OPTIONS MEMO

To: Lael Brainard, Assistant to the President for Economic Policy and Director of the National Economic Council
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Re: Administration Strategy for Generative AI in the United States
Date: 25 April 2024

EXECUTIVE SUMMARY

We recommend a risk-based sectoral approach for the administration of AI in the United States, managed through a dedicated government agency, the United States Office of Artificial Intelligence (USOAI). High-risk applications will be subject to more stringent regulations than low-risk applications. Federal funding will be allocated for loans and tax rebates to promote gAI innovation, as well as to fund educational and job retraining initiatives.

CURRENT STATE OF PLAY

- U.S. Market Specifics: American companies, such as OpenAI, Google, and Microsoft, are leading the development of generative AI.[1] In 2023, 61 AI models originated from US-based institutions, outpacing the EU with 21 and China with 15. Simultaneously, 52% of Americans are concerned about AI.[2]
- Legislative Framework: President Biden's Executive Order formulates standards for safety, security, and privacy protection and aims to promote innovation and competition. The National Institute of Standards and Technology (NIST) has been directed to develop guidelines and best practices.[3] Lawmakers introduced additional bills in Congress on transparency, disinformation, and accountability such as the Algorithmic Accountability Act and Platform Accountability and Transparency Act.[4]
- International Context: The EU and South Korea have adopted broad AI regulations, including data protection and cybersecurity; Brazil and Singapore have implemented general principles and guidelines-based approaches.[5] The absence of domestic U.S. AI regulation hampers the U.S. leadership in these forums on AI governance.[6]

[1] Nicol Turner Lee et al., "Around the Halls: What Should the Regulation of Generative AI Look Like?," June 2, 2023, https://www.brookings.edu/articles/around-the-halls-what-should-the-regulation-of-generative-ai-look-like/.
[2] Ray Perrault and Jack Clark, "Measuring Trends in AI: Stanford University Artificial Intelligence Index Report 2024," April 2024, https://aiindex.stanford.edu/report/.
[3] White House, "FACT SHEET: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence," October 30, 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence.
[4] Tate Ryan-Mosley, Melissa Heikkilä, and Zeyi Yang, "What's Next for AI Regulation in 2024?," MIT Technology Review, January 5, 2024, https://www.technologyreview.com/2024/01/05/1086203/whats-next-ai-regulation-2024/.
[5] Andreas Kremer et al., "As Gen AI Advances, Regulators—and Risk Functions—Rush to Keep Pace," December 21, 2023, https://www.mckinsey.com/capabilities/risk-and-resilience/our-insights/as-gen-ai-advances-regulators-and-risk-functions-rush-to-keep-pace.
[6] Joshua P. Meltzer, "The US Government Should Regulate AI If It Wants to Lead on International AI Governance," May 22, 2023, https://www.brookings.edu/articles/the-us-government-should-regulate-ai/.

ISSUE STATEMENT

Generative artificial intelligence (gAI) is poised to radically reshape societies worldwide. Goldman Sachs estimates that gAI could increase global GDP by as much as 7% over the next 10 years.[7] However, the U.S. still does not have a clear strategy to reap the benefits of this technology while addressing risks including job displacement, privacy loss, discrimination, disinformation, and even human extinction. Furthermore, if the U.S. fails to remain a leader in gAI, it risks falling behind competitor countries economically and geopolitically. As such, the National Economic Council must develop a blueprint for regulation that balances encouraging innovation and mitigating risks to build trust and provide a clear path forward for all stakeholders.

STAKEHOLDER MAPPING

- **Private US companies** are the anchor of global gAI innovation. They prefer policies like the Telecommunications Act (1996), which limits legal liability for online platforms.[8] They want legal clarity to avoid uncertainty and liability issues. Though they have different individual approaches to regulation, they are likely to form a business alliance to influence legislation.
- AI users and half the **American public** are concerned about job losses and the harms of generative AI.[9] They expect risk mitigation and inclusive innovation, and they will vote to achieve these goals. They rely on gAI companies' services and could be easily influenced by PR campaigns.
- Individual **US federal government departments** currently oversee AI development in their respective areas. They have competing views on how regulated AI should be. For example, DoD plans to accelerate use of AI while DHS is concerned about deepfakes. To prevent coordination problems, coherent legislation must prevent departments from delaying policy implementation.
- The **Biden White House** is under pressure to take a lead on regulation but also needs to promote innovation.[10] New legislation will be closely watched prior to the 2024 election. Alliances with influential stakeholders are crucial for effective legislation and smooth implementation.

See Appendix A for detailed insights.

[7] "Generative AI Could Raise Global GDP by 7%," Goldman Sachs, April 5, 2024. https://www.goldmansachs.com/intelligence/pages/generative-ai-could-raise-global-gdp-by-7-percent.html.
[8] "Section 230: An Overview,' Congressional Research Service, January 4, 2024, https://crsreports.congress.gov/product/pdf/R/R46751#:~:text=Section%20230%20of%20the%20Communications,users%20of%20interactive%20computer%20services.
[9] Michelle Faverio and Alec Tyson, "What the Data Says about Americans' Views of Artificial Intelligence," *Pew Research Center* (blog), November 21, 2023, https://www.pewresearch.org/short-reads/2023/11/21/what-the-data-says-about-americans-views-of-artificial-intelligence/.
[10] White House, "FACT SHEET: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence."

POLICY OPTIONS & ANALYSIS

Options were assessed based on the following six criteria, in order of importance:

1	**Geopolitical competitiveness**	Risk to US' dominant position in international AI market, especially relative to major competitors (e.g., China)
2	**Political feasibility**	Potential of receiving bipartisan support in Congress and among voters, along with support from federal agencies
3	**Existential risk**	Risk of destructive consequences
4	**Cost & financial feasibility**	Cost of implementation borne by private and public sectors
5	**Bias, inclusion, & fairness**	Ability to promote nondiscrimination and fairness
6	**Enforceability**	Ease of monitoring and enforcement

See Appendix B for detailed criteria, weights, and options assessment.

Five policy options were considered across criteria. Four were rejected:

1. "Libertarian" option: Allow market forces to shape emerging gAI industry; avoid over-regulating to preserve US dominance. Avoid exerting government chokehold on a fast-evolving space but reserve the right to regulate further later. Leave companies to largely self-regulate; develop policy reactively.

- Rejection rationale: Unchecked development could threaten public safety, privacy, and security. Policy decisions developed reactively could be haphazard, non-uniform in application, and compromise US's position as a global leader on gAI.

2. "Nationalization" option: Government exerts control over AI development in high-risk sectors like defense, healthcare, and political elections by contracting private companies, mirroring the military-industrial complex. Like DARPA, government funding for R&D may lead to civilian applications, with technology released at the government's discretion.

- Rejection rationale: Very costly to government, with probable repercussions on private innovation. Could severely reduce economic benefits and jeopardize the U.S.'s gAI dominance.

3. "Participatory democracy" option: Rather than containing the proliferation of gAI, decentralize knowledge of gAI. Allow the public to act as shareholders in large gAI companies, which would be treated as a public good; decide on resource use democratically. gAI profits could be returned as dividends or reinvested into programs for public benefit.

- Rejection rationale: Low potential for private and public sector buy-in. Complex implementation with little control over use of gAI and significant enforceability challenges.

4. "Protectionist libertarian" option: Limit regulation within gAI space and defer to market forces within US borders. Heavily regulate AI exports to ensure antagonistic foreign actors do not leverage American gAI assets for nefarious purposes.

- Rejection rationale: May set undesirable precedents to limit information sharing across borders; may harm allies and limit access to foreign technologies. Challenging to implement and enforce.

See Appendix C for detailed information on all options.

PROPOSAL AND POLICY LOGIC

Based on the criteria, we recommend a **risk-based sectoral approach**. Under this approach, the degree of government oversight for a given industry depends on the risk level of gAI, with higher-risk industries subject to more stringent regulations. This approach is effective because gAI is diverse, with applications ranging from virtual museum guides to bioweapon synthesis. Applying uniform regulation to all gAI products is impractical, and existing sectoral regulations may already cover some products.

US federal agencies apply risk-based regulation to chemicals (EPA) and pharmaceuticals (FDA). These regulations maintain US leadership in these fields and keep citizens safer. Extending similar regulations to AI would mitigate existential risks and societal concerns without hindering innovation. Senators from both sides of the aisles have already expressed support for creating a federal regulatory AI agency.[11]

A new independent AI regulatory agency, the U.S. Office of Artificial Intelligence (USOAI), will be established. Staffed with experts from both public and private domains, USOAI will be responsible for coordinating interagency regulation and designating sectoral risk levels using a standardized risk assessment tool. It will also conduct periodic audits of AI companies, track whistleblower complaints,[12] and issue penalties for noncompliance.

AI regulation will be coupled with efforts to promote socially responsible growth. To level the playing field for small companies and prevent AI oligopolies, the government will provide loans and tax rebates for small gAI companies with innovate ideas that align with the regulatory framework. Additionally, while the net effects of gAI on the job market are unclear, [13] workers will undoubtedly require new skills to thrive in such an economy.[14] The federal government should sponsor AI educational programs in every public school and subsidize corporate job retraining programs for workers displaced by gAI to mitigate these transaction costs. Otherwise, gAI risks fueling further inequality and economic populism within the US.[15] Federal agencies are also encouraged to leverage gAI to improve government services—a currently ongoing process[16]—in line with the risk management principles established in this memo and by the OMB.[17]

See Appendix D for more specific policy proposals on regulating products by risk level.

[11] Benjamin J. Cote et al., "Congress Contemplates Creating a New Federal AI Regulatory Agency," Pillsbury Law, May 26, 2023, https://www.pillsburylaw.com/en/news-and-insights/congress-federal-ai-regulatory-agency.html.
[12] Yoshua Bengio et al., "Managing AI Risks in an Era of Rapid Progress," arXiv, November 12, 2023, http://arxiv.org/abs/2310.17688.
[13] Will Knight, "No One Actually Knows How AI Will Affect Jobs," *Wired*, April 11, 2024, https://www.wired.com/story/ai-impact-on-work-mary-daly-interview.
[14] Emma Goldberg, "A.I.'s Threat to Jobs Prompts Question of Who Protects Workers," *The New York Times*, May 23, 2023, https://www.nytimes.com/2023/05/23/business/jobs-protections-artificial-intelligence.html.
[15] Zinkula, Jacob. "AI Is Going to Force Millions of Workers to Train for New Jobs. The US Has Historically Been Terrible at This." Business Insider. Accessed April 22, 2024. https://www.businessinsider.com/jobs-ai-chatgpt-career-change-reskilling-tech-training-workers-disruptions-2023-11.
[16] "Federal AI Use Case Inventories," AI.gov, accessed April 20, 2024, https://ai.gov/ai-use-cases.
[17] Executive Office of the President, Office of Management and Budget, "Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence," from Shalanda D. Young, M-24-10, March 28, 2024, https://www.whitehouse.gov/wp-content/uploads/2024/03/M-24-10-Advancing-Governance-Innovation-and-Risk-Management-for-Agency-Use-of-Artificial-Intelligence.pdf.

DELIVERY PLAN

Congress would need to pass legislation to establish the USOAI. It is recommended that bipartisan support be garnered immediately.

Key action items

Immediate term (6 months)

1. **Institution Building:** Set up the USOAI immediately. Activities will include:
    a. Prepare organization structure and recruit key personnel
    b. Develop a comprehensive set of objectives and mandates for USOAI, in keeping with the risk-based sectoral approach
    c. Plan for hiring top expert talent
2. **Risk Framework:** Develop a risk-based framework across departments, sectors, and product lines. Collaborate with a range of actors for this purpose, specifically private AI companies, foreign governments, and multilateral organizations.
3. **Risk Mitigation Strategy:** Establish protocols for continuous monitoring of assigned risk levels and set up a rapid response infrastructure for shutdowns to overcome unforeseen adverse scenarios. Facilitate feedback and open reporting from the public.
4. **Value Alignment and Ethics Framework:** Develop value alignment and ethics protocols that are context-dependent, pluralistic, unbiased, and fair. Test products for goals that are socially responsible and benefit society.

Long-term (12 months+)

5. **Research and Development Efforts:** Establish USOAI R&D wings to research disruptions caused by gAI, specifically workforce disruptions, human-AI interactions, human wellbeing, and safety. R&D wing will also examine and anticipate existential risks associated with gAI and promote research in external partner institutions.
6. **AI Literacy Programs:** Expand AI education programming in public schools. Fund job retraining programs in gAI for displaced workers. Facilitate public discussions on how to leverage AI. Train government personnel to leverage AI for policy work and embrace automation for improved public service delivery.
7. **International and Cross-sector Collaboration:** Promote platforms and hubs where AI is used to advance science, solve global issues (e.g., climate change) and local issues (e.g., unemployment) by convening sector leaders, international governments, and multilateral institutions.
8. **Government Incentives for Innovation:** The government shall allocate funds towards directed investment in AI to ensure that small and medium enterprises can flourish in the AI market and also contribute to the development of technology targeting specific sectors, communities, and problems.

See Appendix E for specifics on objectives and key results. See Appendix G for implementation plan.

Budget

AI will have an estimated 21% net increase on the United States GDP by 2030[18]. The U.S. must invest to retain its competitive position and capture value. The majority of the budget comes from educational programs in public schools and job retraining programs for displaced workers. The budget also allocates $68 million to establish USOAI and fund its annual operations.

Penalties imposed on companies that violate the gAI framework will generate some revenue for USOAI operations. Funding could also be raised by increasing the corporate income tax or levying a tax on the collection of data by Big Tech companies. Use of tax revenue to subsidize workforce upskilling would benefit tech companies, adding substantive rationale for this move.

Proposed budget for sectoral approach (annual):

Category	Item	Estimate
USOAI	Staff (500 employees)	$50M
	Technology & Infrastructure	$5M
	Research & Framework Development	$2M
	Travel and Auditing	$1M
	Employee Training	$1M
	Facilities	$2M
	Operations	$5M
Innovation	Government Incentives	$200M
Education	Public School Curriculum	$500M
	Job Retraining	$1,000M
TOTAL		**$1.766B**

See Appendix F for budget details.

[18] "U.S.: Generative AI Market Size 2030," Statista, accessed April 22, 2024, https://www.statista.com/forecasts/1449843/generative-ai-market-size-us.

RISKS & MANAGEMENT

Top risks are listed in order. Priority level is the product of impact level and probability level scores.

	Risk	Category	Impact	Impact Score	Likelihood Score	Priority level	Mitigation Strategy
1	Assigned risk levels become outdated	Operational	Over-classification as high-risk stifles innovation or high-risk products overlooked	5	4	20	Case-by-case assessments, upskill regulators; continuously update classification method
2	No Congressional action due to partisanship	Operational	Policy risks unenforceable and potentially temporary	4	3	12	Mobilize support and reach consensus
3	Companies in high-risk categories choose to leave the U.S. due to compliance costs	Strategic	Lose global competitiveness	4	3	12	Proactively reach out to companies to assist with compliance
4	Small and medium enterprises struggle to compete with big Tech	Strategic	Innovation stifling	3	3	9	Level the playing field with government support

APPENDICES

Appendix A: Detailed stakeholder insights

Group	Insights	Interest	Power
Private companies	– Concerned that regulation will stifle innovation, especially if costs of reporting are too high for companies to bear. On the other hand, established regulations will reduce operational ambiguity – Wish to retain "first mover advantage" globally – Likely seeking similar regulation to U.S. Code 230, Communications Decency Act, which promoted free market in Internet and allowed U.S. to pull ahead and allowed U.S.-based internet companies to grow largely unregulated[19]. Companies may prefer a self-regulatory model.	High	Med.
U.S. public	– May fear unregulated AI will result in job loss – Growing hesitancy around AI; as of 2023, Pew Research Center found 52% of Americans were 'more concerned than excited' about use of AI in daily life[20] – Pew found only ~30% of Americans could accurately recognize all six examples of AI use in daily life presented to them: low level of understanding in the public[21]	Med.	Low
Dept. of Homeland Security	– Concern around 'deep fakes' and potential to sow serious mistrust in U.S. population – Launching 3 pilot programs for use of AI to improve security as part of broader AI roadmap that seeks to capitalize on advantages of AI while mitigating risks[22]	Med.	Med.
Dept. of Defense	– Have released strategic plan to accelerate use of and research into AI to maintain U.S. warfare dominance – Will need to rely upon commercial sector to accelerate use cases for AI; prioritizing AI development / adoption to achieve 5 outcomes: o Superior battlespace awareness and understanding o Adaptive force planning and application o Fast, precise, and resilient kill chains o Resilient sustainment support o Efficient enterprise business operations	High	Med.
White House & Democratic Party	– Incentivized to be seen as promoting innovation while still protecting the U.S. public and its interests	High	High

[19] "47 U.S. Code § 230 - Protection for Private Blocking and Screening of Offensive Material," LII / Legal Information Institute, accessed April 16, 2024, https://www.law.cornell.edu/uscode/text/47/230.
[20] Faverio and Tyson, "What the Data Says about Americans' Views of Artificial Intelligence."
[21] Ibid.
[22] "Department of Homeland Security Unveils Artificial Intelligence Roadmap, Announces Pilot Projects to Maximize Benefits of Technology, Advance Homeland Security Mission," Department of Homeland Security, accessed April 16, 2024, https://www.dhs.gov/news/2024/03/18/department-homeland-security-unveils-artificial-intelligence-roadmap-announces.

	– Wishes to move at-pace with innovation and wary of implementing stringent policies too early as nascent industry develops – Would like to point to successes in AI regulation as part of 2024 election – Does not want to leave AI regulation to other countries (e.g., data privacy laws largely pioneered by UK)[23] – Receiving recent pressure to define whether to mandate open-source or closed models[24]		
Republican Party	– Trump proponent of "American leadership" in AI space; has not been major sticking point on the campaign trail to-date but he is likely a proponent of a hands-off approach – DeSantis and Haley have been quoted talking about the risks of letting China pull ahead in the world of AI innovation[25] – Incentivized to criticize regulations / guidance introduced during Biden's presidency, could become talking point in 2024 election	Med.	Low
Foreign allies	– Likely recognize criticality of US regulatory environment given US private sector leadership in the space – United Kingdom and Europe often seen as first-movers in regulation of emerging technologies – Interested to reap benefits of American AI innovation and maintain access to cutting-edge products	High	Low
Environmentalists	– Concerned given the development, training, and operation of generative AI models involves substantial energy use and results in carbon emissions; processes also require considerable amounts of water for cooling[26] – Potential for significant backlash	High	Low
Academia & Civil Society	– Research implications of changes to AI landscape and analyze impacts of implemented policies – Serve as launchpad for AI products – Teach next generation on developing, using, and regulating AI – Contribute to development of ethical standards	Med.	Med.

Appendix B: Criteria, weights, and options assessment

1 = Low (least feasible or appealing)

[23] Alan Charles Raul and Alexandra Mushka, "The U.S. Plans to 'Lead the Way' on Global AI Policy," Lawfare, February 13, 2024, https://www.lawfaremedia.org/article/the-u.s.-plans-to-lead-the-way-on-global-ai-policy.

[24] Matt O'Brien, "White House Wades into Debate on 'Open' versus 'Closed' Artificial Intelligence Systems," *AP News*, February 21, 2024, https://apnews.com/article/ai-executive-order-biden-opensource-models-1c42092e55729d731d246440094f7fed.

[25] Tyler Wornell, "AI in Elections: Where Republican Candidates Stand on Tech," *NewsNation*, November 23, 2024, https://www.newsnationnow.com/politics/debates/republican-candidates-artificial-intelligence-stances/.

[26] Fred Pearce, "How Artificial Intelligence Could Help Scale Up Low-Carbon Energy and Cut Emissions," Yale Environment 360, March 3, 2020, https://e360.yale.edu/features/artificial-intelligence-climate-energy-emissions.

2 = Medium
3 = High (most feasible or appealing)

Criteria	Weight	Libertarian	Risk-based / sectoral	Nationalization	Participatory democracy	Protectionist libertarian
Geopolitical competitiveness	25%	3	2	2	3	3
Political feasibility	25%	3	3	2	1	3
Existential risk	20%	1	3	3	2	1
Costs/ Financial feasibility	10%	3	2	1	1	2
Bias, inclusion, fairness	10%	1	3	2	3	1
Enforceability	10%	3	2	2	2	1
Weighted total score	100%	2.40	2.55	2.10	2.00	2.10

Appendix C: Comprehensive set of options

Option 1 - Rejected	**Libertarian**
Scope	Allow market forces to shape emerging AI industry and avoid over-regulating to preserve global competitiveness of US in AI space. Reserve the right to regulate further down-the-line but do not risk government chokehold on a fast-evolving space. Leave companies to effectively self-regulate and develop necessary policy reactively. Companies abide by the Executive Order and existing legislation.
Analogous industry	Cryptocurrency
Specifics	• Responsible use of AI promoted to encourage companies to adopt a series of recommended by not obligatory measures. They will be encouraged to tackle adverse effects such as misinformation, bias, maintain transparency etc, and include human oversight wherever needed. • Section 230 of Communications Decency Act 1996 applied to promote innovation through self-regulation and limited accountability setting. • Accountability for privacy rests with users; firms are encouraged to adopt opt-out privacy friendly models • Entrepreneurial freedom with incentives for start-ups, such as incubator programs, tax rebates, public loans and grants. Free market competition encouraged • No new institutional body or regulatory tools; current regulatory agencies strengthened and tools applied on gAI. NIST • Reliance on market forces to ensure displaced workers find new roles; in keeping with federal development of principles, best practice, and reporting per Executive Order; NIST maintains its role • Extremely high-risk products falling in the chemical, biological, radiological, nuclear and cybersecurity would need to be reported to Department of Energy and Homeland Security. • Private companies shall decide whether to use renewables or fossil fuels for computing. We may expect most companies to choose the cheaper option; fossil fuels because of the laissez-faire approach. • Companies will be free to collaborate and do business across borders. Transnational collaboration on AI is likely to be high.

Option 2 - Rejected	**Nationalization**
Scope	The government leads control of high-risk AI development in sectors like defense, healthcare, elections, etc. through contracting with private companies. This approach mirrors the current military-industrial complex. AI development would strictly align with the direction set by Congress or executive branch agencies like the Department of Defense. Similar to DARPA, government funding for research and development may lead to civilian applications that could be more broadly used, but the technology would be released at the discretion of the government. This would be a form of industrial policy centered around AI.
Analogous industry	Nuclear weapons, defense industry
Specifics	• The US government will take complete ownership over high-risk sectors such as defense, healthcare, etc. The government may contract private agencies to develop these gAI applications in a strictly confidential way.

	• It may report to public regularly on safety testing of AI products in key industries without revealing sensitive information. • Government and contracted agencies will reach a contractual agreement on the accountability of the uses of their gAI application. • The US Govt shall become the owner of all data and output of gAI in the identified sectors or product lines. Deep-synthesized information must be labeled, and service providers must assume responsibility for protecting US citizens' personal information in training data. Providers shall ensure that personal data is obtained based on consent and refrain from collecting unnecessary personal information or illegally storing or sharing it. • Compliances, audits, and certifications focused on security and reliability of the AI systems shall be installed. • Government to institute national program to upskill those whose jobs are jeopardized by AI innovation. Government support to train next generation of American AI talent (e.g., subsidized educational programs, low-rate educational loans) with pipeline into nationalized AI jobs. Expansion on current OPM initiative to identify / hire for AI needs across government[2] • US AI Department set up within the White House using the EU AI office as role model. The US AI office would play a key role in encouraging cooperation, competition and innovation. It would monitor the implementation of standards defined by the NIST and punish non-compliance. It cooperates with international partners to align standards. • Government takes on the responsibility for fair use of AI, including adhering to ethical standards, curbing disinformation, ensuring value and alignment. • Use of environmentally friendly energy should be the prerogative of the government. However, high risk sectors such as defense generally are energy-intensive. • Constant human oversight and pre-approval is key to minimizing the risk of serious harm. Respective tools for human intervention should be built into AI software and should be appropriate to be implemented before a high-risk AI system is being placed on the market.

Option 3 – Rejected	**Participatory democracy**
Scope	Rather than seeking to contain the proliferation of AI, this approach would seek to decentralize knowledge of AI as widely as possible. It would allow the public to act as shareholders in large AI companies, which would be treated as a public good, and decide how the resources would be used. Profits from AI companies could also be returned as dividends or reinvested into programs used to benefit the public.
Analogous industry	Public utilities
Specifics	• Total transparency with US public; private companies to share results of safety tests and ongoing efforts not only with US government (as in Executive Order), but also with the US public • The public, acting as shareholders, would have voting rights or other mechanisms to influence the strategic directions of AI companies. This decentralization of power aims to increase accountability by ensuring that the interests of a broad array of stakeholders are represented. Effective channels for

	feedback and grievances would be essential to ensure that the public can report concerns and influence company policies. • A strong legal framework should be in place to protect privacy. This would involve clear regulations governing data protection, the rights of individuals, and the responsibilities of AI companies. It should also provide remedies and penalties in cases of privacy violations. • Public focused innovation incentivized through this model. Resources are allocated through public votes on what gAI applications should be invested in. • Americans dynamically determine how the displaced workforce should be compensated, as net impact to employment becomes clearer. Keep door open to models of employer compensation / required notice periods, to be defined democratically by the American people. Consider instituting government-sponsored workforce upskilling program to support displaced workers. • National Institute of Standards and Technology keeps the role as it was spelled out in the Executive Order: Setting standards for testing before public release. The Department of Homeland Security will apply those standards to critical infrastructure sectors and establish the AI Safety and Security Board. The Departments of Energy and Homeland Security will also address AI systems' threats to critical infrastructure, as well as chemical, biological, radiological, nuclear, and cybersecurity risks. The Department for Education will coordinate educational efforts. • Mechanisms for countering disinformation may be needed as gAI use will be widespread and publicly owned. Educating the public on the risks of AI may help them spot and ignore disinformation, for example, information on scams and identity theft in the US banking industry. • Total energy use may likely increase with more users, leading to negative environmental impacts. However, if the public was concerned about this impact, it may also push AI companies to use more renewables or to build data centers in places with lower impact, for example. As a result, the impact would depend on public sentiment. • Level of human oversight on different applications shall be defined by leading experts in each sector (defense, medicine).

Option 4 - Rejected	**Protectionist libertarian**
Scope	Limit regulation within gAI space and defer to market forces within US borders; heavily regulate AI exports to ensure antagonistic foreign actors do not leverage American gAI assets for nefarious purposes.
Analogous industry	Computer chips
Specifics	• Same as libertarian approach, but operations shall be constrained within United States. No requirement that companies make their code open source. Companies still required to share safety test results and escalate potentially problematic AI applications to US government, per Executive Order. Add responsibility of companies to ensure that foreign agents barred from using products or accessing code. Companies left with responsibility to self-police security, safety, trustworthiness of systems but report results to US government. No requirement that US government shares this information with US public

	• Promote the responsible use of AI and encourage companies to adopt a series of recommended but not obligatory measures. Lawmakers still have a role in setting the basic legal frameworks that define liability and outline minimal compliance requirements for AI companies. They also reserve the right to enact more stringent regulations if needed, based on how it would harm US national interest. • Users should be mindful of privacy implications and protect personal or sensitive information when using AI applications. Training data can be treated as trade secrets. Companies own the data, but report to US government. • Entrepreneurial freedom directed towards American individuals and companies with incentives for start-ups, incubator programs, potentially tax incentives, public loans and grants. Free market competition within borders, but controls put on product exports to non-citizens and cross-border counterparts. High rate of technological advancement and product development within American borders. • Only American nationals and nationals of close allies permitted to be hired in AI jobs for fear of leaked proprietary information to foreign foes. Majority stake in US-based AI companies must be retained by American investors or close allies (i.e., no US-based companies should have >50% ownership held outside of the United States) • US AI Office set up within the White House, drawing inspiration from the EU AI office. The US AI office would play a role in encouraging cooperation, competition, and innovation. It would monitor the implementation of standards defined by the NIST and punish non-compliance. It cooperates with international partners to align standards. The Office has the right to deny a company to introduce a system into the market if this does not meet the standards. • Existing regulation on oversight will be applied. Apart from that, companies should define their own policies on when human oversight is needed and when not.

Option 5 - Accepted	**Risk-based Sectoral**
Scope	Government applies varied approaches based on perceived risk inherent to various industries. Higher-risk industries subject to closer oversight and more stringent requirements; lower-risk industries permitted more self-governance.
Analogous industry	Chemicals / pharmaceuticals
Specifics	• High-risk sectors required to share more information or more frequently report back to US government on results of safety tests / ongoing efforts to protect consumers and avoid adverse outcomes. Specific guidelines or rules developed for ultra-high-risk sectors where US sees real potential security threat; could include export restrictions on powerful AI products. Low-risk sectors beholden only to Executive Order guidance; companies encouraged to publicly disclose data to support trust-building in AI. • Develop an AI governance framework and provide detailed and practical guidance for the private sector to deploy AI responsibly, similar to Singapore's Model AI Governance Framework. Introduce sector-specific guidelines for the

	responsible deployment of AI. For example, in areas like finance, where the Monetary Authority of Singapore (MAS) has guidelines to ensure fairness, ethics, accountability, and transparency in the use of AI and data analytics. A thorough classification of AI systems, not only on risk levels associated with their end applications but also the adaptable nature of foundational models, the sensitivity of the training data and user inputs, and the scope of the AI models and their user base. Designate risk levels accordingly. Providers shall tag the content created by generative AI in high-risk, medium-risk sectors. Implement a negative list mechanism that would subject high-risk applications to a licensing requirement. Further clarification of the responsibilities of each stakeholder along the value chain. Prevent foundational model providers from being in a position of power to offload responsibilities through contracts signed with downstream customers, balance with responsibilities between the downstream and the upstream. • Publish guidelines on how AI systems that process personal data must operate. This ensures that organizations are accountable for any personal data they handle, including data processed by AI, requiring them to implement necessary measures to protect personal data. Government has access rights to high-risk sectors data. • Operate on limited freedom principles: Set standards and guidelines that all companies must abide by. Reducing ambiguity and uncertainty around regulation so that innovators can operate within them. Balance risk mitigation with innovation through zoning of risks on privacy, ethics, safety and other criteria. For high-risk sectors, require a development checkpoint before public launch. • Impose controls on hiring within high-risk sectors, e.g., mandate hiring of American nationals for AI-related jobs in ultra-high-stakes industries. No controls imposed on AI-related hiring in lower-risk sectors (e.g., culture). Consider government-sponsored / subsidized AI training and education for high-risk sectors to maintain US dominance on international stage • Set up US AI Office within the White House, using the EU AI office as role model. The US AI office would play a key role in encouraging cooperation, competition, and innovation. It would monitor the implementation of standards defined by the NIST and punish non-compliance. It cooperates with international partners to align standards. The office has the right to deny a company to introduce a system into the market if this does not meet the standards. • The EU has proposed a rights-based framework and a civil liability framework for AI in line with levels of risk. For example, AI cannot be used to manipulate children. In a US context, such frameworks may prevent certain uses of AI and hold AI companies partially responsible for disinformation. As such, companies would be incentivized to find ways to label any false information deliberately generated using its tools. This may be somewhat like the pressure applied to social media companies to label false statements on their platforms. • For high-risk environments, AI systems must be designed in a way that makes them easily accessible by a natural human person during the use. Constant human oversight and pre-approval is key to minimizing the risk of serious harm. Respective tools for human intervention should be built into AI software

	and should be appropriate to be implemented before a high-risk AI system is being placed on the market. For low-risk environments, an option for human intervention should be built in the system.

Appendix D: Guidelines for assigning risk to sectors and products

USOAI will have primary regulatory responsibility for generalized gAI products (e.g., ChatGPT). USOAI will have a dedicated team that monitors new gAI products to ensure no dangerous products slip through the cracks simply because they are in low-risk sectors. All products will be automatically assigned the risk level of the sector in which they fall, but USOAI will have the authority to modify the risk level of specific products within each sector with appropriate justification. Specialized gAI products within an already regulated domain (e.g., banking, healthcare, utilities) will be evaluated by the domain regulator in conjunction with guidance from USOAI, which reserves the right to override the domain regulator's decision on technological matters if such a decision would be more conservative. Risk levels will be regularly reassessed as new products are developed in each sector.

To standardize risk ratings, experts within USOAI will develop a methodology for risk-rating sectors that would be applied to all cases, with some potential for overrides with justification. Some considerations within this methodology for determining sectoral risk will likely include the following:

- Is gAI likely to be widely used in this sector to deliver critical services or make significant decisions in place of humans?
    - *Example: The widespread use of gAI programs to develop personalized lessons for students as a complement or substitute for human teachers would raise the risk rating of the educational sector.*
- Is the use of gAI likely to lead to large disruptions in the sector's workforce?
    - *Example: The use of gAI at news organizations could have a large impact on the number of journalists and copywriters required, which would raise the risk rating of the media sector.*
- Will gAI models in this sector collect and store critical personal data from users?
    - *Example: gAI models used to create personalized healthcare plans are likely to use highly sensitive data regarding patients' medical history, which would raise the risk rating of the healthcare sector.*
- Do gAI models in this sector have a high potential for producing biased information?
    - *Example: Using gAI models to generate training simulations for police officers may leverage data from prior encounters shaped by bias towards racial minorities and perpetuate this bias, which would raise the risk rating of the criminal justice sector.*[27]
- Could gAI models developed in this sector be easily applied for malevolent purposes?
    - *Example: gAI programs designed to help scientists find ways to synthesize new molecules for medicines could be repurposed by terrorist organizations to invent new bioweapons, which would raise the risk rating of the biotech sector.*[28]

[27] The idea of using gAI to create a training simulation came from PingPong (Director Lael Brainard mode) in response to the prompt "What are the possible uses for generative AI in the defense sector?" One of the ideas from PingPong was "Training Simulations and Virtual Environments: Generative AI can create highly realistic and dynamic training simulations for military personnel […]"

[28] Cade Metz, "Dozens of Top Scientists Sign Effort to Prevent A.I. Bioweapons," *The New York Times*, March 8, 2024, https://www.nytimes.com/2024/03/08/technology/biologists-ai-agreement-bioweapons.html.

The table below illustrates the specific requirements that would be imposed on products depending on their risk level.

Risk category	Strategy
High-risk products	– All new gAI products and major upgrades must be submitted to USOAI for approval before launch, mirroring the FDA approval process for pharmaceuticals. – Significant gAI products may not be exported without approval from USOAI and the Bureau of Industry and Security. – Both training data and data generated using gAI products must be made available to USOAI. – gAI systems must be easily accessible to a human during use.
Medium-risk products and above	– Risks specific to gAI products and safety test results must be disclosed in SEC filings. – Regulators may conduct audits to ensure compliance. – Products generated using gAI must be tagged.
Low-risk products and above	– Companies are encouraged to publicly disclose data for gAI products. – Basic measures to secure and protect personal data must be implemented. – Companies bear some legal responsibility for "foreseeable and preventable" harm generated by gAI products.[29] – Products must adhere to the Blueprint for an AI Bill of Rights principles, including notifying people when they are interacting with AI.[30]

[29] Dan Milmo, "AI Firms Must Be Held Responsible for Harm They Cause, 'Godfathers' of Technology Say," *The Guardian*, October 24, 2023, https://www.theguardian.com/technology/2023/oct/24/ai-firms-must-be-held-responsible-for-harm-they-cause-godfathers-of-technology-say.
[30] "Blueprint for an AI Bill of Rights," The White House, accessed April 20, 2024, https://www.whitehouse.gov/ostp/ai-bill-of-rights.

Appendix E: Objectives & Key Results

Overarching Goal: Develop risk-based sector-specific approach for regulating generative AI

- Objective 1: Establish the United States Office of Artificial Intelligence (USOAI)
    - Key Result 1: Publish the organizational structure and the necessary staff profiles in week 1 in May
    - Key Result 2: Fill 50% of all staff positions by the end of May and 100% by end of July
    - Key Result 3: Finalize the comprehensive set of mandates and operational objectives
- Objective 2: Determine the risk levels associated with AI and develop a framework
    - Key Result 1: Define a framework that classifies risks into high, medium, and low by middle of June
    - Key Result 2: Conduct a stakeholder consultation and collaborate on the draft frameworks with at least 10 AI industry leaders, 10 academic institutions and all necessary government departments by the end of December
    - Key Result 3: Pilot and finalize guidelines by the end of March and release them
- Objective 3: Strengthen AI research and development
    - Key Result 1: Establish 3 pilot R&D programs focusing on innovation until December
    - Key Result 2: Refine programs and start 5 new programs and initiatives until summer 2025
    - Key Result 3: Develop the first set of guidelines for AI Values and Ethics, Transparency, and Accountability by end of September
- Objective 4: Align international standards for AI
    - Key Result 1: Establish an international wing in the USOAI by July and designate “AI Ambassadors”
    - Key Result 2: Host one international conference on AI after the guidelines have been adopted and published
    - Key Result 3: Negotiate one data share and standards agreement until 2030
- Objective 5: Develop AI literacy and engagement programs
    - Key Result 1: Design and issue AI curricula in public schooling by December
    - Key Result 2: Provide capacity building programs in a phased manner for the next year across government departments and agencies
    - Key Result 3: Establish a public forum and feedback system for engaging citizens directly.

Appendix F: Budget rationale

Numbers for the budget are largely taken from PingPong's (ChatGPT-4 Vanilla mode) estimates.

- Regulatory expenses come from "the costs that would be involved in starting a new US federal regulatory agency with 500 people that is responsible for 1) creating rules and guidelines around AI use, 2) testing high-risk AI products before they come to market, and 3) enforcing these rules," in addition to "the cost of traveling to various sites to audit 200 AI companies per year" assuming "an average audit duration of 5 days and hotel costs of $250 per night."
- Expenses related to AI literacy come from the cost of "providing federal grants to the states to fund AI education in every public school in the US" and "funding job retraining programs for workers displaced by generative AI." PingPong estimated that $5,000 per school would be enough for "basic implementation," or an "introduction to AI concepts with some practical exercises, mainly using existing computer resources." It also estimated that $2,000 per worker would be enough for "basic retraining," or "short courses on digital skills or similar."[31] More advanced programs would require more funding.

Additionally, the costs for loan and tax rebates are based on the FY2023 budget request for the Loan Programs Office (LPO) within the Department of Energy (DOE).[32] The goal of the gAI funding program is to emulate the scale of the LPO program, so this cost is drawn from the budget.

Items	**Expenses**
Staff	$100,000 salary for 500 workers
Technology and Infrastructure	One-time cost estimated at $5 million
Research & Framework Development	One-time cost estimated at $2 million
Travel and Auditing	$1.2 million, rounded to $1 million $5,775 per audit for 200 audits Airfare Cost = 3 persons × $300 = $900 Hotel Cost = 3 persons × 5 nights × $250 = $3,750 Per Diem Cost = 3 persons × 5 days × $75 = $1,125
Employee Training	$1,000 for 500 workers
Facilities	40,000 square feet at $50 per square foot
Operations	10% of personnel costs
Loans and Tax Rebates	$200 million based on DOE LPO FY 2023 budget
Public School Curriculum	$5,000 per school for 100,000 schools
Job Retraining	$2,000 per worker for 500,000 workers

The number of staff required was approximated by scaling up from the 100 employees within the EU AI Office to account for the volume of gAI activity in the US and the specific directives of this framework.[33] For comparison, the Office of the Comptroller of the Currency, a banking regulatory agency within the

[31] As stated above, the budget categories and estimates were mostly provided by PingPong in response to the prompts above.

[32] "Loan Programs Office Overview," Department of Energy, accessed April 23, 2024, https://www.energy.gov/sites/default/files/2022-04/doe-fy2023-budget-volume-3-lpo-v3.pdf

[33] "Commissions, Staffing, and Financing of AI Office Raises Eyebrows in Capitals," *Euronews*, February 1, 2024, https://www.euronews.com/next/2024/02/01/commissions-staffing-and-financing-of-ai-office-raises-eyebrows-in-capitals.

Treasury Department with 3,509 employees, had a budget of $1.2 billion in FY 2023.[34] The Office of Regulatory Affairs (ORA), which leads all regulatory field activities within the FDA, had 5,121 employees and a budget of $1.4 billion in FY 2023.[35] While the budgets for these offices greatly surpass the initial budget for USOAI, the regulatory domain of these agencies is larger than the current domain of USOAI. As gAI expands into more fields, however, USOAI will have to expand its staff, which will increase costs across the board.

[34] "OCC FY 2024 Congressional Justification," Office of the Comptroller of the Currency, accessed April 19, 2024, https://home.treasury.gov/system/files/266/24.-OCC-FY-2024-BIB.pdf.
[35] "Justification of Estimates for Appropriations Committees," U.S. Food and Drug Administration, accessed April 19, 2024, https://www.fda.gov/media/176925/download.

Appendix G: Implementation plan. *Note: If the recommended policy is not ratified by May 1, the timeline would shift back accordingly.*