which blocks mass comments pushed through by computers. Because legitimate advocacy organizations rely on mass comments, as authorized by their members, they can access eRulemaking by applying for an Application Programming Interface (API) key. GSA strictly controls the API key by GSA, and applicants are vetted to ensure that they do not abuse the system. If abuse is detected or if use appears suspicious, GSA reserves the right to suspend the API key.

It is worth noting that the scope of the “fake” commenter issue has generally been limited to extremely high profile and controversial regulations, such as the Net Neutrality rulemaking at the FCC in 2017, which does not rely on the eRulemaking system. For example, fewer than 6% of rulemakings in the eRulemaking system for the FY18 period received more than 100 comments.



This is not meant to diminish the importance of the challenge of “fake” commenters, but rather to suggest that any solution should consider probability as well as impact when estimating overall risk. In other words, what is the best way to attack a problem that affects fewer than one percent of all rulemakings? What is the right balance to mitigate risk without excessively slowing down most actions? Can solutions focus on highrisk areas?

Addressing a more recent evolution of generative AI, the impact of generative AI on the public comment process, and how it might impact accuracy and attribution for comments on rules, is the subject of a recent perspective by Mark Febrizio; through the George Washington University Regulatory Studies Center, Febrizio recently [published an article](https://regulatorystudies.columbian.gwu.edu/will-chatgpt-break-notice-and-comment-regulations) on this topic, finding that “given the safeguards and practices related to commenting on federal agency rules, ChatGPT seems unlikely to introduce novel problems to the notice-and-comment process.” More recently, Febrizio and GW RSC colleague Bridget Dooling wrote an excellent overview of specific use cases on generative AI and the public comment process in this [Brookings article](https://www.brookings.edu/articles/robotic-rulemaking/).

**Retrospective Review**

A recent article in the University of Pennsylvania Law School Regulatory Review, “[Artifical Intelligence for Retrospective Regulatory Review](https://www.theregreview.org/2023/09/12/sharkey-mallett-artificial-intelligence-for-retrospective-regulatory-review/),” by Catherine Sharkey and Cade Mallet with the New York University School of Law, provides an excellent discussion of this issue. Key considerations from the authors are excerpted below.

Statutes, executive orders, and good governance considerations impose a duty on many federal agencies to analyze past rules periodically and to remove duplicative, inconsistent, anachronistic, or otherwise ineffective regulations from their books. To comply, agencies [perform](https://www.whitehouse.gov/omb/information-regulatory-affairs/) “retrospective reviews” by re-assessing the costs and benefits of their regulations at some time after the regulations are issued. This longstanding practice of retrospective review has been [endorsed](https://www.acus.gov/report/report-recommendation-95-3-agency-review-existing-regulations) in various Administrative Conference of the United States (ACUS) recommendations since 1995.

More recently, agencies have begun to [consider](https://www.govinfo.gov/content/pkg/FR-2020-11-16/pdf/2020-21774.pdf) how technology might maximize the scope of the review they can perform, notwithstanding limited resources. For example, OMB suggested in its November 2020 [guidance](https://www.whitehouse.gov/wp-content/uploads/2020/11/M-21-06.pdf) that artificial intelligence (AI) might be an effective tool “to promote retrospective analysis of rules that may be outmoded, ineffective, insufficient, or excessively burdensome” and to “modify, streamline, expand, or repeal them in accordance with what has been learned.”

Observing this trend toward algorithmic review, Catherine Sharkey proposed a study to ACUS that produced a [report](https://www.acus.gov/sites/default/files/documents/Algorithmic%20Retrospective%20Review%20Final%20Report%202023.05.03.pdf) assessing how certain agencies now use, and how others plan to use, AI technologies in retrospective review.

Four representative case studies [proved](https://www.acus.gov/sites/default/files/documents/Algorithmic%20Retrospective%20Review%20Final%20Report%202023.05.03.pdf#page=6) instructive: three from cabinet-level executive branch departments—the U.S. Department of Health and Human Services (HHS), the U.S. Department of Transportation, and the U.S. Department of Defense—and one based on a project by the General Services Administration (GSA) in collaboration with the Centers for Medicare and Medicaid Services (CMS).

In addition to performing these case studies, Professor Sharkey [interviewed](https://www.acus.gov/sites/default/files/documents/Algorithmic%20Retrospective%20Review%20Final%20Report%202023.05.03.pdf#page=35) officials from eight other agencies about their interest in using algorithmic tools for retrospective review. These interviews [revealed](https://www.acus.gov/sites/default/files/documents/Algorithmic%20Retrospective%20Review%20Final%20Report%202023.05.03.pdf#page=42) that, for the most part, agencies’ retrospective review methods are nowhere near automated. Agency representatives [theorized](https://www.acus.gov/sites/default/files/documents/Algorithmic%20Retrospective%20Review%20Final%20Report%202023.05.03.pdf#page=42) that concerns with the government’s capacity and resources to develop AI tools for retrospective review had stymied adoption, and none [thought](https://www.acus.gov/sites/default/files/documents/Algorithmic%20Retrospective%20Review%20Final%20Report%202023.05.03.pdf#page=42) it would be realistic to develop such tools in-house.

Nonetheless, officials at all but one agency [were](https://www.acus.gov/sites/default/files/documents/Algorithmic%20Retrospective%20Review%20Final%20Report%202023.05.03.pdf#page=42) open to the use of AI-enabled tools in the retrospective review process, and several interviewees [pointed](https://www.acus.gov/sites/default/files/documents/Algorithmic%20Retrospective%20Review%20Final%20Report%202023.05.03.pdf#page=37) out particular agency tasks that might lend themselves to automation, such as finding broken citation links or flagging long-standing, unedited regulations as ripe for review.

To obtain another perspective, Professor Sharkey [surveyed](https://www.acus.gov/sites/default/files/documents/Algorithmic%20Retrospective%20Review%20Final%20Report%202023.05.03.pdf#page=43) regulatory beneficiaries and regulated entities using a sample list provided by ACUS. Of the six regulatory beneficiaries and one regulated entity that agreed to be interviewed, most [said](https://www.acus.gov/sites/default/files/documents/Algorithmic%20Retrospective%20Review%20Final%20Report%202023.05.03.pdf#page=43) their chief concerns with AI-enabled tools for retrospective review were AI trustworthiness and explainability.

The report and case studies are, we think, both encouraging and instructive for governmental creators and users of AI. One lesson learned is that the resources and technical expertise required to carry an AI project to the finish line are rare among federal agencies. Where internal capacity exists, agencies should consider launching pilot projects on algorithmic retrospective review and sharing their tools openly with other federal agencies.

Finally, Sharkey and Mallet suggest that the case studies of agency experience with AI in retrospective review also shed light on the value of AI for prospective rulemaking. An example of how AI-enabled retrospective review could come into play at the time of rulemaking is the Transportation Department’s practice of drafting regulations in a structured format which facilitates better comprehension of rules by computers. Algorithmic retrospective review tools could also be used throughout the lifecycle of crafting new regulations to ensure that the new rules are well-drafted, consistent, and non-duplicative.

The authors conclude that easing AI into prospective rulemaking by learning from and replicating its contributions to retrospective review is a prudent first step.