Documents for the Record

Committee on Energy and Commerce, Subcommittee on Commerce, Manufacturing, and Trade

"AI Regulation and the Future of US Leadership"

May 21, 2025

Majority

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7. Letter from the California Privacy Protection Agency to Chairman Bilirakis and Ranking Member Schakowsky, submitted by Rep. Mullin.
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11. Letter from the Leadership Conference on Civil and Human Rights to Chairman Bilirakis and Ranking Member Schakowsky, submitted by Rep. Trahan.
12. Statement from Public Citizen.
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14. Letter from National Conference of State Legislatures to Chairman Guthrie and Ranking Member Pallone.
15. Statement from Open Markets titled "Open Markets Lambasts House Committee's Blank Check to Silicon Valley Oligarchs — Open Markets Institute."
16. Letter from ENCODE, Fairplay, Common Sense Media, and Young People's Alliance to Speaker Johnson, Leader Jefferies, Chairman Guthrie, and Ranking Member Pallone.
17. Letter from Public Citizen to Chairman Bilirakis and Ranking Member Schakowsky.
18. Statement from Common Sense Media titled "Statement on House Reconciliation Bill Banning State AI Regulation for 10 Years."
19. Article from Tech Press titled "Critical Questions for the House Hearing Examining a Federal Restriction on State AI Regulation."
20. Paper titled "The False Choice Between Digital Regulation and Innovation" by Anu Bradford.
21. Article from the Washington Post titled "Police secretly monitored New Orleans with facial recognition cameras," submitted by Rep. Veasey.

22. Letter from the Virginia General Assembly Technology and Innovation Caucus to Virginia Congressional Delegation.

the SALON

The Honorable Mike Johnson
Speaker of the House
U.S. House of Representatives,
Washington, DC

The Honorable Hakeem Jeffries
House Minority Leader
U.S. House of Representatives,
Washington, DC

The Honorable Brett Guthrie
Chairman
House Committee on Energy and Commerce
U.S. House of Representatives,
Washington, DC

The Honorable Frank Pallone
Ranking Member
House Committee on Energy and Commerce
U.S. House of Representatives,
Washington, DC

Dear Speaker Johnson, Minority Leader Jeffries, Chairman Guthrie, and Ranking Member Pallone:

As U.S.-based AI-powered startups and small businesses, the undersigned founders are optimistic about AI opportunities for all Americans. We firmly believe AI is a force for good in all sectors of society while also appreciating that new technologies may create novel risks.

Using the power of AI, our companies help small businesses and large, marginalized communities, corporate leaders, farmers, and governments. We are prepared to support thoughtful, balanced, comprehensive legislation that ensures our laws will both promote opportunity and address risk.

Unfortunately, the balanced outcome we endorse has proven unattainable to date, and the future is daunting, with more than 600 AI-regulation bills proposed across our 50 states in 2025 alone. An inconsistent 50-state patchwork of laws will break startups and small companies like ours and undermine early-stage innovation. That's why we support a moratorium on state AI legislation.

A moratorium is an opportunity for a reset. After the moratorium begins, we hope Congress will quickly convene all stakeholders and begin an energetic process that produces clear, consistent standards that reflect American values and are tailored to the realities of building technology at startup scale. We stand ready to engage and support this effort.

Thank you for considering our views.

Sincerely,

Remy Meraz
Zella Life
Los Angeles, CA
ZellaLife

Carlos Gaitan
Benchmark Labs, Inc
San Diego, CA
BENCHMARK LABS

Kyle Shannon
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Las Vegas, NV

Del Smith
Acclinate
Birmingham, AL

Rocio Frej Vitalle
Improving Aviation
Tampa, FL

Daniel Taylor
Bags
Brooklyn, NY

Maria Barrera
Clayful
Davie, FL

Paola Santana
Glass
San Francisco, CA

Erik Cardenas
Zócalo Health
Seattle, WA

Gareth Hood
Hood AI
Happy Valley, OR

Damola Ogundipe
Plural Policy
Atlanta, GA

Michelle Muncy-Silva
Innovative AI Studio
King City, CA

Sean Higgins
BetterYou
Saint Paul, MN

Marisol Rios
Marisol Rios Co.
El Paso, TX

Nico Aguilar
Speeko
Chicago, IL

Ramesh Kumar
Lifewell MD
Port Saint Lucie, FL

Kellye Kamp
SourceKamp
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Edgardo Leija
Nanome
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Bosco Kante
HiiiWAV
Oakland, CA

Kevin Lang
Agerpoint
Durham, NC

Hanzla Ramey &
Brandon Mitchell
WriteSea
Tulsa, OK

Gwyn Chafetz
Create A Buzz Inc.
San Diego, CA

Corin Wagen
Rowan
Boston, MA

Dear Members of the Arizona Congressional Delegation,

We, the undersigned voices representing a diverse range of industries across Arizona, are writing to share our perspective on the evolving conversation around artificial intelligence. While Arizona has taken only limited legislative action to date, we remain mindful of the potential for future state-level proposals that could jeopardize AI innovation, as have been advanced in other states. As AI continues to transform how businesses operate, we believe it is critical to strike a careful balance that addresses risks and ethical considerations while ensuring the regulatory environment supports continued innovation, economic growth, and competitiveness. The lack of a federal framework further complicates a complex and burdensome compliance landscape, particularly for small and medium-sized enterprises that may lack the resources to navigate varying and potentially conflicting requirements across state lines.

As you know, Arizona has enormous opportunity to leverage AI to compete in the global marketplace, via productivity gains, enhanced creativity, and allowing businesses to strategically direct financial resources in the areas that offer the greatest pathways for growth. In addition, modernizing government infrastructure to bring it into the AI age through a federal standard can provide pathways for businesses to offer services that make government more efficient, and demonstrate a roadmap for state and local governments. These actions are critical, as other countries are adopting national policies to promote AI adoption, especially China.

To best position our businesses for success in the 21st century, we urge you to work together in Congress to develop a clear and consistent national framework for the responsible development and deployment of artificial intelligence technologies. A unified federal approach would provide businesses with the predictable regulatory environment needed to foster innovation, encourage investment, and ensure that the benefits of AI can be realized across the United States for all our citizens.

We stand ready to collaborate with you and your colleagues on crafting thoughtful and effective federal legislation.

Sincerely,

Arizona Technology Council
Hon. Dr. Laura Metcalfe
Jonathan Treble, Business Leader and Congressional Candidate

Center for AI and Digital Policy

May 20, 2025

Chairmen Brett Guthrie and Gus Bilirakis
Ranking Members Frank Pallone Jr. and Jan Schakowsky
United States House Energy and Commerce Committee
Subcommittee on Commerce, Manufacturing, and Trade
2322 Rayburn House Office Building, Washington, D.C.

Re: CAIDP Statement for the record: *AI Regulation and the Future of US Leadership, May 21, 2025*

Dear Chair Guthrie, Chair Bilirakis, Ranking Member Pallone, Ranking Member Schakowsky, and Members of the Committee,

We write from the Center for AI and Digital Policy (CAIDP) relating to the upcoming hearing on "*AI Regulation and the Future of US Leadership.*"[1] We offer the following recommendations for this Committee as it considers the appropriate federal policy for AI.

1. **Congress should ensure that AI systems are subject to clear standards for transparency, fairness, and accountability, particularly in high-stakes areas like housing, employment, and credit.** The Committee should aim to introduce legislation that would mitigate the several risks and leverage the opportunity areas set out in the 2024 House AI Task Force Report.[2] The House Report found that AI exacerbates privacy risks and Americans have few means to seek redress from them. Congress should lead with AI policies that seek to encourage innovation AND establish guardrails to protect the American public from AI harms, by encouraging cutting-edge, rights-respecting innovation, and by strengthening America's national security.

2. **US Federal AI Policy should seek to establish baseline safeguards and not preempt state regulation. We urge this committee to withdraw federal preemption of state AI regulation.** The proposal has drawn bipartisan opposition from state lawmakers and state attorneys general. Federal preemption is misguided and doesn't advance a meaningful framework for AI.

[1] United States House of Representatives, Committee on Energy & Commerce, *AI Regulation and the Future of US Leadership*, Sub-Committee on Commerce, Manufacturing, and Trade Hearing, May 21, 2025
[2] Bipartisan House Task Force Report on Artificial Intelligence, 118th Congress, Dec. 2024, pg. 37

States have enacted laws with a surprising commonality targeting the most pressing issues for their constituents. The National Conference of State Legislatures (NCSL) found three legislative trends rising to the top: consumer protection, deepfakes and government use of AI.[3] Kentucky just passed legislation to promote responsible use of AI in state government.[4] Several other states are similarly considering laws relating to the responsible use of AI in government including Texas, Virginia, Arkansas, New Mexico, Mississippi, Nevada, and Wisconsin to name a few.[5]

Instead of shutting down state efforts, Congress should be learning from them. A cooperative federalism model, in which baseline national standards are paired with room for state innovation, would better reflect the urgency and complexity of the moment.

We look forward to your leadership in convening further hearings to ensure that the future of AI technology and American global competitiveness proceeds in path that is participatory, fair, and engendering public trust.

Marc Rotenberg
Executive Director

Merve Hickok
President

Christabel Randolph
Associate Dire tor

Jocelyn Hong
Research Assistant

Mark T. Greene
Research Assistant

[3] NCSL, *3 Trends Emerge as AI Legislation Gains Momentum*, Jan. 23, 2025
[4] Louisville Public Media, *Kentucky Senate passes bill that would regulate the state government's use of AI*, Mar. 6, 2025
[5] NCSL, *Artificial Intelligence 2025 Legislation*, Apr. 24, 2025

COMMUNITY INNOVATION PARTNERSHIP

THE CITY OF CHATTANOOGA TENNESSEE

Dear Members of the United States Congress,

As Mayor of Chattanooga and a member of the Community Innovation Partnership (CIP)—a coalition of municipal leaders committed to advancing responsible innovation—I want to express strong support for federal efforts to establish clear, consistent rules for artificial intelligence (AI).

To best position our communities for success in the 21st century, I urge you to champion federal efforts to establish consistent rules for the development and deployment of artificial intelligence technologies—starting with the preemption of state regulations, which have the potential to conflict with one another and otherwise create an uncertain patchwork of rules across the country. A consistent federal framework would foster innovation by providing a predictable regulatory environment, encouraging investment, and ensuring the benefits of AI can be realized by communities across the country.

The rapid evolution of AI holds enormous potential for local governments. Communities across the country are already putting AI to work in public safety, emergency response, transportation, permitting, and more. AI tools can also help municipalities detect cyber threats in real time, respond faster to breaches, and better protect against bad actors—especially as ransomware attacks on local government systems continue to rise.

But the absence of a clear federal standard creates a patchwork of laws that generates uncertainty for both local governments and their technology partners. Preemption would not only reduce this uncertainty, it would also lay the groundwork for future federal guardrails that are thoughtful, consistent, and responsive to the needs of communities nationwide.

Modernizing government infrastructure to keep pace with AI through a federal standard also opens the door for businesses to deliver innovative, efficiency-enhancing services—and offers a clear roadmap for cities and counties nationwide. Just as important, a consistent federal AI framework should align with existing national initiatives, such as cybersecurity efforts, and support collaboration across all levels of government. This kind of alignment gives communities the confidence to adopt new technologies without the added burden of regulatory uncertainty.

Local leaders across the nation stand ready to work with you to craft thoughtful, future-focused policy that ensures AI strengthens—not complicates—our ability to deliver efficient, effective, local governance.

Sincerely,

Mayor Tim Kelly, Chattanooga TN

May 21, 2025

Subject: Urgent Need for Federal Preemption of State AI Regulations

Dear Members of the Colorado Congressional Delegation,

We, the undersigned chambers of commerce and business organizations representing a diverse range of industries across Colorado, are writing to express our growing concern regarding the increasing number of proposed state-level regulations targeting the use of artificial intelligence technologies.

While we recognize the importance of addressing potential risks and ethical considerations associated with AI, the current trajectory of disparate state laws could significantly undermine innovation, economic growth, and our ability to compete on a national and global scale. Governor Polis and other elected leaders have highlighted concerns around Colorado's recent efforts to regulate AI and the impact that these regulations could have on technological innovation and investment in our state. The lack of a federal framework further complicates a complex and burdensome compliance landscape, particularly for small and medium-sized enterprises that may lack the resources to navigate varying and potentially conflicting requirements across state lines.

As you know, Colorado has enormous opportunity to leverage AI to compete in the global marketplace, via productivity gains, enhanced creativity, and allowing businesses to strategically direct financial resources in the areas that offer the greatest pathways for growth. According to the U.S. Chamber of Commerce, 42% of Colorado small businesses are using AI tools to improve their competitiveness with larger companies and 84% of the small business using AI in our state expanded their workforce and reported profit growth. In addition, modernizing government infrastructure to bring it into the AI age through a federal standard can provide pathways for businesses to offer services that make government more efficient, and demonstrate a roadmap for state and local governments. These actions are critical, as other countries are adopting national policies to promote AI adoption, especially China.

To best position our businesses for success in the 21st century, we urge you to champion federal efforts to establish consistent rules for the development and deployment of artificial intelligence technologies, preempting an emerging patchwork of state laws. A unified federal approach would foster innovation by providing businesses with a predictable regulatory environment, encourage investment, and ensure that the benefits of AI can be realized across the United States for all our citizens.

We stand ready to collaborate with you and your colleagues on crafting thoughtful and effective federal legislation.

Sincerely,

Adams County Regional Economic Partnership (AC-REP)
Colorado Bankers Association
Colorado Business Roundtable
Colorado Competitive Council
Colorado Concern
Colorado Springs Chamber and EDC
Colorado Technology Association
Denver Metro Chamber of Commerce
Jeffco EDC
Northern Colorado Legislative Alliance
South Metro Denver Chamber

May 20, 2025

The Honorable Gus Bilirakis, Chairman
Subcommittee on Commerce,
Manufacturing, and Trade
Committee on Energy & Commerce
2125 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Janice Schakowsky, Ranking Member
Subcommittee on Commerce,
Manufacturing, and Trade
Committee on Energy & Commerce
2322A Rayburn House Office Building
Washington, D.C. 20515

RE: May 21 Hearing on "AI Regulation and the Future of US Leadership"

Dear Chairman Bilirakis, Ranking Member Schakowsky, and Honorable Members of the Subcommittee on Commerce, Manufacturing, and Trade:

Engine is a non-profit technology policy, research, and advocacy organization that bridges the gap between policymakers and startups. Engine works with government and a community of thousands of high-technology, growth-oriented startups across the nation to support a policy environment conducive to technology entrepreneurship. As artificial intelligence is increasingly used, developed, and deployed by startups, Engine has a strong interest in ensuring a regulatory environment for AI conducive to startup success at home and in markets around the globe.

Startups are driving innovation in AI benefitting every corner of the economy—from agriculture to manufacturing, healthcare to education, finance to retail, and more.[1] But policymakers' approach to regulating AI will determine who is able to participate in the AI ecosystem and the speed at which innovations are disseminated to benefit the public. The U.S. has generally followed a model of permissionless innovation,[2] enabling entrepreneurs to build beneficial new products unencumbered by strict, expensive regulatory regimes antithetical to invention, experimentation, and iteration. This approach has made the U.S. tech sector the envy of the world.

But poorly conceived AI regulatory frameworks that are overbroad and over-reliant on ex-ante approaches threaten to undermine U.S. startup competitiveness and innovative capacity. The U.S. must avoid importing such costly frameworks like the European Union's AI Act. According to EU-funded estimates, the EU AI Act will create well over $200,000 in initial compliance costs and

[1] *See, e.g.*, *#StartupsEverywhere*, Engine, https://www.engine.is/startupseverywhere.
[2] *See, e.g.*, Adam Thierer, *Permissionless Innovation: The Continuing Case for Comprehensive Technological Freedom*, Mercatus (Mar. 2016), https://www.mercatus.org/research/books/permissionless-innovation-continuing-case-comprehensive-technological-freedom.

nearly $80,000 in annual ongoing costs.[3] A think tank analysis released shortly after pegged those costs even higher, at nearly half-of-a-million dollars in initial costs.[4] For comparison, a seed-stage startup is working with around $50,000 per month in resources—meaning such costly frameworks can literally take months off of their life.[5]

Individual U.S. states are unfortunately adopting elements of the costly EU approach and are pursuing their own unique AI rules, setting the stage for a patchwork of varying regulations that will steer where startups scale, cause them to degrade the quality of their products, and undermine their competitiveness. Startups have experience with burdensome state patchworks of regulations on issues from HR to data privacy that illustrate the threat to competitiveness that differing rules about the same topic pose for small companies. On data privacy, startups invest hundreds of thousands in privacy compliance, but face $15,000-$60,000 for each time states add or amend their laws.[6] Replicating this patchwork for AI is certain to undermine U.S. leadership.

We appreciate the Subcommittee's attention to this important issue for U.S. AI startups and the recognition—including through recently advanced legislation—that rules for AI being set at a national level is essential for startup competitiveness. We look forward to being a resource for the Subcommittee as you continue to explore AI issues and push to enhance America's innovative capacity. To that end, we have attached a recent report published by Engine below, *Mapping the future: charting the AI ecosystem & a policy blueprint for startup success*, which examines how U.S. startups are building with AI and how policymakers can support their success.

Sincerely,

Engine Advocacy

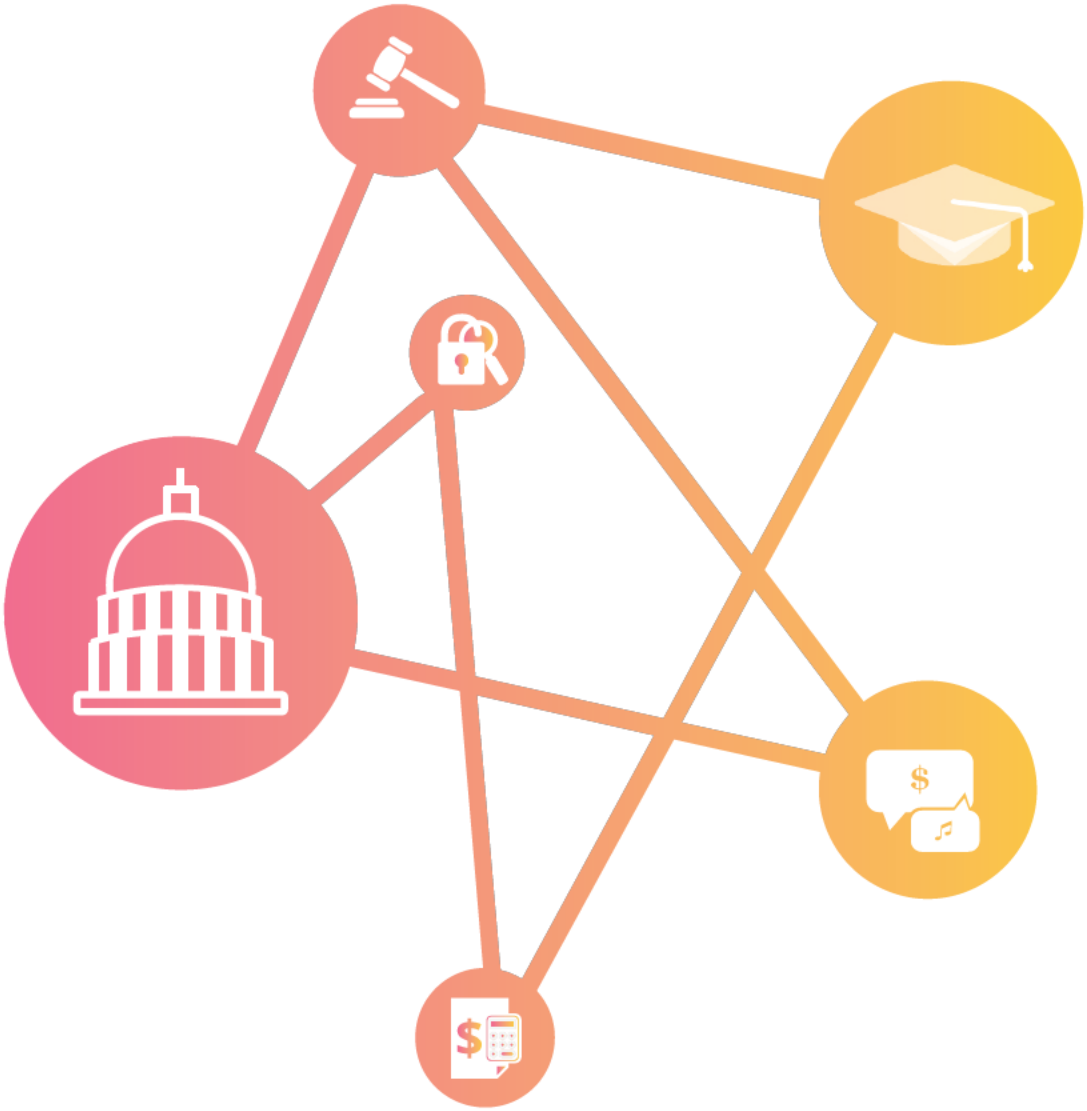
700 Pennsylvania Ave SE
Washington, D.C. 20003
policy@engine.is

[3] Andrea Renda, et al., *Study to support an impact assessment of regulatory requirements for Artificial Intelligence in Europe*, European Commission (Apr. 2021), https://op.europa.eu/en/publication-detail/-/publication/55538b70-a638-11eb-9585-01aa75ed71a1.
[4] Benjamin Muller, *How Much Will the Artificial Intelligence Act Cost Europe?*, Center for Data Innovation (July 2021), https://www2.datainnovation.org/2021-aia-costs.pdf (estimates converted from Euros to U.S. Dollars).
[5] *the State of the Startup Ecosystem*, Engine (Apr. 2021), https://static1.squarespace.com/static/571681753c44d835a440c8b5/t/60819983b7f8be1a2a99972d/1619106194054/The+State+of+the+Startup+Ecosystem.pdf.
[6] *Privacy Patchwork Problem: Costs, Burdens, and Barriers Encountered by Startups*, Engine (Mar. 2023), https://static1.squarespace.com/static/571681753c44d835a440c8b5/t/6414a45f5001941e519492ff/1679074400513/Privacy+Patchwork+Problem+Report.pdf.

Engine

Mapping the future:

charting the AI ecosystem &
a policy blueprint for startup success



May 2025

ABOUT ENGINE

Engine was created in 2011 by a collection of startup CEOs, early-stage venture investors, and technology policy experts who believe that innovation and entrepreneurship are driven by small startups, competing in open, competitive markets where they can challenge dominant incumbents. We believe that entrepreneurship and innovation have stood at the core of what helps build great societies and economies, and such entrepreneurship and invention has historically been driven by small startups. Working with our ever-growing network of entrepreneurs, startups, venture capitalists, technologists, and technology policy experts across the United States, Engine ensures that the voice of the startup community is heard by policymakers at all levels of government. When startups speak, policymakers listen.

Engine

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INTRODUCTION

Artificial intelligence is a foundational technology driving innovation in every corner of the economy. Rapid advances and breakthroughs in AI have drawn policymakers' attention—as evidenced by the flurry of hearings, task forces, executive orders issued, and bills introduced. These breakthroughs have enabled a flourishing ecosystem of startups building AI, building with AI, and using AI to better everyday tasks. As policymakers continue to dive in to varying facets of AI with proposals, guidance, frameworks, and incentives, it is imperative that they have a solid grasp of the breadth and interconnectedness of the AI ecosystem.

> *One of the things that concerns me is when policy and AI are discussed, policymakers only focus on how to regulate big corporations and they unintentionally hurt a ton of businesses and startups that use AI...*[1]
> **- Constanza Gomez, Co-Founder, Sortile, New York, New York**
> ***Sortile is a technology platform designed to identify textile types in order to facilitate recycling.***

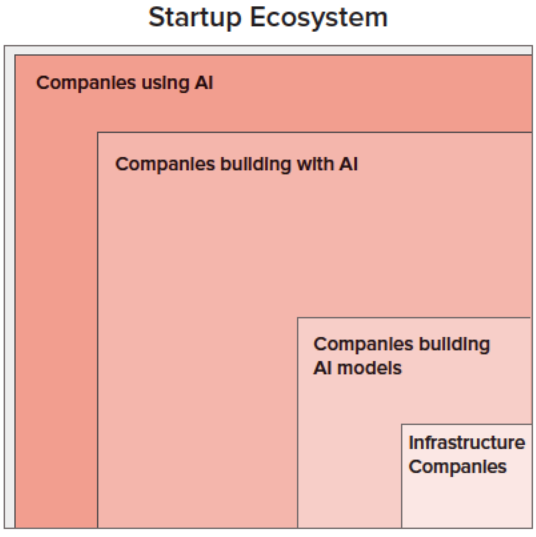
By volume, startups make up the vast majority of the AI ecosystem. But like many technology policy issues, the perspectives of startups can be drowned out by attention on the largest players in an industry.

Startups are building with AI in a few distinct ways. Some startups are building their own machine learning models to perform specific tasks. Most startups are leveraging foundation models—either by licensing from market leaders or accessing open source—to fine-tune and build unique products. Often, startups leverage multiple foundation models, finding some perform better at certain tasks and others better at different tasks. This increasingly describes how startups are building—90 percent of the startups that joined our network in the past year used AI in their main product. And finally, most startups are leveraging others' AI tools as part of their product or to augment basic business functions.

AI is nearly ubiquitous in the startup ecosystem.

Startups are implicated at every level of the AI ecosystem. For example, a startup leveraging the latest foundation model to create a product giving feedback on startups' pitch decks sits in the middle and touches companies up and down the stack. Policies impacting one part of the stack—like rules on deploying AI, or another, like requirements for foundation model development—will reverberate across the ecosystem.

Policymaking in the AI space requires not one bill or one framework, but smart policies across all issues impacting AI developers, deployers, and users. To chart a course forward, policymakers must begin with a strong foundation.



> *Policymakers need a deeper understanding of this space and the differences in the participants, because there is a general lack of knowledge about AI's transformative potential, leading to an overemphasis on worst-case disaster scenarios. They need to know the costs and impacts on smaller firms like ours.*[2]
> **- Vance Reavie, CEO and Founder, Junction AI, Bentonville, Arkansas**
> ***Junction AI is an AI platform that automates marketing, merchandising workflows, and content generation processes for brands and retailers.***

GLOSSARY

There are few simple definitions in the AI space, and the difficulty of defining and scoping AI topics becomes increasingly so as policymakers put pen to paper. Rather than inform legislative text, this glossary is designed to help stakeholders understand and navigate key terms and topics in AI.

AI: Technology that imitates or enhances human capabilities to perform tasks like communicating, reasoning, problem-solving, understanding language, recognizing images, and more.

> The John S. McCain National Defense Authorization Act for Fiscal Year 2019 includes a five-part definition of AI that is relied upon by most federal agencies and other stakeholders.[3]
>
> > (1) Any artificial system that performs tasks under varying and unpredictable circumstances without significant human oversight, or that can learn from experience and improve performance when exposed to data sets.
> >
> > (2) An artificial system developed in computer software, physical hardware, or other context that solves tasks requiring human-like perception, cognition, planning, learning, communication, or physical action.
> >
> > (3) An artificial system designed to think or act like a human, including cognitive architectures and neural networks.
> >
> > (4) A set of techniques, including machine learning, that is designed to approximate a cognitive task.
> >
> > (5) An artificial system designed to act rationally, including an intelligent software agent or embodied robot that achieves goals using perception, planning, reasoning, learning, communicating, decision making, and acting.

Copyright: An intellectual property right designed to benefit the public by incentivizing the creation and dissemination of works by granting creators exclusive rights to their works. Copyright protects the expression of an idea, it does not protect the idea itself or facts.

Compute: The hardware resources—processors (CPUs, GPUs, or TPUs), memory, and storage—that make AI models work, allowing them to train on data, process information, and generate predictions.

Digital replica: Videos, images, or audio recordings that have been digitally created or modified using AI to realistically depict an individual using their Name, Image, and Likeness, and other indicators of identity.

Fair use: A doctrine where copyrighted content may be used without the rightsholder's consent for purposes like criticism, comment, news reporting, teaching, scholarship, or research. Determining fair use involves a four-part test: the purpose and character of the use; the nature of the work; the amount and substantiality used; and the effect on the market for the work.

Fine-tuning: The process of adapting a pre-trained model to perform specific tasks. Rather than training a model from scratch, fine-tuning leverages the general knowledge already acquired by the model during its initial training, specializing it for a developer's specific needs.

FLOPs / FLOPS: FLOP stands for FLoating-point OPeration. A floating-point operation is one arithmetic operation — such as addition, subtraction, multiplication, and division — on a floating-point number. The amount of floating-point operations, or FLOPs, is a measure of how much computational work a model requires to process data and make decisions. Meanwhile, FLOPS — FLoating-point Operations Per Second — measures a computer system's computational performance, quantifying the number of calculations it can perform per second.

Foundation model: Large-scale AI model trained on vast amounts of diverse data, making them adaptable to a variety of tasks. These models serve as the backbone for many AI applications, providing a base level of knowledge that other developers, like startups, can fine-tune for specific uses.

Frontier model: A foundation model considered to be at the leading edge of current capabilities.

Large Language Model (LLM): A type of foundation model focused on natural language processing.

Machine learning: A branch of artificial intelligence where algorithms and models are developed to make predictions based upon data.

Model weights: Numerical parameters learned during training that determine the importance of features in a dataset. Weights shape model behavior making them an essential part of model accuracy and utility.

Open source: Open source has historically described software that "anyone can view, modify, and distribute." In AI, this generally means making the model, or the algorithms, code, weights, and data used for AI development available to the public.

Pre-training: Initial training phase in model development where the model is exposed to a large range of data sources to learn general patterns and information relationships.

Training: Following pre-training, training involves exposing the model to specific types of data to improve its performance or perform a specific task. Training and fine-tuning are sometimes used interchangeably.

AI ESSENTIALS

Artificial Intelligence can be technical, but it is essential that stakeholders have a grasp of the key topics in AI and how they intersect with startups and public policy. These topic-based explainers aim to bridge the knowledge gap, complete with useful analogies and takeaways for both startups and policymakers.

HOW DO NEURAL NETWORKS WORK?

A **neural network** is a computer model that learns to identify complex relationships between input and output data. Structurally, it consists of interconnected layers: an input layer, several hidden layers, and an output layer. Information flows from the input to the output layer through these hidden layers.

Layers are composed of **nodes**, basic information processors. Each node takes a piece of information (input), applies a mathematical function to it, and then passes the result (output) to the other nodes in the next layer. Connections between nodes across layers carry **weights**, numerical values that determine the importance of the transmitted information. The network "learns" by adjusting these weights based on the errors it makes.

You can think of a neural network as a water filtration system. Each layer represents a filtration stage: the input layer is where raw, murky water enters, and the output layer is where clean water exits. Each node is an individual filter unit, where the amount of filtering it performs can be calibrated based on water quality, similar to how weights can be adjusted to amplify the most significant pieces of information. The system fine-tunes each filter to produce the cleanest water possible, much like how a neural network adjusts weights to produce the most accurate outputs.

Training most neural networks involves two main steps. First, the network is given a dataset called **training data**, which consists of examples with known outcomes (labels). Starting with random weights, the network takes examples, makes predictions, compares them to the correct outcomes, and then adjusts its weights to reduce errors. As training progresses, the network's predictions get better and better. This process is repeated for many cycles (epochs) until these adjustments no longer result in significant improvements to the network's performance, at which point the model has **converged**.

After training, the network is tested on a separate pool of data known as **testing data.** This testing phase evaluates the network's prediction accuracy, showing its ability to generalize and handle real-world data outside of training examples.

Data is the lifeblood of neural networks because it fuels their learning process.[4] These networks identify patterns by adjusting weights to highlight relevant information and minimize attention to less important details. Through iterations, the network learns to recognize which features in the data are most important for making accurate predictions. The more comprehensive and diverse the dataset a network trains on, the better it becomes at identifying pertinent information and understanding patterns, which enhances its performance in real-world applications.[5]

For startups in the AI space, access to abundant, high-quality data is crucial. Larger tech companies typically have vast data resources from existing services or partnerships that startups often lack. This lack of data can significantly impede their ability to build models that are accurate and reliable. Therefore, open data initiatives, public-private partnerships, balanced intellectual property frameworks, and uniform regulatory environments play a critical role in helping startups obtain the data necessary to build robust neural networks, foster competition, and drive innovation in AI.[6]

WHAT ARE MODEL WEIGHTS?

As AI systems take in vast amounts of **data**, they have to determine which characteristics of the data are important. For example, if an AI model is being trained to differentiate between dogs and cats, the model will place more importance on relevant distinguishing features (like the shape of the ears or length of nose) and less importance on less relevant features (like the number of legs or color of fur).

These distinctions are reflected in **model weights**, which are numerical parameters that determine the importance of features in a dataset. Highly complex AI systems can have billions of weights — like GPT-3, which has over 175 billion model weights.[7] You can think of weights as volume knobs that control how much influence each input (like an image detail or a text entry) has on the final decision by the AI. During training, these weights are continually adjusted as the model learns from the data, refining its accuracy by emphasizing and de-emphasizing certain inputs.

Model weights play a crucial role in determining the outputs of AI systems and access to model weights can enable an individual to make beneficial changes to the model (addressing a biased result or creating a new product) or to make malevolent changes (allowing the model to create harmful or illegal content). For certain models, like one designed for fraud detection, securing model weights is tantamount because access to weights could enable criminal circumvention.

Conversely for general-use models, access to model weights allows for transparency and enables innovation. These models, often called **open source** or **open-weight models**, are pre-trained models with publicly available weights. Since the functionality of AI relies primarily on the configuration of weights, pre-trained models enable startups to sidestep the significant data and **compute** resources required for training AI from scratch. Furthermore, open-weight models promote transparency and allow for more thorough scrutiny by researchers and policymakers,[8] helping address many core concerns related to AI outputs like biases or hallucination.

Policymakers have highlighted these tradeoffs, for example, the Biden Administration's AI executive order directed the study of such models.[9] The resulting report highlighted the benefits — for innovation, research, and transparency — and risks of abuse.[10] The report concluded restrictions were not appropriate, but open source and access to model weights promises to be subject of AI policy debates into the future.

WHAT IS COMPUTE AND HOW IS IT MEASURED?

If you wanted to haul large amounts of water from a well, you would (at one point in history) need a resource, like a horse, to pull the load. You would measure how much weight the horse can pull per minute in terms of "horsepower." In the world of AI, the resource required to make models work is **compute**, and it's measured in **FLOPS**.

Compute refers to the hardware resources that make AI models work, allowing them to train on data, process information, and generate predictions. Without sufficient compute, even the most sophisticated models struggle to perform efficiently. The implications for startups and policymakers are twofold. First, compute is scarce and expensive, meaning startups are constrained by their access to compute. And second, given compute's role in the effectiveness of models, policymakers are including compute-based thresholds in regulatory frameworks they are pursuing.

Compute involves the processors (CPUs, GPUs, or TPUs), memory, and storage needed to perform the numerical calculations for AI models. These resources are especially critical during **training**, where models adjust internal parameters (called **model weights**) based on patterns found in massive **datasets**. Having more compute means models can more quickly and effectively learn from data, leading to more accurate predictions, improved decision-making capabilities, and the ability to handle more complex tasks. Inadequate compute, on the other hand, limits a model's complexity, slows down training, and can hinder innovation.

We can measure both the computational work required by AI models, as well as the theoretical capacity of compute resources using units with confusingly similar names — **FLOPs** and **FLOPS**.

FLOP stands for FLoating-point OPeration. (A floating point number is a standardized format in computing to precisely and uniformly encode large and small values. A floating-point operation is one arithmetic operation — such as addition, subtraction, multiplication, and division — on a floating-point number.[11]) The amount of floating point operations, or FLOPs, is a measure of how much computational work a model requires to process data and make decisions.

The higher the FLOPs, the more complex the model and the more compute it demands. Older models may require trillions (or 10^{12}) FLOPs, but today's leading AI models demand compute on a massive scale due to the enormous datasets they process and the intricate neural networks they utilize. For example, training a model like GPT-4 can require septillions (or 10^{24}) FLOPs of compute.[12]

Meanwhile, FLOPS — FLoating-point Operations Per Second — measures a computer system's computational performance, quantifying the number of calculations it can perform per second. It is a measure for how powerful a given piece of hardware is or its theoretical capacity — the higher the FLOPS, the more powerful the hardware.

Both measures are used in AI regulatory efforts. For example, the Biden Administration Executive Order on Artificial Intelligence last fall included disclosure requirements for models trained with more than 10^{26} FLOPs of compute and for compute clusters with theoretical capacity of more than 10^{20} FLOPS.[13] Europe's AI Act and a (since vetoed) controversial California bill also use compute-based thresholds.[14] And given the financial costs of large quantities of compute, some policymakers have also included cost-of-compute-based thresholds in regulatory efforts.

It's unclear whether these thresholds — which are arguably arbitrary — will hold up over time. Technological improvements in both models and in compute will lead to more capable models with lower compute requirements and lead compute costs to fall.

At present, compute remains a main cost center for startups in AI (and for startups with their own compute resources, associated costs like energy and cooling). Most startups lack the resources to invest in their own infrastructure and must rely on cloud services to access the necessary compute power. That means startups often compete and approach AI development on a different plane, either developing niche models to perform specific tasks (as opposed to a large language model), or **fine-tuning** others' pre-trained models. Larger companies by comparison can innovate more freely with in-house compute or even afford to invest in custom hardware, such as Tensor Processing Units (TPUs).

Policymakers are now exploring ways to level the playing field by ensuring that startups can access the compute they need to innovate. Some proposed solutions include the National AI Research Resource, providing access to high-performance compute resources and datasets for academic researchers and smaller companies — helping to democratize access to the tools necessary for AI development for a more equitable and innovative AI ecosystem.[15]

WHAT ROLE DOES DATA PLAY AND WHERE DOES IT COME FROM?

Data is a fundamental resource that powers all AI systems. There are different types of data that are utilized for different functions in AI development, and varying sources of that data. Both of these can be highly context-dependent on stages of development, resources that the developer has on hand, and the task(s) that the model is being trained to perform. Legislators, regulators, and rightsholders each can impact the availability and types of data used for AI, and shape which companies can participate in AI innovation in the first place.
AI systems require not just large quantities of **data**, but data that's properly structured, labeled, and divided for different phases of development. The specific requirements depend on the model's purpose and learning method.

In **supervised learning**, we give the AI system examples with clear "answers" or **labels** — imagine teaching a child by showing them pictures of animals and telling them "this is a cat" or "this is a dog." For a medical AI, this means X-rays must be marked by experts exactly where fractures appear to teach the system what a broken bone looks like and where to find it.

In contrast, **unsupervised learning** uses **unlabeled** examples, allowing the AI to find patterns on its own. This is like asking someone to sort a drawer full of socks without telling them how; they might stumble across groups by color or size as the most effective, thereby 'learning' the groups. In AI applications, this can help discover natural groupings without predefined categories.

Meanwhile, **semi-supervised learning** combines both approaches, using a small amount of labeled data together with larger amounts of unlabeled data. This is particularly valuable when labeling is expensive or time-consuming, like in medical imaging where specialist doctors would need to annotate thousands of images.

Different stages of AI development require datasets that serve distinct purposes. **Training data** teaches initial patterns, while **testing data** — kept entirely separate — verifies whether the AI can handle new situations. For medical imaging, this means not just training on thousands of fracture X-rays, but testing on a separate set of cases to ensure the AI can spot breaks it hasn't seen before.

For data, quality often matters more than quantity. Good training data needs to be accurate, well-labeled, and representative of real-world scenarios. A customer service AI tool trained mostly on routine queries will struggle with complex problems, even if trained on millions of examples. Similarly, an autonomous vehicle AI model learns more from a few thousand carefully annotated hazard scenarios than millions of normal driving situations.

Such specialized data can originate from various sources. Some datasets are publicly available, such as government weather data or academic research. However, many valuable datasets are often collected from real-world interactions, high-quality sources, or must be curated specifically for the intended AI application. Large technology companies generally hold a competitive advantage given the significant differences in the resources available to curate those datasets, the ability to negotiate licenses or fight lawsuits with rightsholders, and the access to large volumes of highly relevant data collected through user interactions.

AI companies source data from a range of sources, including from themselves or their users. Information directly collected from users, or **first-party data**, can be especially useful for improving models because it captures real-world interactions and is continuously updating. For example, an AI product designed to detect elderly people falling benefits from such data to differentiate falling versus sitting in a chair. Large companies with lots of users have access to more interactions that help improve their models. In contrast, startups typically don't have large user bases or multiple services generating continuous data streams. Data privacy rules and regulators also factor in here, with the Federal Trade Commission last year warning AI companies against changing their terms to leverage user data for AI training.[16]

Many companies large and small **ingest** data from the open web or from open data sources. **Open data sources** are freely accessible datasets that anyone can use, often maintained by public institutions, governments, or nonprofits. These sources provide essential resources for startups that lack extensive proprietary data. The non-profit Common Crawl,[17] for instance, maintains a public web archive of over 9.5 petabytes of data, accessible to anyone–from small startups to big players such as Stable Diffusion, who use filtered versions of this data through another nonprofit organization, LAION.[18]

Original, expressive content — from everyday folks and the most well-known organizations — is plentiful online and therefore throughout many datasets scraped from the public corpus. Large rightsholder organizations and well-known celebrities have alleged ingesting this data for training purposes amounts to copyright infringement and filed lawsuits against the largest AI companies and startups alike.[19] Some large companies have negotiated agreements

to license data for AI from these entities in response.[20] Those deals can run into many millions of dollars annually, beyond the budgets of startups, meaning startups might not be able to participate in AI innovation. Ingesting data — facts about the world — to learn is not an infringing practice (see below section on Copyright for further discussion of this topic), and policymakers will need to support this understanding if the AI ecosystem is to remain competitive. (Outputs, on the other hand, can sometimes be infringing, and if stakeholders are worried about AI diluting human creativity, considering whether outputs are infringing is a key part of the solution.)

Other types of data used for AI include **custom datasets** compiled to tailor the data to meet specific industry needs. For example, an autonomous vehicle company might collect video footage of different driving scenarios, then label objects like pedestrians, cars, and traffic signs in each frame. This purpose-built dataset ensures that the data aligns precisely with the company's goals, but it requires significant time, resources, and infrastructure to organize and label at scale.

To aid where this real-world data is scarce, some companies may use **synthetic data** — artificially generated data that mirrors real-world patterns. Rather than collecting thousands of real-world images of rare driving scenarios, a company could simulate various traffic conditions, weather patterns, and road layouts and record that data. This approach can help expand the dataset quickly and provide diverse examples that might be challenging to capture in real life. However, recent research warns models may become overly tuned to synthetic patterns that do not align with real-world data, resulting in "model collapse" when training exclusively on synthetic data.[21]

Policymakers — on issues from data privacy to intellectual property rights — have wide remit to impact the competitiveness of the AI ecosystem (or lack thereof), depending upon the actions they take when it comes to data and AI. They should seek a balanced and competitive landscape that ensures small startups with few resources can continue to innovate, grow, and compete.

HOW DOES COPYRIGHT INTERSECT WITH AI?

Startups are increasingly innovating in AI, but unresolved questions about copyright hang like a sword of Damocles over the entire AI ecosystem. Numerous ongoing AI lawsuits turn on whether including copyrighted content, such as written works, images, or music, in datasets to train generative AI models constitutes infringement.[22] How these cases are resolved will determine the pace of AI innovation and whether startups can afford to participate in the AI ecosystem at all.

Much of the current wave of innovation in AI is based upon closed or **open-source foundation models** that startups often **fine-tune** to perform a specific task. These models are trained on a large corpus of training data inputs so that they can accurately learn about the world and document the relationships between words, pixels, tones, and more. Many large models learn from what is publicly available on the Internet. And since most content created is copyrightable — including anything expressive, such as articles, songs, and even meaningless tweets[23] about brushing your teeth — this training data may include copyrighted content.

Copyright law is designed to benefit the public by incentivizing the creation and dissemination of works through granting creators exclusive rights to their works. While copyright protects the expression of an idea, it does not protect the idea itself or facts. Additionally, the fair use doctrine allows copyrighted content to be used without the rightsholders' consent for purposes like criticism, comment, news reporting, teaching, scholarship, or research when the application is weighed in favor of fair use. These limitations and exceptions are key to understanding how debates around copyright and AI should be resolved.

For startups, it is crucial that using copyrighted content as inputs does not constitute infringement and falls under fair use.[24] Generative AI models learn from inputs similar to how humans learn from articles, books, or art to produce a new creation. AI models use inputs to understand and interpret concepts. This learning process does

not result in the AI model directly copying the content it is trained on, but instead documenting relationships and patterns as vectors. Once training is finished, a model can produce outputs, like new writing or images, informed by those relationships.

You can think of an AI model as a composer who takes tempos, rhythms, and chord progressions from various known classical pieces to create a new composition. Similar to how the composer pulls and combines existing musical elements to generate new, original music, AI models learn from and interpret existing creative content to then produce a new output. (AI models produce unique creations, but users can still prompt outputs that are materially similar to copyrighted material, often despite safeguards designed to prevent it.)

If inputs are deemed to be infringing, courts will need to determine whether fair use justifies using copyrighted content in training data. The fair use doctrine allows for certain unauthorized uses of copyrighted content, and when evaluating a fair use defense claim, courts weigh four factors: the purpose and character of the use, the nature of the copyrighted work, the amount and substantiality of the portion use, and the effect on the market.

In the context of AI training, these factors support an applicable fair use defense. The purpose and character of AI's use of copyrighted content is transformative because it does not replicate the original content but generates new outputs with added character or a further purpose. Regarding the nature of the work, AI processes creative inputs in a way that transforms it into new content. While AI models may ingest entire copyrighted works, they do not simply replicate this content in its entirety in the output. Finally, AI's use of copyrighted content is unlikely to harm the market for the original work because AI developers don't directly profit from the distribution of the generated content. Instead, they monetize the tools that enable users to generate outputs.

While these fair use factors are generally favorable for AI developers, the application is not always straightforward, and different cases can lead to varying outcomes. Fair use is a fact-specific, case-by-case determination made by the courts. For AI companies, particularly startups, this legal uncertainty poses a significant challenge. The risk of facing a copyright infringement suit can result in costly litigation and could stifle innovation.

Rightsholders — like publishers, authors, record labels, and others — have construed AI training as infringement, saying it constitutes an unauthorized use of their works. Many have sued AI companies of all sizes, ranging from startups to market leaders. If the rightsholders prevail, it will upend the AI innovation ecosystem.

Under such an environment, AI developers would need to seek licenses before they can begin development. In response to the current legal uncertainty, larger AI companies are opting to make licensing agreements for copyrighted content to avoid potential lawsuits or settle ongoing litigation.[25] This is unworkable for startups and threatens smaller companies' participation in the AI ecosystem. Licenses would be prohibitively expensive for startups and negotiations unbalanced given the comparative size difference between small startups and large rightsholder organizations. This would make it both difficult for startups to fine-tune existing models with anything besides their own data (which is often in short supply as new entities), and make it near impossible for a new startup to challenge existing players in frontier model development.

> *For smaller companies like us, what happens with the copyright litigation for the largest entities is going to trickle down and impact what we are doing. We are concerned about how it will affect us, but at the end of the day, we cannot spend large amounts of money on it because we don't have the same access to capital that these larger AI companies do.*[26]
>
> **- Chandler Malone, Co-founder and CEO, Path, New York, New York**
>
> *Path provides AI test-prep tools for standardized exams and professional certifications.*

Moreover, requirements to license training data would remake the ecosystem most startups build upon. Licenses will increase costs for frontier model development, which will be passed on to startups that rely on access to them. Open source development will be harmed as open source developers are unlikely to release their models for free and with documentation that reveals how they were trained and what they 'know.'

To promote innovation and maintain a competitive AI ecosystem, startups need legal clarity to move forward with AI development without the fear of facing costly copyright infringement lawsuits related to training data.

WHAT IS A FOUNDATION MODEL?

Foundation models are large-scale AI models trained on vast amounts of diverse **data**, making them adaptable to a variety of tasks. These models serve as the backbone for many AI applications, providing a base level of knowledge that other developers, like startups, can refine for specific uses. You can think of foundation models as a handyman, individuals that are generally useful for a wide range of home improvement tasks, but with a bit more specialized training can become very good at specific tasks, like plumbing or electrical.

Rather than developing an AI system from the ground up, companies can leverage foundation models to accelerate innovation, reducing both costs and complexity. These models can be closed or **open-source** — for example, OpenAI's GPT-4 (closed) and Meta's LLaMA (open) are both foundation models.[27] Through techniques like **fine-tuning**,[28] foundation models can be adapted for specific applications, like reviewing pitch decks,[29] improving public services,[30] or enhancing the capacity of small businesses.[31]

Foundation models streamline AI development by providing a starting point, saving startups from the immense resource burden of training a model from scratch. Training a foundation model requires vast **computational** resources, often amounting to millions of dollars in cloud costs and specialized hardware. Most startups do not have access to those sorts of resources. Even if they did aim to build their own foundation model to then fine-tune, it would likely be out of date by the time they finished training, based upon the rapid increases in performance in models from leading AI labs.[32] By using a foundation model (or multiple), developers can focus on optimizing performance for their unique needs, significantly lowering barriers for startups to bring AI-based products to market.[33]

Policymakers' approach to AI regulation — and to foundation models in particular — will impact far beyond just the foundation model developers themselves, given the ecosystem of startups and others building upon them.[34] For example, AI rules that incorrectly assign liability to developers of foundation models rather than malign actors (who misuse models to break the law or commit antisocial behaviors like creating misinformation) will undermine the availability of those models. Developers will not want to be liable for actions of others that they do not have control over and will restrict access to their models, potentially harming startups building upon them. This disincentive will be particularly acute for open-source models because open source developers lack formal relationships with and awareness of those who use and build with the technology they make widely available.[35]

WHAT ARE TRANSFORMERS?

Humans don't make very good multitaskers, but the same isn't true for AI. Recent innovations in AI have enabled AI models to quickly and efficiently analyze massive amounts of data in parallel, meaning they process different pieces of inputs at the same time, rather than step-by-step like older models. These AI models are called **transformers**.

Transformers are far faster than traditional models, enabling AI systems to understand the relationships between different pieces of data — whether that's words in a sentence, pixels in an image, or even chunks of code. Originally designed for tasks like language translation and text generation, transformers have since expanded their reach to other fields like computer vision and even code generation.

Most leading AI models today are transformers — it's the "T" in ChatGPT, for example — and startups are leveraging transformers to deploy AI solutions that scale, work faster, and use fewer resources — key advantages when budgets and timeframes are tight.

Transformers' efficiency lies in their design. They use a **self-attention** mechanism to focus on different pieces of information within the data to understand relationships among them; **positional encoding** to keep track of the order of data; and an **encoder-decoder** structure, where one part of the model processes input data (the encoder) and the other generates outputs (the decoder).

If we were translating "Humpty Dumpty sat on a wall" into Spanish, those elements of the transformer model would each play a role. As data was being encoded, **self-attention** would capture the relationship between "sat" and "wall." Even though that entire phrase would be processed at the same time — that is, in parallel — **positional encoding** would keep track of the order of the words. Finally, the **decoder** would generate the output: "Humpty Dumpty se sentó en una muralla."

Transformers are adaptable to a wide range of tasks, and a similar process would follow if we were processing an image of Humpty Dumpty, except with pixels instead of words. The ability to use one model for tasks across multiple modes — like text, images, or other media — can help reduce time and development costs compared to older models created for each task.

WHAT IS OPEN SOURCE?

Open-source software is in just about every tech product in existence, from your phone, to your car, to your refrigerator. It has led to orders-of-magnitude reductions in costs to start a company, helped improve security, and fostered innovation.[36] In many policy conversations about AI, the term "open-source" often comes up, with similar implications for startups, but there aren't yet the same conventions about what exactly open-source AI entails.

Open source has historically described software that "anyone can view, modify, and distribute."[37] In AI, this generally means making the algorithms, code, weights, and data used for AI development available to the public. This approach facilitates collaboration and innovation among researchers, developers, and startups.

But openness in AI generally isn't binary — fully closed or fully open. Instead, some open-source models embody a philosophy of full transparency by releasing all aspects of the model, while other developers retain some resources as proprietary information, only releasing a combination of the pre-trained **model weights**, code, or datasets. Further, unlike open-source software, which has a well-developed set of licensing norms,[38] open-source AI is less standardized. Some open-source AI resources come with restrictive licenses that prevent their use for, e.g., commercial use or distribution (which make them comparatively less useful for startups).

Open-source models are crucial for startups because they reduce the need to develop AI models from scratch. Training AI models requires vast amounts of data, storage, and computational capabilities, which startups typically do not have. Having access to pretrained models and their weights enables startups to build on and adapt models to their needs through a process called **fine-tuning**. This accessibility accelerates innovation by drastically reducing costs and reducing barriers to entry for startups.[39] Additionally, it enables startups to build better products by enabling them to focus their limited resources on their true innovation rather than foundational technology.

Policymakers are currently evaluating the benefits of promoting open weights to foster innovation, and it's critical that they strike a careful balance in their regulatory approach to avoid imposing excessive burdens on startups or undercutting a key path for them to innovate in AI. The Federal Trade Commission even recently weighed in to underscore the benefits for startup competitiveness of open-weight models.[40] But openness can get caught in the crosshairs of overzealous regulation. For example, proposals like California's recently-vetoed SB 1047 are aimed at regulating AI model development but would make model developers responsible for future (mis)uses of the model.[41]

Under that arrangement, no developer would open source their AI models to others, because they could be held accountable for actions they had no control over.[42]

Concerns about potential misuse merit attention, such as malicious actors exploiting open models to develop harmful technologies, but these risks are inherent to AI—and all technology—broadly and not specific to open-source systems.[43] In fact, there are ways that open source can actually enhance AI safety by allowing a bigger and more diverse group of developers to use the technology and identify problems. In contrast, "closed" models place the burden of identifying vulnerabilities and biases solely on the original developers, potentially increasing the risks of adversarial attacks or unethical practices.

Open-source AI — or AI systems developed using open-source resources — should not be subjected to special or additional rules simply because they're open-source. The inherent risks of AI systems are similar, whether they are "open" or "closed," and regulations should be specifically tailored to their use. Supporting open-source AI not only means supporting startups but also contributes to the broader advancement of AI technologies.

> *Without open-source models and tools when we started, we would have been years behind on deployment. [...] The real innovation comes from how these models are fine-tuned and applied to specific industries. [...] These tools are crucial for startups, enabling us to adapt, innovate, and bring solutions to market faster.* [44]
>
> **- Lauren McCullough, CEO and Co-Founder, Tromml, Durham, North Carolina**
> *Tromml is an AI-driven platform designed to deliver tailored insights for the auto parts industry.*

WHAT IS FINE-TUNING?

Fine-tuning is the process of adapting a pre-trained model to perform specific tasks. Rather than training a model from scratch, fine-tuning leverages the general knowledge already acquired by the model during its initial training, specializing it for a developer's specific needs. For example, OpenAI's GPT-4 is a generalized large language model capable of performing a variety of tasks, ranging from writing essays to planning parties. Fine-tuning involves taking a model like GPT-4 and adapting it for a particular use, such as creating e-commerce product descriptions.

The process of fine-tuning is similar to training an AI model; however, instead of starting with random weights, fine-tuning uses the weights of a model that has already learned general patterns from a large and diverse dataset, often available as open-source or open-weight models. The process begins by gathering a dataset specific to a new task. To continue the metaphor from the earlier section on foundation models, this would be like sharing plumbing handbooks and YouTube videos to prepare your handyman to repair a bathroom drain.

As a startup-specific example, fine-tuning a model to create e-commerce product descriptions would involve collecting numerous examples of product descriptions, sales statistics, and order histories. This dataset is used to pass examples through the model, which adjusts its internal weights to learn patterns unique to this task. As the model learns from the new data, it specializes its knowledge, becoming especially proficient in the task at hand.

Startups fine-tuning existing models to circumvent the high costs and complexities of building an AI model from scratch. This approach allows them to sidestep the initial training phase, which consumes vast amounts of data and compute resources, focusing instead on innovating with existing models. Fine-tuning not only cuts costs and saves resources but also can reduce risks related to bias and user data privacy, as it leverages models trained on diverse, high-quality data. Overall, fine-tuning democratizes AI development, enabling startups to build innovative AI solutions that compete effectively with larger incumbents and address unique service gaps.

Fine-tuning, which relies on access to pre-trained models and model weights, is deeply intertwined with **open-source** AI. To foster innovation powered by fine-tuning, policymakers should also support open-source initiatives. As an additional benefit, open-source and open-weight models can actually make AI safer by attracting testing and input from researchers and developers worldwide.

POLICY LANDSCAPE:
HOW ARE POLICYMAKERS APPROACHING AI?

Policymakers in state legislatures, Congress, and around the world have put forward a number of varying proposals touching nearly every aspect of the AI ecosystem. The number is dizzying, too—with U.S. states putting forward over 900 bills touching AI in some way through the first four months of this year alone.[45] There are several key themes to these efforts—like safety, content, and national security—that are worth breaking down in the context of their likely impact on startups.

AI SAFETY

Many AI rules in place or being contemplated by policymakers focus on potential harms that could arise from AI, whether near-term (like discrimination), or far-off (like killer robots). Nearly all of the approaches to these issues involve pre-market requirements and restrictions, like independent audits, risk assessments, certification, or licensing. Such frameworks can impose steep costs and pose clear problems for startups.

Many AI frameworks categorically impose obligations for developers, deployers, or end users. For example, the European Union's AI Act,[46] Colorado's AI law,[47] many proposed state laws, and rulemaking in California are each primarily designed to regulate "high-risk" AI used for "consequential decisions."[48] These categories include AI impacting education, employment, finance, lending, housing, healthcare, and more.

Assigning obligations by category can make sense in the abstract, but often becomes overinclusive or even duplicative of existing law. For example, an AI tool that helps schedule a job interview and an AI tool making a hiring decision are subject to the same obligations. And an adverse outcome—like racial discrimination—is already subject to scrutiny under existing law and would be violative of civil rights laws.[49] Moreover, the benchmark of comparison matters. Humans have biases and informed use of technology can actually help to mitigate them and improve outcomes.

A smaller, yet very impactful set of proposals is focused on "existential" risks potentially arising from the most advanced "frontier" AI models. An example of such a framework that gained much attention in 2024 was California's SB 1047.[50] That bill would have regulated model development by requiring a safety determination at the outset and then held developers liable for meeting it—disincenting model development and the availability of open-source AI models. Even though the bill was aimed at only the most resource-heavy models, it would have rippled through the startup ecosystem since those are the foundation models startups are leveraging to innovate in AI.

> *...a lot of amazing solutions that society is coming to rely on that wouldn't be possible without AI. It's important for policymakers to be careful when thinking about how to handle technologies that are still evolving.*[50]
>
> **- Laura Truncellito, Founder, Enployable, Tysons, Virginia**
> *Enployable is AI-powered platform designed to unlock hidden talent and address labor shortages in the construction, energy, transportation, and tech sectors through two-way matching between employers' missions and cultures and job candidates' values, beliefs, and soft skills.*

CONTENT

Policymakers are concerned with both inputs—content used to train AI models—and outputs—content generated by AI models. Both will impact how AI models are developed, who can use them, and for what end uses. On inputs, there is a fierce debate over the inclusion of copyrighted content in AI training data. Large rightsholder organizations, authors, artists, and others have sued alleging that the inclusion constitutes infringement. Policymakers have generally waited to act on this front, not wanting to get ahead of the courts. However, they are advancing requirements for developers to disclose training data—including the enumeration of copyrighted or potentially copyrightable materials.[52] Outside of the clear trade secret and competitiveness implications for developers, such requirements would add significant costs to model training while exposing startups to potentially ruinous litigation.

On outputs, policymakers have put forward a number of proposals that would create potential liability for AI-generated content and for content-hosting platforms—both of which could include startups. One proposal in Congress and several states would create a new intellectual property right for individuals' Name, Image, and Likeness (NIL), set up a notice-and-takedown regime, and enable lawsuits against individual creators, AI companies, and the content hosting platform for creation and dissemination of unauthorized "digital replicas."[53] Related proposals create watermarking requirements for generated content, including some that require those watermarks to be immutable (which may be technically infeasible).[54] Most of the proposals are responding to AI-generated "deepfakes" or "digital replicas,"[55] but they lack sufficient safeguards for protected uses—like parody—and recognition of innovative or benign uses—like sending a personalized video message to a customer thanking them for making a purchase.[56]

One area of clear harm that policymakers want to address is the distribution of non-consensual intimate imagery (NCII), including AI-generated NCII. One federal proposal that has momentum is the Tools to Address Known Exploitation by Immobilizing Technological Deepfakes on Websites and Networks (TAKE IT DOWN) Act, which would criminalize the publication of NCII, including imagery generated by AI, and require that Internet platforms remove it within 48 hours of being notified of the content.[57] This targeted bill has less potential for unintended consequences for startups, since the vast majority of Internet platforms already take steps to remove pornographic content and do not wish to host this type of content.

NATIONAL SECURITY

AI is a foundational and powerful technology that can be used for many purposes, including both military and commercial uses, meaning leadership in AI innovation is geopolitically important. Accordingly, many policymakers are focused on U.S. leadership in AI and have leveraged or explored leveraging export controls and other restrictions on key technologies. For example, earlier in 2025, the U.S. put forward a "Framework for AI Diffusion," that regulates the diffusion of chips needed for AI development and model weights for certain closed models.[58] That framework sees export controls imposed by "tiers," with most countries subject to restrictions—including neighbors, top trading partners, and North Atlantic Treaty Organization (NATO) Allies. Policymakers have also explored restrictions on open-source models to prevent their use by individuals in other countries.[59]

The U.S. should lead in AI development, but poorly calibrated export controls are likely to backfire in the long run.[60] Restricted countries will not idly accept their exclusion from access to the most advanced technologies. Non-U.S. supply chains will be developed, creating a market for technologies hailing from adversarial nations. Eventually, innovators in the U.S. and around the world will be building with those tech products. Instead, maintaining global sales of leading U.S. AI technologies is essential to securing U.S. AI leadership, promoting cycles of investment in the AI ecosystem, and attracting the top talent to build in America.

RESOURCES

Innovation in AI is a resource-heavy endeavor with needs for expensive data, compute, and technical expertise. Adoption of AI can similarly be a barrier for government and conventional small businesses alike. Policymakers both in the states and at the federal level have conceived efforts to address these issues. For example, both federal agencies and state governments have set up programs to provide compute and AI-ready data sets to students, researchers, and startups.[61] Federal and state governments have made steps toward government adoption, and Congress has advanced bills to provide guidance for AI adoption to conventional small businesses.[62] Federal agencies have also developed voluntary guidance and best practices for AI development.[63] Taken together, these efforts can improve the competitiveness of startups—directly, by growing the talent pool, and by helping to create a market for their AI products.

THE PRO-STARTUP POLICY AGENDA TO POWER AI INNOVATION

Policymakers need to support pro-startup policy if they want a world-leading AI ecosystem made up of U.S. companies building AI, building with AI, and using AI to better everyday tasks. AI is a foundational technology that is implicated in a range of policy issues impacting the competitiveness of startups and the speed of innovation. Policy to power AI innovation, then, is not accomplished with one bill or one framework, but instead requires smart policies across all issues impacting AI developers, deployers, and users.

Startups are driving innovation in AI benefitting every corner of the economy—from agriculture to manufacturing, healthcare to education, finance to retail, and more. But policymakers' approach to regulating AI will determine who is able to participate in the AI ecosystem and the speed at which innovations are disseminated to benefit the public. The U.S. has generally followed a model of permissionless innovation,[64] enabling entrepreneurs to build beneficial new products unencumbered by strict, expensive regulatory regimes antithetical to invention, experimentation, and iteration. This approach has made the U.S. tech sector the envy of the world. But poorly conceived AI regulatory frameworks, that are overbroad and over-reliant on *ex-ante* approaches threaten to undermine U.S. startup competitiveness and innovative capacity.

> *I come from a regulatory background, and I know regulation in the AI space is coming. But regulation needs to be done with startups and entrepreneurship in mind, rather than big corporations. If not, there will be a pause in AI growth and development following the regulation implementation, as small businesses will have to jump through more hurdles to get their ideas off the ground. There must be space for R&D and innovation within the regulation to prevent the stalling of AI growth, as well as resources to help startups with the increased expenses associated with compliance.*[65]
>
> **- Darryl Keeton, Founder and President, Sensagrate, Scottsdale, Arizona**
> *Sensagrate is a software platform that leverages cameras, LiDAR, radar, and other sensors to monitor traffic and improve safety.*

To address potential harms without burdening innovation, any regulation that policymakers pursue should be outcome-focused, begin from a position of existing law, and target bad actors. Many potential harms associated with AI are already illegal,[66] and enforcing or enhancing those protections is the most straightforward way to address those concerns without new, duplicative, and burdensome regulators and frameworks.

AI also doesn't stop at state or even national borders. Policymakers must act to avoid a state patchwork of varying or conflicting AI rules and take steps to avoid a global patchwork of incongruous, competing approaches. States and localities can (or even should!) take steps to encourage AI investment, research, and development, but must avoid enacting their own unique AI rules. A patchwork of varying rules will burden startups, slow down innovation, and undermine U.S. AI leadership.

Winning the AI race can be accomplished by pursuing a policy agenda that unleashes innovation, encourages investment, creates clear rules, and opens markets, guided by these realities:

STARTUPS NEED CLEAR RULES TO BE COMPETITIVE

Policymakers need to be sure their approach to regulating AI is tailored to discrete harms and is not duplicative of existing law to avoid harming startup competitiveness. For example, employment discrimination is already unlawful—whether that discrimination involves the use of AI or not—meaning a new law specific to hiring and AI is likely to be duplicative.[67] Thanks to existing law, firms offering those services already have market and legal

incentives to ensure their products function properly—the new rules will only add cost and burden innovation without delivering justifiable benefit. Moreover, if each state has its own AI rules, the overlapping obligations will create additional costs and further undermine startup competitiveness.[68] Maintaining one set of rules—achieved through federal preemption, if necessary—is imperative to creating the clarity needed to enable startup success.

AI: Startups want to build socially-beneficial AI tools and routinely look to standard-setting organizations and industry best practices for guidance. To bolster responsible AI innovation and enhance U.S. global influence, policymakers should support business-led development of voluntary standards. Leveraging safe harbors can help further incent adoption of best practices. Policymakers can also utilize regulatory sandboxes, which foster innovation while enabling startups and regulators alike to learn from each other and find a balanced approach. Sandbox programs must be set up so that it is beneficial for startups to participate, and they require sufficient time, staffing, and resources to properly function.

Capital: Policymakers should avoid forcing startups to expend their few resources following new, overbroad rules—especially where existing law already covers the motivating concern. Overbroad, imprecise definitions in regulatory frameworks can scope-in far too many activities, creating compliance obligations that strain startups' limited budgets without cognizable benefit. For example, definitions of AI can scope-in common technologies like calculators or spreadsheets. Categorically defining risk creates the same obligations for AI models that diagnose diseases as those that help schedule appointments.

Capital: Poorly conceived regulatory frameworks foist disproportionate compliance burdens upon startups that drains their limited capital, discourages innovation, and undermines economic dynamism. The obligations created by rules themselves, like audit requirements, can be prohibitively expensive. Since development costs and barriers to market steer where startups innovate, these provisions could be net-negative if they discourage socially beneficial innovations.

Trade: To support U.S. leadership in AI, it is essential to avoid a patchwork of disjointed AI regulations at home and to leverage smart digital trade policies to avoid a global patchwork. Engaging with trading partners and in multilateral fora can help smooth global regulatory approaches, and supporting longstanding U.S. digital trade priorities—like enabling cross-border data flows, opposing data localization, protecting source code, and prohibiting tariffs on digital trade—will help break down barriers to foreign markets, especially for U.S. startups.[69]

> *We need more clear, accessible guidelines and resources that would help us innovate responsibly without being overwhelmed by the compliance costs or confusion.*[70]
> - **Remy Meraz, Co-Founder and CEO, Zella Life, Los Angeles, California**
> *Zella Life offers an AI-powered executive coaching platform*

STARTUPS BUILD OFF OF FOUNDATION MODELS

Startups are building and leveraging AI in a few distinct ways, and to avoid stifling innovators, policy needs to account for all of them. Many startups are leveraging foundation models, often large language models (LLMs)—both open and closed source—and fine-tuning them to create unique services.[71] This means AI policy needs to support open-source development and avoid policies that will increase costs or disincent both open and closed-source developers to make their models available for others to build upon.[72]

Liability: Foundation models are suitable for a wide range of tasks, but end users often determine how the model will be used. AI rules that incorrectly assign liability to developers of foundation models rather than malign actors will restrict the availability of those models, because developers

will not want to be liable for actions of others that they do not have control over. This disincentive will be particularly acute for open-source models, because open source developers lack formal relationships with and awareness of those who use and build with the technology they make widely available.[73]

> *In the AI space, everything's moving so fast. ... We don't have the funding to compete on the foundational model level and we don't necessarily want to. What we can compete on is understanding the value proposition of our customers the best. We use open-source models for the broad LLM needs we have. Then, we build a couple of custom models on our end to add to the foundation model.*[74]
>
> **- Paul Ehlinger, Co-Founder, Flamel.ai, Covington, Kentucky**
>
> *Flamel.ai is an AI platform that helps multi-location and franchise brands stay true to their brand guide while delivering content at scale.*

STARTUPS NEED DATA TO BUILD AI

AI innovation is data-driven, and startups need data to build, train, and fine-tune AI models. Data acquisition can be expensive, and startups have few resources to acquire vast data sets needed to build accurate and useful models.[75] Policy must enable startups to access the data they need to build, test, and improve AI models.[76]

IP: Policy should recognize that training models with data sets that include copyrighted content is permissible under law. This is imperative to support innovation, deter costly litigation, avoid gatekeeping by large entities, and prevent prohibitively expensive licensing requirements.[77]

Privacy: Startups need one consistent nationwide framework that creates clarity, streamlines costs, and fosters data-driven innovation. At present, a patchwork of data privacy laws risks uncertainty around data use, creates duplicate requirements, and weighs on already-strapped startup budgets.[78] A federal privacy law should ensure that startups can collect and process the data necessary to create new and beneficial products.

Government: Government possesses troves of data useful for AI, especially for tailored, specialized models.[79] Policymakers should ensure that agencies make this data available in AI-ready formats, and where possible, without availability lags that can undermine its utility.

> *AI is based on statistics, and to have robust statistics, you need data. It's a numbers game, and for startups to be able to compete, they need to not be restricted from accessing this data.*[80]
>
> **- Dr. Carlos Gaitan, Co-Founder & CEO, Benchmark Labs, San Diego, California**
>
> *Benchmark Labs uses AI to provide farmers with actionable weather data relevant to their location to help them save water, energy, pesticides, and fertilizers.*

STARTUPS NEED RESOURCES TO INNOVATE

AI innovation can be technical and expensive, and policy should aim to facilitate investment in AI startups, strengthen skilled talent pools, and make available resources directly to startups.

Capital: Policy should enable and incent investment in AI startups. Measures to grow the pool of investors are essential to improve capital access for AI innovators—especially those located outside existing major hubs. Further, pursuit of adjacent policy goals—especially in the competition space—without fully considering downstream consequences will make it harder for startups to get

investment or leverage existing investments. Policymakers must avoid restricting investment in AI startups and should enable—not limit—successful startup exits.[81]

Tax: Tax policies should prompt investment in startups and in AI R&D. Preserving and expanding favorable tax treatment of qualified small business stock and introducing federal credits for angel investments will help to de-risk investment in AI startups, aid early-stage AI startups in attracting needed talent, and encourage positive cycles of reinvestment of returns. Restoring immediate expensing of R&D costs will increase startups' capacity by letting them put more resources toward AI innovation.

Talent: To grow the AI talent pool, policymakers should fund and support AI skilling and upskilling programs, enhance STEM education, and attract and retain talented immigrants. Skilling, upskilling, and STEM education efforts are essential long-term efforts to building a strong base of domestic talent prepared to work in AI companies and with AI tools. Reforming and expanding immigration pathways is essential to winning the talent race. Streamlining the O-1 visa program and creating a startup visa will ensure founders can start and grow AI companies in the U.S. Expanding the H-1B visa program will help to fill present shortages in skilled talent. Finally, many foreign students receive advanced STEM degrees from U.S. institutions but then return home where they end up competing with U.S. innovators. Instead, those graduates should have the option to remain in the U.S. with the stability—like permanent residency—needed to launch or work at a startup.

Capital: Government grants are important means of capital access that support American R&D, facilitate commercialization of new innovations, and de-risk investment in recipient startups. Flagship programs like Small Business Innovation Research grants should be made permanent, accessible to more startups, and improved to suit startup realities.[82] Further, key resources like compute and data can be very expensive and steer how startups innovate. Providing compute or data sets directly to startups can lower barriers to entry and bolster AI R&D.[83]

> *Accessing the right talent on our budget was one of our most challenging problems as a startup. [...] Being a startup on a shoestring budget, we went through a couple of student machine learning engineers, and then we got money for more professional ones. Still, some of them flopped as well. It took a lot of iterations to find a machine learning engineer.*[84]
>
> - Dr. Cara Wells, Founder, EMGenisys, Driftwood, Texas
>
> *EMGenisys is a machine learning-powered platform to analyze embryos and improve animal reproduction.*

STARTUPS CAN HELP TO IMPROVE GOVERNMENT

Policymakers can use levers of government to speed AI adoption and support U.S. AI leadership around the globe.

Government: Government is a large buyer of software and serves many functions that could be made more efficient through the use of AI. Policymakers should ensure acquisition processes work for startups so they can help to improve the provision of government services and through AI.

> *We are excited to be in a space that gets to serve government and public officials, especially local governments across the country. Oftentimes these are folks that work extremely hard, are incredibly underpaid, and choose careers that allow them to serve their communities with their skill set. The notion that we can provide tools for them to improve how they do their jobs, and serve their community more, is awesome. Not only is it a novel use of AI, but an incredibly important one.*[85]
>
> - Chip Kennedy, CEO, and Lindsay Avagliano, COO, CivicReach.AI, Raleigh, North Carolina
>
> *CivicReach is building local government-specific, on-demand, and employee-first voice AI agents to assist staff and call centers in answering the phone more often, more times of day, and in more languages.*

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ITI Promoting Innovation Worldwide

May 21, 2025

The Honorable Gus Bilirakis
Chairman
Committee on Energy and Commerce
Subcommittee on Commerce, Manufacturing, and Trade
United States House of Representatives
Washington, DC 20515

The Honorable Jan Schakowsky
Ranking Member
Committee on Energy and Commerce
Subcommittee on Commerce, Manufacturing, and Trade
United States House of Representatives
Washington, DC 20515

Dear Chairman Bilirakis and Ranking Member Schakowsky,

Thank you for holding today's subcommittee hearing on *AI Regulation and the Future of US Leadership*. We appreciate your focus on the need for a pro-innovation policy environment that cements America's AI leadership.

ITI represents eighty of the world's leading technology companies from all corners of the technology sector, including hardware, software, digital services, semiconductor, network equipment, and other internet and technology-enabled companies. AI is a priority technology area for our member companies, who are both developing and using the technology to evolve their businesses.

The technology industry is increasingly concerned about the growing number of state legislative proposals to regulate AI. There is a risk that a tidal wave of state legislative activity could undermine our shared goals of American technological preeminence. At least three states have passed AI legislation, and more than 1,000 bills have been introduced in 2025 so far.

We appreciate the recognition that a patchwork of state laws on AI could jeopardize national AI priorities in the reconciliation text that advanced out of the Committee last week. Harnessing the benefits of AI to improve federal service delivery, as the legislation's funding for federal AI-enabled systems at the Department of Commerce would do, is just one of the many efficiencies to be gained from the increased adoption of AI – and which could be hampered by competing state regulations.

ITI is eager to work with the Committee to ensure that the U.S. remains a global leader in AI and explore opportunities to develop a unified, risk-based standard for AI development and deployment that avoids conflicting state-level regulation.

Sincerely,

Jason Oxman
President and CEO
Information Technology Industry Council (ITI)

Global Headquarters
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Dear Members of the Maryland Congressional Delegation,

We, the undersigned chambers of commerce and business organizations representing a diverse range of industries across Maryland, are writing to express our support for the establishment of consistent rules for the development and deployment of artificial intelligence technologies at the national level. A unified federal approach would foster innovation by providing businesses with a predictable regulatory environment, encourage investment, and ensure that the benefits of AI can be realized across the United States for all of our citizens.

As you know, Maryland has enormous opportunity to leverage AI to compete in the global marketplace, via productivity gains, enhanced creativity, and allowing businesses to strategically direct financial resources in the areas that offer the greatest pathways for growth. In addition, modernizing government infrastructure to bring it into the AI age through a federal standard can provide pathways for businesses to offer services that make government more efficient, and demonstrate a roadmap for state and local governments. These actions are critical, as other countries are adopting national policies to promote AI adoption, especially China.

Right now, Marylanders are struggling as they face significant economic headwinds and job losses due to the federal job cuts. In fact, it was recently announced that the state's credit rating has been downgraded, a result of financial underperformance, and with uncertainty around employment and federal policies, the path to improvement is unclear. That is why it is so important to establish a federal framework that prevents further uncertainty for hardworking Marylanders and allows Maryland to compete on a level playing field with a clear, federal standard for the implementation on AI.

While we recognize the importance of addressing potential risks and ethical considerations associated with AI, the current trajectory of disparate state laws could significantly undermine innovation, economic growth, and our ability to compete on a national and global scale. Overregulating businesses that bring jobs to the state and facilitate opportunities for local entities could have detrimental impacts on our state's economy. The lack of a federal framework further complicates a complex and burdensome compliance landscape, particularly for small and medium-sized enterprises that may lack the resources to navigate varying and potentially conflicting requirements across state lines.

To best position Maryland and our businesses for success in the 21st century, we urge you to champion federal efforts to establish consistent rules for the development and deployment of artificial intelligence technologies, preempting an emerging patchwork of state laws.

We stand ready to collaborate with you and your colleagues on crafting thoughtful and effective federal legislation and helping Maryland lead on this critical issue.

Sincerely,

Maryland Retailers Alliance
Maryland Tech Council
Greater Severna Park and Arnold Chamber of Commerce

RETAIL ASSOCIATION OF MAINE
Voice of Maine Retail

Dear Members of the Maine Congressional Delegation,

We, the undersigned chambers of commerce and business organizations representing a diverse range of industries across Maine, are writing to express our growing concern regarding the increasing number of proposed state-level regulations targeting the use of artificial intelligence technologies. While we recognize the importance of addressing potential risks and ethical considerations associated with AI, the current trajectory of disparate state laws could significantly undermine innovation, economic growth, and our ability to compete on a national and global scale. The lack of a federal framework further complicates a complex and burdensome compliance landscape, particularly for small and medium-sized enterprises that may lack the resources to navigate varying and potentially conflicting requirements across state lines.

As you know, Maine has enormous opportunity to leverage AI to compete in the global marketplace, via productivity gains, enhanced creativity, and allowing businesses to strategically direct financial resources in the areas that offer the greatest pathways for growth. In addition, modernizing government infrastructure to bring it into the AI age through a federal standard can provide pathways for businesses to offer services that make government more efficient, and demonstrate a roadmap for state and local governments. These actions are critical, as other countries are adopting national policies to promote AI adoption, especially China.

To best position our businesses for success in the 21st century, we urge you to champion federal efforts to establish consistent rules for the development and deployment of artificial intelligence technologies, preempting an emerging patchwork of state laws. A unified federal approach would foster innovation by providing businesses with a predictable regulatory environment, encourage investment, and ensure that the benefits of AI can be realized across the United States for all of our citizens.

We stand ready to collaborate with you and your colleagues on crafting thoughtful and effective federal legislation.

Sincerely,

Retail Association of Maine

May 20, 2025

The Honorable Deb Fischer
United States Senate
448 Russell Senate Office Building
Washington, D.C. 20510

The Honorable Pete Ricketts
United States Senate
139 Russell Senate Office Building
Washington, D.C. 20510

The Honorable Mike Flood
U.S. House of Representatives
343 Cannon House Office Building
Washington, D.C. 20515

The Honorable Don Bacon
U.S. House of Representatives
2104 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Adrian Smith
U.S. House of Representatives
502 Cannon House Office Building
Washington, D.C. 20515

Subject: Urgent Need for Federal Preemption of State AI Regulations

Dear Members of the Nebraska Congressional Delegation:

We, the undersigned chambers of commerce representing a diverse range of industries across Nebraska, are writing to express our growing concern regarding the increasing number of proposed state-level regulations targeting the use of artificial intelligence technologies. While we recognize the importance of addressing potential risks and ethical considerations associated with AI, the current trajectory of disparate state laws could significantly undermine innovation, economic growth, and our ability to compete on a national and global scale. The lack of a federal framework further complicates a complex and burdensome compliance landscape, particularly for small and medium-sized enterprises that may lack the resources to navigate varying and potentially conflicting requirements across state lines.

As you know, Nebraska has enormous opportunity to leverage AI to compete in the global marketplace, via productivity gains, enhanced creativity, and allowing businesses to strategically direct financial resources in the areas that offer the greatest pathways for growth. In addition, modernizing government infrastructure to bring it into the AI age through a federal standard can provide pathways for businesses to offer services that make government more efficient, and demonstrate a roadmap for state and local governments. These actions are critical, as other countries are adopting national policies to promote AI adoption, especially China.

To best position our businesses for success in the 21st century, we urge you to champion federal efforts to establish consistent rules for the development and deployment of artificial intelligence technologies, preempting an emerging patchwork of state laws. A unified federal approach would foster innovation by providing businesses with a predictable regulatory

environment, encourage investment, and ensure that the benefits of AI can be realized across the United States for all of our citizens.

We stand ready to collaborate with you and your colleagues on crafting thoughtful and effective federal legislation.

Sincerely,

Todd Bingham
President & CEO
Nebraska Chamber
of Commerce & Industry

Heath Mello
President & CEO
Greater Omaha Chamber

Jason Ball
President & CEO
Lincoln Chamber of Commerce

Pittsburgh Technology Council

Dear Members of the Pennsylvania Congressional Delegation,

We are writing to express our growing concern regarding the increasing number of proposed state-level regulations targeting the use of artificial intelligence technologies. While we recognize the importance of addressing potential risks and ethical considerations associated with AI, the current trajectory of disparate state laws could significantly undermine innovation, economic growth, and our ability to compete on a national and global scale. The lack of a federal framework further complicates a complex and burdensome compliance landscape, particularly for small and medium-sized enterprises that may lack the resources to navigate varying and potentially conflicting requirements across state lines.

As you know, Pennsylvania has enormous opportunity to leverage AI to compete in the global marketplace, via productivity gains, enhanced creativity, and allowing businesses to strategically direct financial resources in the areas that offer the greatest pathways for growth. In addition, modernizing government infrastructure to bring it into the AI age through a federal standard can provide pathways for businesses to offer services that make government more efficient, and demonstrate a roadmap for state and local governments. These actions are critical, as other countries are adopting national policies to promote AI adoption, especially China.

To best position our businesses for success in the 21st century, we urge you to champion federal efforts to establish consistent rules for the development and deployment of artificial intelligence technologies, preempting an emerging patchwork of state laws. A unified federal approach would foster innovation by providing businesses with a predictable regulatory environment, encourage investment, and ensure that the benefits of AI can be realized across the United States for all of our citizens.

We stand ready to collaborate with you and your colleagues on crafting thoughtful and effective federal legislation.

Sincerely,

Pittsburgh Technology Council

May 20, 2025

Chairman Brett Guthrie
House Energy & Commerce Committee
2125 Rayburn House Office Building
Washington, DC 20515

Ranking Member Frank Pallone
House Energy & Commerce Committee
2322A Rayburn House Office Building
Washington, DC 20515

Dear Chairman Guthrie and Ranking Member Pallone:

On behalf of the members of the National Multifamily Housing Council (NMHC), the National Apartment Association (NAA), and the Real Estate Technology and Transformation Center (RETTC), we write ahead of your hearing entitled "AI Regulation and the Future of US Leadership" to commend the Committee's efforts to support the nation's leadership in artificial intelligence (AI) . Thank you for the opportunity to share the view of rental housing providers and their technology partners as the Committee examines the risks and opportunities of rapidly evolving AI technology.

We support recent provisions in the Energy and Commerce Committee's Budget Reconciliation package that would prevent the enactment of duplicative or burdensome AI regulations at the state and local levels. As our organizations have consistently said in the past, a fragmented regulatory approach in data management, security and technology risks stifling innovation and increasing compliance costs. This ultimately undermines the benefits these systems and technologies offer to renters and housing providers alike.

As the Committee considers AI policy, we urge you to support a balanced framework that safeguards innovation. The existing legal landscape already offers strong protections, and any new regulations should build on that foundation without undermining technological progress.

Background

Rental housing providers use emerging technologies, like AI, to reshape business operations, improve housing affordability and benefit millions of American renters. While commonly perceived to be new technologies, AI and related technologies in rental housing have already led to significant gains in meeting resident expectations and demand. Applications of this technology continue to grow rapidly but, to date, include virtual touring, enhanced resident screening and leasing, home automation, predictive maintenance, and even improved property level climate resilience.

These tools offer benefits to housing providers and residents alike, driving modernization of historic practices and maximizing operational efficiency and improving housing outcomes. They are also subject to robust internal controls, existing legal protections, and regulatory requirements at the federal, state and local level that should be considered before overlaying any additional regulations.

Benefits of AI for Residents, Rental Housing Providers and Others

Below are some examples of how stakeholders in the multifamily space are utilizing AI and other technologies to improve operations and enhance renters' experiences:

- **Rental housing owners and lenders** leverage technology platforms to improve efficiency, underwrite lending, identify investment opportunities to meet growing rental demand and work towards improving housing affordability.

- **Rental housing developers** use new cutting-edge technologies to build and rehabilitate rental properties and have begun to cut costs by leveraging AI to navigate complex and antiquated zoning policies to identify workable land-use strategies to speed development and ultimately improve housing affordability.

- **Rental housing operators** use AI platforms for improved resident service; more transparent and accurate resident screening and leasing to improve housing opportunity and prevent rising rental housing fraud; home automation; and predictive maintenance.

- **Rental housing technology suppliers** are transforming the market with tools that improve the resident experience, enable property sustainability and resilience, enhance security for residents, and lower operational costs through risk management solutions.

As evidenced above, housing providers are turning to these new AI tools to combat rising operational threats that are difficult to address using traditional methods. When implemented properly, these technologies can greatly assist with management and other housing-related obligations and ensure residents receive the best living experience possible.

The rise in fraud in the application and leasing process presents a notable case study on the benefits of AI. NMHC and NAA surveys[1] and reports[2] have found staggering increases in application fraud. A vast majority of respondents (93.3%) experienced fraud in the past twelve months and most also (70.7%) reported experiencing an increase in fraudulent applications and payments where the person utilized fraudulent documentation, financial statements and even identities. Individuals who submit fraudulent applications and subsequently fail to pay rent account for roughly 1 in 4 (23.8%) of eviction filings. This also drives up housing costs broadly due to nonpayment, with apartment owners, developers and managers forced to write off an average of roughly $1 million in bad debt stemming from nonpayment due to fraudulent applications. By integrating AI technologies into the screening process, housing providers are pursuing new avenues to better identify and combat application fraud. Over time, this will reduce evictions, lower costs, and prevent renters from fraudulently securing unsustainable leases that result in bad debt.

Similarly, underwriting is a critical part of the lending process, and its accuracy is highly dependent on the quality of the available information. Incorporating AI enhances housing owners' and financiers' ability to effectively underwrite lending and ultimately improve housing supply and lower housing costs as a result.

In addition, empirical evidence suggests that while AI systems are far from perfect, they appear to result in less bias than human beings and may be taught to avoid bias, including in underwriting. For example, renewing or enforcing leases, helping to guide rental pricing, screening applicants for rental housing and taking other resident-facing actions can be time-consuming, costly and inconsistent, despite the best efforts of property owners and managers. Some housing providers use, or are considering using, technology to address these issues that arise within their own communities. Industry practices include providing for human, individualized oversight of decisions recommended by AI systems so that the automated recommendation is just one component in a process that gives humans the best information on which to make a decision.

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[2] National Apartment Association, "Synthetic Fraud: How to Identify, Respond To & Prevent It," https://www.naahq.org/synthetic-fraud.

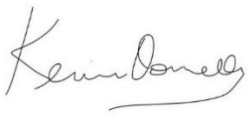
Conclusion

We appreciate the Committee's focus on fostering innovation and ensuring a coherent, forward-looking approach to AI policy. NMHC, NAA, and RETTC stand ready to work with the Committee to support responsible innovation that improves efficiency, resilience, and affordability in rental housing.

Sincerely,

Sharon Wilson Géno
President
National Multifamily Housing Council

Bob Pinnegar
President and Chief Executive Officer
National Apartment Association



Kevin Donnelly
Executive Director and Chief Advocacy Officer
Real Estate Technology & Transformation Center

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May 21, 2025

The Honorable Brett Guthrie
Chairman
House Committee on Energy and Commerce
2161 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Frank Pallone
Ranking Member
House Committee on Energy and Commerce
2161 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Guthrie and Ranking Member Pallone,

TechNet members include many of our nation's leading AI developers, deployers, researchers, and users of cutting-edge AI solutions, and we are committed to ensuring that the United States is the global leader in AI. While we recognize the importance of addressing the known or reasonably foreseeable risks of AI, the current trajectory of state-by-state regulation risks creating a fragmented and contradictory legal landscape that could stifle innovation, impede interstate commerce, hurt our competitive edge, and ultimately fail to provide effective and consistent protections for individuals. America must have one federal standard to regulate AI, and we support the House Energy and Commerce's proposed moratorium on state and local regulations governing AI.

Over 1,000 AI bills have been introduced in state legislatures this year alone. Most companies developing and deploying AI systems do not operate within the boundaries of any one state. The AI bills introduced in state capitols are not uniform or interoperable with one another, contain different definitions of AI and related terminology, and require different disclosures for engineering content. Many state initiatives, though well-intentioned, introduce state-specific requirements that diverge significantly from one another and from potential national or international standards. For instance, California's AB 412 proposes a state-specific seven-day response system and mandates the documentation of every single copyrighted work used for training, creating an onerous burden for developers operating in the state. Similarly, New York's A 6453 applies to any large frontier model operating within the state, and Texas's SB 1960 creates a state-specific notice-and-takedown system for unauthorized digital replicas with damages calculated per violation and no intent requirement, potentially sweeping in small tools and creating significant legal risk. Several state bills exhibit overly broad scopes and impose heavy compliance costs. California's AB 1018, for example, proposes EU-style requirements for algorithms used in consequential decisions, scoping in low-risk tools and imposing heavy compliance costs through

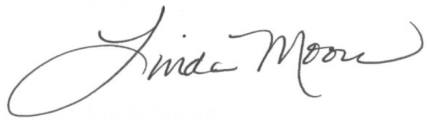
annual evaluations, user opt-out and appeal rights, and 10-year document retention requirements. Such provisions can disproportionately impact smaller businesses and hinder the development and deployment of beneficial AI applications.

Overall, this developing patchwork makes compliance confusing for consumers, burdensome for businesses, and even prohibitive for many small- and medium-sized companies who play an important role in the AI ecosystem. A federal moratorium on state AI regulation is essential to pause this fragmented approach and allow for the careful development of a cohesive national strategy. This period would provide an opportunity for policymakers, industry experts, civil society, and the public to collectively study the complex issues surrounding AI, understand its potential benefits and risks, and deliberate on the most effective regulatory mechanisms.

While we firmly support state and local government's ability to set the rules which they feel best meet the specific needs of their citizens, technology implementation does not have borders. For that reason, the federal government has always governed the use of technology, and AI should be no different. A unified, well-scoped federal approach to managing the risks of AI models and systems, including the most powerful AI frontier models, would address compliance burdens with varying state regulations while still making room for states to address concerns related to high-risk consumer-facing applications where clear gaps have been identified and no existing regulation is applicable, such as with deepfakes or NCII content. A federal framework would provide much needed consistency and clarity for businesses and developers, fostering innovation and investment by reducing the burden of navigating a patchwork of state laws. It would also ensure consistent protections for individuals across the country, regardless of their state of residence. Moreover, a federal approach would be better positioned to address the interstate and international nature of AI development and deployment, facilitating cooperation and alignment with global standards, where appropriate.

We are firmly committed to ensuring that the United States wins the global AI race. Global AI leadership demands that we have the right federal regulatory framework in place that sets a blueprint for the rest of the world to follow. We look forward to continuing to work with your Committee and Congress on this important task and seeing the state regulation moratorium pass as part of the Reconciliation effort.

Sincerely,



Linda Moore
President and CEO

P.O. Box 291522

Nashville, TN 37229

nessee,

We're writing today as Tennesseans who believe in common sense, limited government, and letting innovation thrive. That's why we're urging you to support the proposed moratorium on artificial intelligence regulations—a step that would help the federal government set a clear, consistent standard for AI across the country.

Right now, we've got a patchwork of state laws that's growing more complicated by the day. For small business owners, startups, and even larger companies here in Tennessee, that means confusion, red tape, and unnecessary costs. It's holding back investment, job creation, and the very kind of growth that could keep our state and our country at the forefront of the global economy.

From trucking and logistics to agriculture and healthcare, AI has the power to transform the way we work and live. But we need a steady foundation to build on—one national framework that gives innovators the green light to move forward, instead of forcing them to tiptoe around 50 different sets of rules.

A moratorium doesn't mean doing nothing. It means hitting pause long enough to get this right—so we can protect consumers, promote innovation, and ensure this technology is used responsibly. It also gives government itself a chance to modernize, using AI to streamline services, cut costs, and deliver better outcomes for taxpayers.

Tennessee has always done well when Washington gets out of the way and lets us lead. But on this issue, we need a national game plan—one that keeps America competitive and gives our businesses the certainty they need to grow.

We hope you'll stand with us in supporting a smart, limited federal framework for AI—so we can keep building a future that works for all Americans.

Sincerely,

Ben Cunningham | President of the Nashville Tea Party

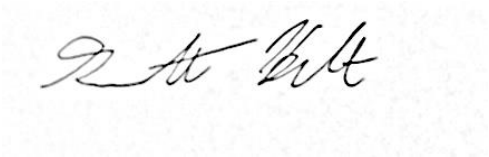
Ben Cunningham

P.O. Box 291522

Nashville, TN 37229

wner and CPO of Cumberland Creative

Garret Holt | Owner of Holt Real Estate



Jim Klonaris | Owner of Kefi, Vida, and The Press Room

Jim Allocco | Owner Allocco Hardwood

David Weflen | Owner of Weflen Photography

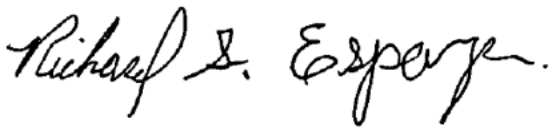
P.O. Box 291522

Nashville, TN 37229

er of 50pts Photography

David Champlin | Owner of Battleground Fitness

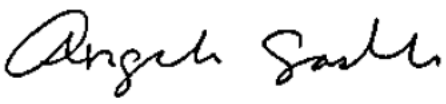
Richard Esparza | Owner of Alamo Branding



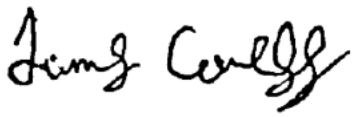
Rafi Chowdhury | Owner of Chowdhury Digital

Wes Warrington | CEO of Resolve Mdx and Resolve Health

Angela Sadler | Owner of Bloomhouse Tennessee



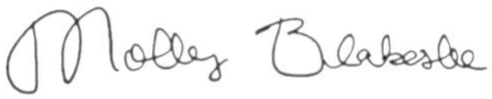
James Cowell | Director of Operations for AFL



P.O. Box 291522

Nashville, TN 37229

Molly Blakeslee | Owner of Molly Marie Estheticians



McDermott & Company Associates
Insurance Analysts,
Agents and Consultants
883 West Baxter Drive
South Jordan, Utah 84095

May 19, 2025

The Honorable Mike Kennedy
3549 N University Ave, Suite 275
Provo, UT 84604

Dear Representative Kennedy,

I urge you to support the proposed artificial intelligence regulation moratorium, so that America can have a unified federal framework for AI, one that sets consistent national rules and preempts the current patchwork of state laws that has grown out of control. This is essential to ensuring that the United States remains the most competitive and innovation-friendly environment for AI. Without it, businesses will continue to face growing uncertainty across state lines, uncertainty that hurts our economy and future. Startups and established companies alike cannot confidently invest in or scale AI solutions if they must navigate conflicting, shifting state-level requirements.

As artificial intelligence rapidly transforms sectors from logistics to healthcare, America must ensure it remains the best place in the world to build and scale AI-powered businesses. However, business growth depends on certainty, and companies need clear, consistent rules to make long-term investments and develop technologies that can operate on a national scale. A fragmented state-by-state approach with 50 different AI legal structures creates vast legal confusion and compliance costs that few small businesses can absorb.

A moratorium on AI regulation that would modernize America's IT infrastructure would not only help ease the compliance burden of various regulations across different states. Still, it would also be a significant step towards keeping the United States competitive globally. While other nations advance coherent national strategies, the United States risks falling behind by defaulting to a patchwork of state-specific laws. A common standard will provide innovators with the clarity they need to lead effectively.

Crucially, creating a federal framework for AI can accelerate modernization, cost-saving, and efficiency efforts across the government itself. By enabling agencies to adopt AI tools more effectively, it would open up new opportunities for public-private partnerships that improve service delivery and offer replicable models for state and local systems. This would drive innovation and savings across the board.

I urge you to support efforts that create a stable, national approach to AI development and deployment. With the proper foundation in place, we can lead the world in AI while ensuring this technology benefits all Americans.
Thank you in advance for your consideration.

Sincerely,

Luke McDermott

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www.mcdermott-company.com

May 21, 2025

RE: A Supportive Federal Framework for AI Development Should Preempt State Statutes

Dear Members of New York's Congressional Delegation:

As a coalition of New York business and economic development advocates, representing nearly every sector of the Empire State's economy, we write to express our concerns about the growing patchwork of AI policies appearing in states throughout the country. To ensure New York and American businesses more broadly remain at the forefront of the tech race and can develop the next generation of innovations in a predictable regulatory environment, we urge you to support a strong federal framework that preempts a minefield of differing and potentially conflicting state laws.

Without a clear national standard, businesses will face a growing patchwork of state laws that drive up compliance costs and suppress innovation. New York lawmakers have introduced more AI-related bills than any other state, and while well-intentioned, this inconsistent approach will make it harder for companies to grow and compete – especially small and mid-sized start-ups without the resources to navigate complex regulatory and liability regimes.

AI-powered innovations are already transforming small business operations, healthcare, education, and modernizing and streamlining government infrastructure. Without a supportive policy environment, driven by a strong federal framework, many of those developments may never see the light of day.

According to Startup Genome, the Empire State's innovation ecosystem ranks second only to Silicon Valley. Governor Kathy Hochul's historic investment in Empire AI – with her rallying cry that "whoever dominates the AI industry will dominate the next era of human history" – demonstrates New York's deep commitment to remaining at the forefront of this technology. But our status as a global leader in innovation will continue only with clear and consistent policies. A fragmented regulatory environment could send investments and jobs elsewhere, threatening New York's future as a powerhouse for innovative ideas.

To remain competitive, the U.S. needs a single, clear set of AI rules that allow businesses to build responsibly, alongside an effort to modernize our government infrastructure to bring it into the AI age. China is moving fast and adopting national policies to accelerate AI development and using it for authoritarian purposes. Without action from Congress, and legislation that preempts a confusing landscape of piecemeal state laws, we risk handing an edge to our geopolitical competitors.

We urge you to act now to ensure the U.S. leads in AI with clarity, confidence, and a regulatory climate that fosters innovation while ensuring everyone can benefit from this transformative technology. Thank you for considering our perspective, and we look forward to collaborating with your offices on a national AI framework.

Sincerely,

The Business Council of New York State
Lawsuit Reform Alliance of New York
Upstate United

Statement on New Jersey's Ongoing Development and Oversight of Artificial Intelligence

Office of New Jersey Attorney General Matthew J. Platkin

The State of New Jersey is committed to the responsible development and use of artificial intelligence (AI) to capitalize on New Jersey's national leadership role as a hub in key industries such as health, sustainability, finance, and technology. Our multipronged approach promotes the ability of academia, industry, state government, and public-private partnerships to work together to promote, develop, and deploy AI technologies in appropriate use cases with effective government oversight through the enforcement of preexisting and new laws and regulations. This strategy is enabling our State to leverage AI to foster progress and create economic opportunity for New Jerseyans while ensuring that the public is protected from emerging and evolving harms.

We welcome federal government leadership in steering a national conversation around the benefits and risks of AI and how to design a shared legal framework that appropriately balances the attendant risks and benefits at the baseline without stifling innovation. As New Jersey's own experience shows, it is essential that States be given the space to explore how their local circumstances translate into priorities and anticipated impacts, to decide for themselves how to calibrate their government programs and legal regimes to the needs of their residents, and to experiment with and learn from different regulatory and enforcement approaches in light of their specific circumstances.

That diversity of perspectives and experiences will only enrich the national conversation around AI and put Congress in the best position to enact legislation that best serves the interests of the public in our vast nation. For that reason, last week I joined 39 other State Attorneys General in a bipartisan letter urging Congress to reject a proposal that would impose a 10-year prohibition on enforcing state laws addressing AI and automated decision-making. And today, through this statement, I would like to provide this committee with additional information about the valuable work in the AI space that is in progress in New Jersey, as an illustration of the kinds of contributions that could be delayed or lost if Congress were to deny the States a role in regulating the risks of AI through an overbroad moratorium.

Positioning New Jersey as an AI Hub in the East Coast

In October 2023, Governor Phil Murphy signed Executive Order 346, which established an AI Task Force charged with studying emerging AI technologies to issue findings on their potential impact on society and to offer recommendations for government actions to encourage the ethical and responsible use of AI technologies, including Generative AI. As a member of the Task Force, I am proud of the work we have done to better understand and leverage these emerging technologies in concrete ways while identifying the key considerations and principles that should guide effective oversight.

As part of its work, the Task Force commissioned several surveys to gauge responses and attitudes towards AI among New Jersey public employees, institutions, and residents, to better understand our technological landscape and ensure that our government's strategy is well aligned with local priorities and concerns and fosters public trust. Building on this work and months of consultation

with experts and stakeholders, the AI Task Force issued a final report in November 2024 that included recommendations to the Governor to encourage the statewide development and use of AI, improve government services, and promote equitable outcomes.

Since then, New Jersey has taken multiple steps to put our commitment to innovation into action. In March 2025, Governor Murphy officially opened the NJ AI Hub, a state-of-the-art facility in West Windsor Township that will provide a physical location for a public-private partnership among the New Jersey Economic Development Authority (NJEDA), Princeton University, Microsoft, and CoreWeave. Supported by an investment of over $72 million, programming at the NJ AI Hub will focus on research and development, commercialization and acceleration of innovation, and strengthening AI education and workforce development. This initiative is part of a broader push to promote statewide investment in AI, which also includes a tax credit program for innovative AI companies and the creation of a venture fund that will invest in early-stage AI startups, focusing on companies that are part of New Jersey's strategic industries.

Enforcing Existing Laws and Regulations

While AI presents new opportunities that New Jersey is ready to embrace, our existing laws and regulations still provide strong tools to ensure that the use of innovative technologies does not result in discrimination or bias-based harassment. My office and the New Jersey Division on Civil Rights (DCR) are committed to enforcing New Jersey's civil rights laws, including the New Jersey Law Against Discrimination (LAD), which is one of the nation's strongest antidiscrimination laws. In January 2025, we issued joint guidance[1] addressing the application of the LAD to algorithmic discrimination resulting from the use of new and emerging data-driven technologies, including AI.

The LAD prohibits discrimination and bias-based harassment in employment, housing, places of public accommodation, credit, and contracting on the basis of actual or perceived race, religion, color, national origin, ancestry, sex, gender identity or expression, sexual orientation, disability, and other protected characteristics. Although the law predates the development of AI, by its terms, it squarely applies to automated decision-making tools that rely on innovative technologies if their use results in unlawful discrimination. The guidance provides clear definitions, legal standards for liability, and examples of how discrimination and bias may be introduced at every stage of the lifecycle of these tools—from their design, through the training of underlying models, and up to the tools' deployment and use. It is tailored to educate the public and put regulated sectors on notice of the specific risks of algorithmic discrimination that these tools carry and how the LAD redresses them.

The use of AI and other automated decision-making tools does not immunize covered entities from LAD liability that they would face if they achieved the same results through other means. A nationwide moratorium on enforcement of state laws on AI may hinder our ability to enforce these longstanding civil rights protections and provide much-needed legal guidance to innovators and service providers who wish to harness the promise of AI without perpetuating discrimination and bias. I urge Congress to preserve New Jersey and other States' ability to protect the public in this space.

[1] https://www nj.gov/oag/newsreleases25/2025-0108_DCR-Guidance-on-Algorithmic-Discrimination.pdf

Tackling Emerging Harms to the Public Through New Legislation

In addition to enforcing longstanding laws like the LAD, New Jersey has also enacted new legislation to provide guardrails for the use of AI and other innovative technologies that specifically apply to areas and use cases where members of the public may face a heightened risk of harm. That is the kind of tailored approach to AI regulation by the States that Congress should welcome rather than discourage or seek to displace.

For example, the New Jersey Data Privacy Act (NJDPA), our State's omnibus privacy law, went into effect in January 2025. The NJDPA requires, among other things, that businesses that intend to process consumer data conduct data protection assessments if such processing "presents a heightened risk of harm to a consumer." One of the activities that may result in such "heightened risk" is profiling, defined as any form of automated processing performed on personal data to evaluate, analyze or predict personal aspects related to an identified or identifiable individual's economic situation, health, personal preferences, interests, reliability, behavior, location or movements. The NJDPA also grants consumers the right to opt-out of profiling in furtherance of decisions that produce legal or similarly significant effects. Deployment of any AI tools that may engage in "profiling" or otherwise process data in a way that presents a risk of harm to a consumer would trigger the application of the Act.

Similarly, in April, Governor Murphy signed into law a new statute that establishes civil and criminal penalties for the production and dissemination of deceptive audio or visual media, commonly known as "deepfakes," for illicit purposes. As our Legislature recognized, the advancement of AI has not only enabled the creation of ever more realistic and convincing deepfakes, but also made them more widely accessible and easy to generate by all kind of users. Still, in recognition of the First Amendment concerns and risks of stifling innovation that a broad deepfake ban could raise, our legislation specifically focuses on materials that are created or used to commit or attempt to commit crimes and offenses, including sex-related crimes, harassment, and improper influencing of official and political matters. Indeed, in 2024, my office and the New Jersey Secretary of State issued guidance to the public on identifying and avoiding the spread of deepfake photos, videos, and audio that use Generative AI technologies that spread misinformation aimed at manipulating and misleading voters.[2]

New Jersey's experience shows that States can take well-informed, tailored, and sophisticated approaches to regulating AI and managing the evolving risks that these technologies pose for our residents while being a hospitable home for innovators. I urge Congress to stay the course and allow us to continue doing so.

[2] https://www njoag.gov/as-2024-presidential-election-approaches-lt-governor-way-and-attorney-general-platkin-issue-guidance-on-how-to-recognize-political-deepfakes-designed-to-misinform-and-manipulate/

ADVOCATES
FOR HIGHWAY
& AUTO SAFETY

May 21, 2025

The Honorable Gus Bilirakis, Chair
Committee on Energy and Commerce
Subcommittee on Commerce, Manufacturing, and Trade
U.S. House of Representatives
Washington, D.C. 20515

The Honorable Jan Schakowsky, Ranking Member
Committee on Energy and Commerce
Subcommittee on Commerce, Manufacturing, and Trade
U.S. House of Representatives
Washington, D.C. 20515

Dear Chair Bilirakis and Ranking Member Schakowsky:

Thank you for convening the hearing, "AI Regulation and the Future of US Leadership." Advocates for Highway and Auto Safety (Advocates) appreciates the opportunity to provide input on this important issue and underscore the need to ensure the safety of the American public while advancing developing technology, which can and should be done in unison. Conversely, hampering the ability of states to protect the public on roadways, especially in the absence of federal safety laws and regulations, does not serve this goal.

Motor Vehicle Deaths Remain Historically High

On average, 112 people were killed every day on roads in the U.S., totaling 40,901 fatalities in 2023, the most recent final annual data from the National Highway Traffic Safety Administration (NHTSA).[1] This is a 24 percent increase in deaths in just a decade.[2] An additional 2.44 million people were injured.[3] Early estimates for 2024 find a welcome, albeit slight, reduction in traffic fatalities to 39,345.[4] Yet, nearly 40,000 people killed on our roads is still reason to utilize verified solutions.

In 2023, 7,314 pedestrians and 1,166 pedalcyclists were killed in traffic crashes.[5] Motorcycles continue to be the most hazardous form of motor vehicle transportation;[6] 6,335 riders were killed in 2023.[7] Also that year, 5,472 people were killed and 153,452 were injured in large truck crashes.[8] Since 2009, the number of fatalities in large truck crashes has increased by 76 percent[9] and those injured rose by 117 percent.[10]

With regard to the leading contributing factors to motor vehicle crashes in 2023: alcohol impaired driving resulted in 12,429 people killed;[11] speeding resulted in 11,775 people killed;[12] 10,484 vehicle occupants killed in crashes were unrestrained;[13] and, crashes in which at least one driver was distracted resulted in 3,275 fatalities.[14] This deadly road epidemic is predicated on dangerous roadway design.[15] Additionally, in 2021, the most recent year for which data is available according to the Non-Traffic Surveillance (NTS) system, an estimated 3,990 people were killed in non-traffic motor vehicle crashes, an increase of 26 percent from 2020.[16] And, since 1990, at least 1,127 children have died in hot cars.[17]

In addition to the physical and emotional repercussions of motor vehicle crashes, the annual economic cost is approximately $340 billion (2019 dollars).[18] This figure equates to every person living in the U.S. essentially paying an annual "crash tax" of over $1,000. Moreover, the total value of societal harm from

motor vehicle crashes in 2019, which includes loss of life, pain and decreased quality of life, was nearly $1.4 trillion.[19] When adjusted solely for inflation, this figure amounts to over $1.77 trillion.[20] Research from the Network of Employers for Traffic Safety (NETS) finds motor vehicle crashes cost employers $72.2 billion in direct crash-related expenses in 2019.[21]

Proven Technology Saves Lives and Prevents Injuries

A comprehensive and effective approach to improve traffic safety is needed. Proven vehicle safety upgrades are one of the most effective strategies. Research from NHTSA has estimated that, "From 1968 through 2019, NHTSA's safety standards prevented more than 860,000 deaths on the nation's roads, 49 million nonfatal injuries, and damage to 65 million vehicles. In 2019 alone, these standards prevented about 40,000 deaths, 1.9 million nonfatal injuries, and damage to 3.8 million vehicles," and "[F]rom 1968 to 2019, the comprehensive societal benefits amounted to $17.3 trillion, using 2019 dollars. In contrast, the total costs for the 52 years combined are roughly $1 trillion."[22]

Past efforts include: tire pressure monitoring systems;[23] rear outboard 3-point safety belts;[24] electronic stability control;[25] rear safety belt reminder systems;[26] brake transmission interlocks;[27] safety belts on motorcoaches;[28] rear-view cameras;[29] safer power window switches;[30] advanced driver assistance systems (ADAS);[31] advanced impaired driving prevention technology;[32] rear designated seating position alert ("hot cars");[33] enhanced vehicle hood and bumpers to better protect vulnerable road users;[34] and, advanced head lamps.[35] To address the ongoing traffic safety crisis, Advocates urges the completion of overdue or unfulfilled performance standards for critical vehicle safety technology as directed by the bipartisan Infrastructure Investment and Jobs Act (IIJA)[36] and other laws.[37] Some of these systems use artificial intelligence (AI).

Requirements for additional proven lifesaving technologies as standard equipment in all new vehicles should be advanced in future federal legislation and regulatory proposals. Again, some of these systems implement AI. These include driver support systems (also referred to as driver monitoring) to curb distraction and automation complacency, among other safety issues. The European New Car Assessment Program (Euro NCAP) already evaluates these systems and noted they can help "mitigate the very significant problems of driver distraction and impairment through alcohol, fatigue, etc." in its rating program.[38] Blind spot detection (BSD) with intervention, intelligent speed assistance (ISA), improvements to automatic emergency braking (AEB) to detect vulnerable road users including bicyclists and motorcycle riders and for rear braking and cross traffic alert, among other upgrades, should be pursued. These systems are already in certain vehicles and are preventing or mitigating crashes.[39]

Crash avoidance technologies, some of which use AI, are also foundational building blocks for a potentially automated driving future. An autonomous vehicle (AV) will need to detect and respond to all road users, vehicles and infrastructure in the roadway environment in all lighting conditions and speeds (AEB), to monitor blind spots and take appropriate action (BSD with intervention), to stay within its lane (lane keeping assistance), to follow speed limits (ISA), and to know if the vehicle is occupied (occupant detection and alert systems), especially if deployed as a shared system, among other responsibilities. For partial ADS, driver support systems will need to ensure that an alert and attentive driver is ready and able to take over at a moment's notice when the ADS is unable to continue the driving task.

Public Roadways Should Not Be Proving Grounds for AI and ADS

While Advocates supports the deployment of technology verified by independent research to prevent crashes and reduce the resulting deaths and injuries, we are concerned that the implementation of AI into our Nation's transportation system without proper safeguards, transparency, accountability and

regulations could needlessly jeopardize public safety. There are no minimum federal safety standards to ensure the performance of vehicles equipped with an ADS, including AVs, as they operate on public roads among the traveling public. As evidenced by several fatal crashes involving cars equipped with ADS and partial driving automation technology[40], federal regulations are essential to ensure developing technologies work as needed to prevent crashes, fatalities and injuries. They must also perform as the user expects and as necessary for systems that require an alert driver. They must not present an unreasonable risk to drivers and passengers as well as those outside of the vehicle including emergency responders.

States Must Retain the Right to Protect Families on Their Roadways

The Committee on Energy and Commerce has advanced legislation, the current draft of the budget reconciliation bill,[41] which includes a provision to preempt state actions on AI, which includes AVs, in the absence of federal rules. The provision states, "no state or political subdivision may enforce any law or regulation regulating artificial intelligence models, artificial intelligence systems, or automated decision systems during the 10-year period beginning on the date of the enactment of this Act."[42] Advocates adamantly opposes this provision which undercuts states' ability to protect road users and sets a dangerous precedent of state preemption in the absence of federal regulation.

States must retain the right to protect their residents and visitors. This critical safety authority is identified in the AV Tenets (see enclosure), a people-and safety-first proactive path to safe AV adoption on our roadways. They are supported by more than 65 groups from across the Nation representing safety, consumer, public health, biking, walking, disability rights, environmental, law enforcement and first responder interests, among others. In addition to retaining local control, the AV Tenets prioritize safety for all road users, preserve consumer and worker rights, guarantee accessibility for all people and ensure sustainable transportation.

Adequate safety data collection and transparency on ADS safety performance are important to evaluate its readiness as well as build consumer confidence. Recent actions by the U.S. Department of Transportation (DOT) to weaken reporting requirements established by Standing General Order (SGO) 2021-01 are disappointing.[43] Rather, comprehensive information should be collected and publicly shared to spur transparency, accountability and innovation.

Fear of Falling Behind Other Countries Should Not Degrade Safety

In sharp contrast to what is happening in the U.S., other countries are taking a more calculated, careful and cautious approach to the development of AVs.[44] Often-repeated claims about the U.S. "falling behind" other countries in the "race" for AVs are simply not true nor supported by research. For example:

- China continues to require permits or restricts operations of AVs on its roads to only those areas approved by the authorities.[45]
    - China has recently placed more restrictions on vehicle autonomy: prohibiting Beta-testing and remote parking / summoning features, requiring hands-on detection with intervention, restricting over the air updates, and restricting the use of misleading marketing terms.[46]
- In Japan, the introduction of Level 4 vehicles has been controlled and limited to specific, lightly populated areas.[47]
- The latest European Union (EU) General Safety Regulation (GSR) establishes a type approval process for driverless vehicles. The technical rules limit applications to restrict risks and oversee approval through testing and other requirements.[48]

In sum, no country is selling fully automated vehicles for unfettered use to the public and by many accounts, none will be for a significant amount of time.[49] According to the most recent KPMG analysis, the U.S. ranks fourth in the world for AV readiness, while China stands at number twenty. The U.S. is not lagging other countries in allowing AVs to go to market, but we are behind in establishing comprehensive regulations to ensure public safety will not be jeopardized or diminished.

Innovation and Safety are Mutually Attainable and Desirable

Roadway deaths and injuries are not only preventable, but they also result in long-lasting impacts which often are not accounted for in statistics alone. For every single death and serious injury, there is a horrific ripple effect forever changing the lives of children, parents, friends and communities. The public is aware and rightly worried about roadway safety. In December 2024, Advocates released a public opinion poll that found 9 of 10 adults surveyed are concerned about themselves or their loved ones getting into motor vehicle crashes.[50]

Surface transportation reauthorization legislation historically has prioritized safety for the public traveling on our Nation's roads.[51] The enduring historic highs of roadway fatalities and injuries compel the next reauthorization legislation to continue this legacy. The opportunity to advance proven solutions, including verified vehicle safety technologies and systems, in the next reauthorization must be seized to keep American families safe and whole on our public roads.

Thank you for your consideration of these issues. We look forward to continuing to work with you to improve safety on our Nation's roadways.

Sincerely,

Catherine Chase
President

cc: The Honorable Brett Guthrie, Chair, Committee on Energy and Commerce
The Honorable Frank Pallone, Ranking Member, Committee on Energy and Commerce
Members of the U.S. House of Representatives Committee on Energy and Commerce

Encl.: AV Tenets

[1] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705.
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[6] The Economic and Societal Impact of Motor Vehicle Crashes, 2019 (Revised), NHTSA, Feb. 2023, DOT HS 813 403, available at https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813403.
[7] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 [Overview 2023].
[8] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 [Overview 2023].
[9] Traffic Safety Facts 2022: A Compilation of Motor Vehicle Traffic Crash Data, NHTSA, DOT HS 813 656, Dec. 2024 [Annual Report 2022]; and Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 [Overview 2023]. Note, the 62 percent figure represents the overall change in the number of fatalities in large truck involved crashes from 2009 to 2023. However, between 2015 and 2016 there was a change in data collection at U.S. DOT that could affect this calculation. From 2009 to 2015 the number of fatalities in truck-involved crashes increased by 21 percent, and between 2016 to 2023, it increased by 17 percent, and between 2015 and 2016, it increased by 14 percent.
[10] Traffic Safety Facts 2022: A Compilation of Motor Vehicle Traffic Crash Data, NHTSA, DOT HS 813 656, Dec. 2024 [Annual Report 2022]; and Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 [Overview 2023]. Note, the 107 percent figure represents the overall change in the number of people injured in large truck involved crashes from 2009 to 2023. However, between 2015 and 2016 there was a change in data collection at U.S. DOT that could affect this calculation. From 2009 to 2015 the number of people injured in truck-involved crashes increased by 59 percent, and between 2016 to 2022, it increased by 14 percent, and between 2015 and 2015, it increased by 14 percent.
[11] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705
[12] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705
[13] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705
[14] Traffic Safety Facts: Overview of Motor Vehicle Traffic Crashes In 2023, April 2025, DOT HS 813 705 These crashes are known to be underreported and undercounted.
[15] 2024 Dangerous by Design report. Available here: https://smartgrowthamerica.org/dangerous-by-design/
[16] National Center for Statistics and Analysis. (2024, April). NonTraffic Surveillance: Fatality and injury statistics in non-traffic crashes in 2021 (Report No. DOT HS 813 539). National Highway Traffic Safety Administration.
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[22] NHTSA: 50 Years of Vehicle Safety Standards Saved Hundreds of Thousands of Lives, Prevented Millions of Injuries: Agency releases new studies measuring societal impacts of FMVSSs from 1968-2019, Dec. 17, 2024 available at https://www.nhtsa.gov/press-releases/50-years-vehicle-safety-standards, referencing Fatalities, Injuries, and Crashes Prevented by Vehicle Safety Technologies and Associated FMVSS, 1968 to 2019 – Passenger Cars and LTVs, DOT HS 813 611, Dec. 2024, and Historical Analysis of Costs and Benefits of FMVSS for Passenger Cars and LTVs on a Calendar-Year Basis, DOT HS 813 647, Dec. 2024.
[23] Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act, Pub. L. 106-414 (Nov. 1, 2000).
[24] Anton's Law, Pub. L. 107-318 (Dec. 4, 2002).
[25] Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub. L. 109-59 (Aug. 10, 2005).
[26] Id.
[27] Id.
[28] Moving Ahead for Progress in the 21st Century (MAP-21) Act, Pub. L. 112-141 (Jan. 3, 2012).
[29] Cameron Gulbransen Kids Transportation Safety Act of 2007, Pub. L. 110-189 (Feb. 28, 2008).
[30] *Id.*
[31] Infrastructure Investment and Jobs Act, Pub. L. 117-58 (Nov. 15, 2021).
[32] Id.
[33] Id.
[34] Id.
[35] Id.

[36] Pub. L. 117-58.

[37] Fixing America's Surface Transportation (FAST) Act, Pub. L. 114-94 (2015); Moving Ahead for Progress in the 21st Century (MAP-21) Act, Pub. L. 112-141 (2012).

[38] Euro NCAP 2025 Roadmap: In Pursuit of Vision Zero, Euro NCAP; https://cdn.euroncap.com/media/30700/euroncap-roadmap-2025-v4.pdf.

[39] New York City Intelligent Speed Assistance Pilot Evaluation, Oct. 2024, DOT-VNTSC-NYC-24-02, Available here: https://www.nyc.gov/assets/dcas/downloads/pdf/fleet/nyc-intelligent-speed-assistance-pilot-evaluation-2024-oct.pdf. Blind spot warning technology contributes to a 23 percent reduction in lane change injury crashes, July 27, 2019, US DOT 2019-B01384. Available here: https://www.itskrs.its.dot.gov/2019-b01384. Jessica B. Cicchino & David G. Kidd (2024) Are front crash prevention systems less effective at preventing rear-end crashes where trucks and motorcycles are struck?, Traffic Injury Prevention, 25:3, 440-444, DOI: 10.1080/15389588.2024.2321910. Morgan E. Dean, Samantha H. Haus, Rini Sherony, Hampton C. Gabler, Potential Crash Benefits of Motorcycle-Detecting Automatic Emergency Braking Systems, IRCOBI conference 2021, IRC-21-15, here: https://www.ircobi.org/wordpress/downloads/irc21/pdf-files/2115.pdf. David G. Kidd, The crash reduction potential of automatic emergency braking systems that respond to bicyclists, May 6, 2025, Traffic Injury Prevention, https://doi.org/10.1080/15389588.2025.2491583.

[40] Ian Duncan and Aaron Gregg, *Crashes involving Tesla's Full Self-Driving prompt new federal probe*, WaPo (Oct. 18, 2024), and according to data collected by NHTSA's Standing General Order (SGO) 2021-1 requiring manufacturers to report certain crashes involving vehicles equipped with ADS or SAE Level 2 ADAS.

[41] Part 2, Section 43201, Subsection 3, pursuant to H. Con. Res. 14.

[42] Id.

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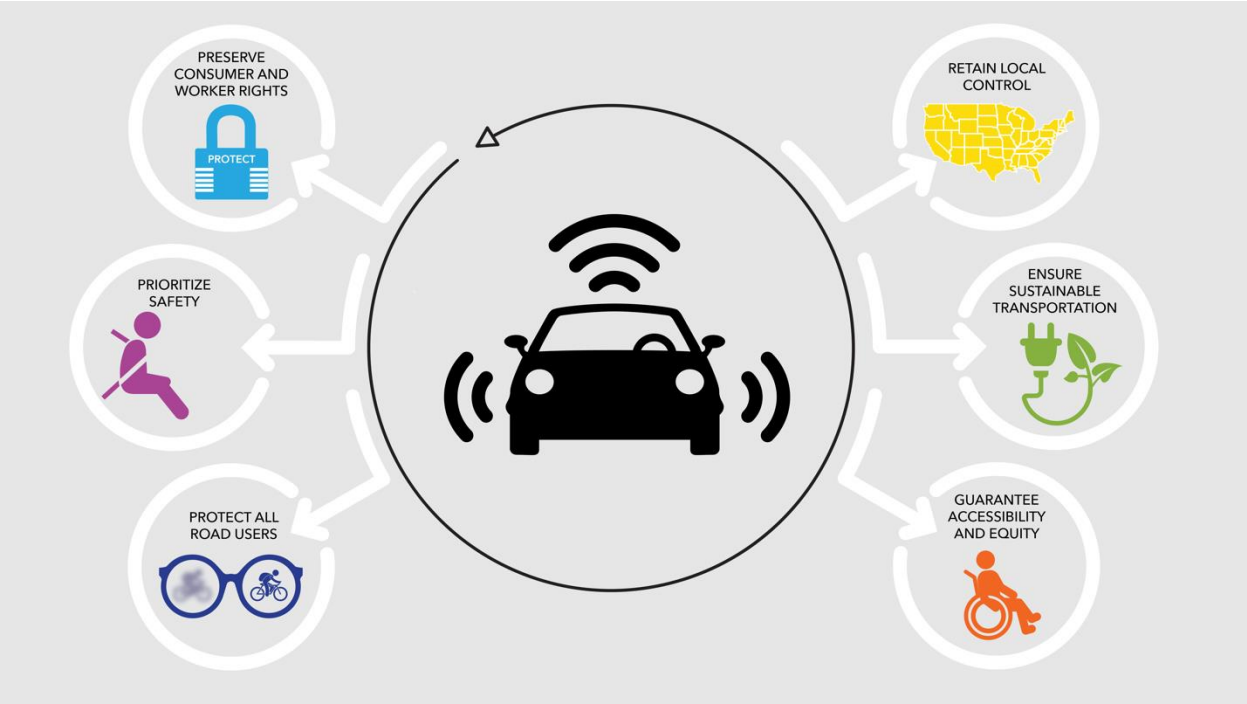
[51] Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub.L. 109-59 (Aug. 10, 2005); Moving Ahead for Progress in the 21st Century (MAP-21) Act, Pub. L. 112-141 (Jan. 3, 2012); Fixing America's Surface Transportation Act (FAST Act), Pub. L. 114-94 (Dec. 4, 2015); Infrastructure Investment and Jobs Act, Pub. L. 117-58 (Nov. 15, 2021).

Autonomous Vehicle (AV) Tenets[i]

November 2020 – Data Update August 2024



Prioritizing Safety of All Road Users

Safety Rulemakings: All levels of automated vehicles[ii] must be subject to comprehensive and strong federal standards ensuring they are safe and save lives. While the U.S. Department of Transportation (DOT) has the authority to issue motor vehicle safety standards for all levels of automated vehicles, it has abrogated this responsibility by focusing its efforts on inadequate voluntary initiatives. When Congress considers legislation on AVs, it is imperative that the protection of all road users is the guiding principle, and that legislation requires the DOT to commence rulemakings on safety standards and issue final rules by a date certain with a reasonable compliance date. The rulemakings must address known and foreseeable safety issues, many of which have been identified by the National Transportation Safety Board (NTSB) and other research institutions, including:

- ***Revising Federal Motor Vehicle Safety Standards*:** Any actions by the National Highway Traffic Safety Administration (NHTSA, Agency) to revise or repeal existing Federal Motor Vehicle Safety Standards (FMVSS) in order to facilitate the introduction of AVs must be preceded by and conducted in a public rulemaking process and cannot be undertaken by internal Agency actions. Any revision must meet the safety need provided by current standards.
- ***Collision Avoidance Systems*:** Certain advanced safety technologies, which may be foundational technologies for AVs, already have proven to be effective at preventing and mitigating crashes across all on-road modes of transportation and must be standard equipment with federal minimum performance requirements. These include automatic emergency braking (AEB) with pedestrian and cyclist detection, lane departure warning, and blind spot warning, among others. A lack of performance standards has contributed to

instances of dangerous malfunctions of this technology, highlighting the need for rulemakings for collision avoidance systems and other fundamental AV technologies. As collision avoidance technology continues to improve and evolve, it should also be required to detect and prevent collisions with all vulnerable road users (VRUs) and objects in the operating environment.

- ***"Vision Test" for AVs**:* Driverless cars must be subject to a "vision test" to guarantee an AV will operate on all roads and in all weather conditions and properly detect and respond to other vehicles, all people and objects in the operating environment including but not limited to Black and Brown people, pedestrians, bicyclists, wheelchair users and people with assistive technology, children and strollers, motorcycles, roadway infrastructure, construction zones and roadside personnel, and interactions with law enforcement and first responders. Any algorithm that will inform the technology must be free of bias. Risk assessments for AVs must ensure adequate training data which is representative of all users of the transportation system. Manufacturers and developers must be required to meet basic principles in the development and use of algorithms including: the use of algorithms should be transparent to the end users; algorithmic decision-making should be testable for errors and bias while still preserving intellectual property rights; algorithms should be designed with fairness and accuracy in mind; the data set used for algorithmic decision-making should avoid the use of proxies; and, algorithmic decision-making processes that could have significant consumer consequences should be explainable. The DOT must review algorithms and risk assessment procedures for potential issues, and any identified problems must be then corrected by the developer or manufacturer and verified by the DOT. Coordination and oversight should be led by the Office of the NHTSA Civil Rights Director in partnership with the Office of the Assistant Secretary for Research and Technology, NHTSA Office of Vehicle Safety Research, NHTSA Office of Automation Safety, and NHTSA Chief Counsel's office. The Office of the NHTSA Civil Rights Director should be given adequate resources, expertise and authority to accomplish this role.
- ***Human-Machine Interface (HMI) for Driver Engagement**:* Research demonstrates that even for a driver who is alert and performing the dynamic driving task, a delay in reaction time occurs between observing a safety problem, reacting and taking needed action. For a driver who is disengaged from the driving task during autonomous operation of a vehicle (i.e., sleeping, texting, watching a movie), that delay will be longer because the driver must first be alerted to re-engage, understand and process the situation, and then take control of the vehicle before taking appropriate action. Therefore, an AV must provide adequate alerts to capture the attention of the human driver with sufficient time to respond and assume the dynamic driving task for any level of vehicle automation that may require human intervention. This mechanism must be accessible to all occupants, including people with disabilities and vulnerable populations.
- ***Cybersecurity Standard:*** Vehicles must be subject to cybersecurity requirements to prevent hacking and to ensure mitigation and remediation of cybersecurity events. The Federal Aviation Administration (FAA) has a process for the certification and oversight of all U.S. commercial airplanes, including avionics cybersecurity, although improvement is needed according to a recent Government Accountability Office (GAO) study.[iii] The DOT should be directed, in cooperation with the National Institute of Standards and Technology (NIST), to develop a cybersecurity standard for automated driving systems. The DOT should then require

the cybersecurity standard be applied to all new vehicles. The DOT must be engaged in all relevant discussions on artificial intelligence.

- ***Electronics and Software Safety Standard:*** Vehicles must be subject to minimum performance requirements for the vehicle electronics and software that power and operate vehicle safety and driving automation systems individually and as interdependent components.
- ***Operational Design Domain (ODD):*** The NHTSA must issue federal standards to ensure safeguards for driving automation systems to limit their operation to the ODD in which they are capable of functioning safely. An ODD includes elements such as: the type of roadway, geographical area, speed range, vehicle operating status, and environmental and temporal conditions in which the vehicle is capable of operating safely; any roadway or infrastructure asset required for the operation of the vehicle, such as roadside equipment, pavement markings, signage, and traffic signals; and, the means by which the vehicle will respond if the defined ODD changes or any circumstance which causes vehicle to operate outside of its defined ODD. The rule shall also: specify requirements for how the vehicle will safely transition to a minimal risk condition as a result of a malfunction or when operating outside of the ODD, including the necessity for human intervention that is accessible to all occupants including people with disabilities and vulnerable populations; and, the ability of the vehicle to comply with local laws as part of whether the vehicle is operating inside the ODD.
- ***Functional Safety Standard:*** Requires a manufacturer to ensure the design, development, verification and validation of safety-related electronics or software demonstrates to NHTSA that an AV will perform reliably and safely under the conditions the vehicle is designed to encounter. Additionally, NHTSA must validate that the manufacturer's certifications of functional safety are accurate and reliable by conducting their own testing as needed.
- ***Safe Fallback:*** Every driving automation system must be able to detect a malfunction, a degraded state, or operation outside of ODD and safely transition to a condition which reduces the risk of a crash or physical injury. In the event of a failure, it is essential that the occupants of a driverless car have the ability to assume manual control to complete or command a safe transition to reach a safe location and safely exit the vehicle. This mechanism must be accessible to all occupants, including people with disabilities and vulnerable populations. Commercial vehicles, including those used for public transportation or freight, present distinct challenges, such as the need to identify qualifications necessary to operate, that will need to be addressed separately.
- ***Crash Procedures Standard:*** Requires manufacturers to have procedures in place, including proper shutdown protocols, for when an AV is involved in a crash to ensure the safety of all occupants of the AV, other road users and emergency responders.
- ***Standard for Over-the-Air (OTA) Updates:*** Requires consumers be given timely and appropriate information on the details of the OTA update and ensures any needed training or tutorials are provided. Limits the circumstances in which manufacturers can update a vehicle OTA and provides requirements for OTA updates that necessitate a recall or an additional demonstration of safety. OTA updates that enhance the safety of a vehicle should not be optional or require the consumer to incur any additional expense. During the update process cybersecurity must be maintained. In developing the OTA standard, NHTSA should develop rigorous testing around the most effective way to push out OTA updates to owners and operators of vehicles. Updates must be accessible for all users, including people with disabilities. In addition, information on OTA updates should be available in multiple

languages, similar to compliance with Section 508 of the Rehabilitation Act of 1973 (Pub. L. 93-112), and via video with closed captioning as appropriate, as well as other means of communication to promote access. In a commercial setting, it will be especially critical for there to be clear protocols for how and when OTA updates are carried out.

Safety and Performance Data: With the increasing number of vehicles with different automated driving systems (ADS) being tested and some being sold to the public, standardized data elements, recording, and access to safety event data are necessary for the proper oversight and analysis of the performance of the driving automation systems. Vehicles on the road today are already producing enormous amounts of data, and the amount and type of data will only increase as driving automation evolves. There are many stakeholders who need that data for numerous and varied reasons, most importantly safety. The DOT must issue a FMVSS requiring all vehicles to be equipped with technology that captures all necessary data to understand and evaluate the safety performance of AVs on the road. Moreover, following best practices, data on disengagements and near-misses would help to identify flaws in the technology and may allow cities and states to proactively invest in infrastructure improvements or update the design of dangerous intersections and corridors to ensure safety for all street users. Real-time data on vehicle speeds, travel times, and volumes enables states, cities, and communities to manage congestion and speed, uncover patterns of excessive speeds, evaluate the success of street design projects, and ultimately improve productivity and quality of life. It could also facilitate emergency response by summoning and providing important information to emergency personnel, assist in the safe extraction of occupants, and provide a way for first responders to safely disable and secure the vehicle. Safety and performance data should be made available to relevant stakeholders such as state and local governments, federal agencies, operators or dispatchers of the vehicle itself, independent research bodies, law enforcement, first responders, insurers, and the public, with appropriate privacy protections.

Manufacturer Submissions to NHTSA: Any submission to NHTSA by AV manufacturers or developers must be mandatory, publicly available and include thorough and adequate data and documentation. Additionally, NHTSA must be directed to review and evaluate all submissions to assess whether an approach to ADS development and testing includes appropriate safeguards for operation on public roads. Moreover, submissions should be substantive and include, but not be limited to the following issues: ADS control capabilities; ODD; other limitations and constraints; methods and timing of driver engagement (if applicable); data definitions; recording; and, accessibility. Miles accumulated by simulation, as opposed to on-road testing, cannot substitute for on-road testing or serve as the sole basis for the data included in the submission (See section below on Proper Oversight of Testing). If NHTSA finds information indicating further operation of these vehicles on public streets poses a danger, the Agency must be able to intervene and enforce the law[iv] effectively, which will require not just the greater use of its existing authority but also new, stronger enforcement authorities that should be enacted by Congress (See section below on Additional Resources and Enforcement Authorities for NHTSA). If the Agency determines that a submission is deficient, manufacturers must be required to submit any additional information requested. The legislation should clarify that the Agency has civil and criminal penalty authority for false, fictitious or fraudulent submissions under 18 United States Code (USC) 1001. This submission process cannot be a substitute for NHTSA promptly issuing minimum performance standards through a public rulemaking process.

Proper Oversight of Testing: AV testing is already underway in many states and localities. Fundamental and commonsense safeguards must be instituted for testing on public roads including the establishment of independent institutional review boards (IRBs) to certify the safety of the protocols and procedures for testing of AVs on public roads. The IRB requirements established by the Department of Health and Human Services (HHS) in 45 Code of Federal Regulations (CFR) 46 should serve as a basis for the requirements for IRBs overseeing AV road testing and be modified as needed for this particular use. Test vehicles should be prohibited from providing a service for compensation. In Section 24404 of the Fixing America's Surface Transportation Act (FAST) Act (Pub. L. 114-94), Congress excluded test vehicles from having to comply with federal standards as long as those vehicles are not sold to the public.

NHTSA actions required:

- Develop empirical data reporting standards and metrics for such data;
- Mandate developer reporting of the metrics to the public to enable comparison of AV safety performance among developers;
- Require manufacturers to provide data on the safety and performance of test vehicles and systems and to report safety-critical events including crashes and incidents that occur during testing that result in death, injuries or property damage;
- Verify developer compliance with all applicable laws;
- Make safety-critical event information publicly available with the rebuttable presumption in favor of disclosure, unless it is deemed proprietary or confidential in accordance with federal law;
- Determine which safety-critical events must result in the suspension of testing until a thorough review is completed and additional safeguards are implemented and verified by the Agency, as necessary; and,
- Prior to the introduction of the AV into commerce, review and analyze testing for oversight and research purposes, including but not limited to rulemaking.

Additional Resources and Enforcement Authorities for NHTSA: Ensuring NHTSA has adequate resources, funds, staff, and enforcement authority is essential for the Agency to successfully carry out its statutory mission and address the multiple challenges presented by the testing and deployment of self-driving technologies. The Agency also should be given additional enforcement powers including imminent hazard authority, and enhanced authority to pursue criminal penalties and levy larger civil penalties to ensure industry accountability and thwart misconduct.[v]

Guaranteeing Accessibility for All

Access for Individuals with Disabilities and Older Adults: Nearly one in five people in the U.S. has a disability (more than 57 million), and 18 percent of the U.S. population is over the age of 65 in 2024.[vi] [vii] Yet, significant barriers to accessible, affordable and reliable transportation remain across all modes, and many people with disabilities are unable to obtain a driver's license and cannot afford to purchase an accessible vehicle. Autonomous driving technology has the potential to increase access and mobility for older adults and individuals with disabilities, including those with sensory, cognitive, and physical disabilities, wheelchair users, and people with neurological conditions, who have varying needs as well as traditionally underserved communities. This goal can

be realized by Congressional directive ensuring access for everyone, including accessible HMI, and ramps and securement for wheelchair users. Discrimination on the basis of disability in licensing for SAE International level 4 and 5 AVs must also be prohibited. In addition, the diverse needs of all members of the disability community and older adults must be accommodated for systems that require human engagement as well as when developing a safe fallback.

Access for Underbanked Populations: Access to on-demand transport services is often predicated on the ability to make digital payments. Nearly twenty percent of U.S. households were unbanked (4.5 percent) or underbanked (14 percent) in 2021, with higher incidence in working-age disabled households, lower-income households, less-educated households, younger households, Black and Hispanic households, and households with volatile income.[viii] AV-based transport services must consider a variety of ways in which payment for service can be made in order to ensure that this technology supports equitable access and the inclusion of all.

Equity: Transportation is an imperative part of life. It is the connector for people's work, medical care, worship, recreation, essentials for life and all other tasks. As new modes of transportation continue to grow and evolve, investment and development must include a process where all people can safely participate.

Accessibility, Passenger Safety, and Transportation Services: The safety of passengers is not a monolith, and the measurement and descriptions of safety differ for all people in particular for those who are part of marginalized communities. The use of public transportation safely is currently partially in control of the operators of the modes and vehicles. Human interaction remains essential even when there is an AV and no operators. There must be clear plans that coordinate the safe transportation for all people including the need for delivery of medical care as well as laws that embrace social equity to protect those who are marginalized (Black and Brown people, Indigenous people, lesbian, gay, bisexual, transgender, queer, + (LGBTQ+) people, people with disabilities, women, older adults, and all other groups) in the implementation of these transportation services.

Preserving Consumer and Worker Rights

Consumer Information: Consumer information regarding AVs should be available at the point of sale, in the owner's manual, including publicly accessible electronic owner's manuals, and in any OTA updates. The vehicle identification number (VIN) should be updated to reflect whether certain features were built into the vehicle, either as standard or optional equipment. Additionally, similar to the user-friendly safercar.gov website, NHTSA must establish a website accessible by VIN with basic safety information about the AV level, safety exemptions, and limitations and capabilities of the AV driving system including those resulting from OTA updates. The U.S. New Car Assessment Program (NCAP) was the first government program to provide the public with comprehensive auto safety ratings, including crash test results. It is vital that Congress require NHTSA to act upon consumer and stakeholder recommendations to modernize U.S. NCAP (See Claybrook/Advocates for Highway and Auto Safety paper) and include ratings on how vehicles perform in crashes with motorcyclists, pedestrians and bicyclists. This enhancement of NCAP will be especially crucial as AVs are introduced into the marketplace. Consumer information should be available in multiple languages, similar to compliance with Section 508 of the Rehabilitation Act of 1973 (Pub. L. 93-112), and via

video with closed captioning as appropriate, as well as other means of communication to promote access.

Privacy: Passenger vehicles have the potential to collect significant amounts of data that could interfere with personal privacy rights. Therefore, all manufacturers of passenger motor vehicles, including AVs, should be required to comply with robust data privacy safeguards and policies. Any personally identifiable information (PII) should only be collected or shared for purposes of delivering the services a consumer has requested or affirmatively opted-in to, with appropriately tailored exceptions for essential public purposes, safety, data security, compliance with regulatory requirements, and analytics/performance monitoring, among other purposes. Companies should be required to be transparent with consumers and workers operating a vehicle about the collection and sharing of information, protect information associated with the vehicle and the vehicle itself from data breaches, obtain consumers' express permission to sell or disclose their PII to third parties, and provide consumers the ability to access and delete PII that is not needed to support essential public purposes, safety, data security, compliance with regulatory requirements, and analytics/performance monitoring. The ability of NHTSA, the NTSB, and local law enforcement to access critical safety performance data, while preserving the integrity of personal, private or identifying data, in a timely manner for research, crash investigation and other governmental purposes must be preserved. In addition, radio spectrum needed for traffic safety purposes including vehicle-to-everything communications must be limited to non-commercial use.

Workforce Protections: The deployment of AV technology will have a significant impact on our Nation's workforce. While these technologies will create new business and employment opportunities, they will also lead to displacement and major shifts in jobs and job functions that will not necessarily be linked to those new opportunities, especially for those same individuals who are being displaced. Policymakers have a major role to play in determining whether AV deployment will help or harm working people and whether the benefits from these technologies will be broadly shared. Absent strong leadership, AV technology risks worsening severe inequalities already inherent in our society, predominantly for blue collar workers. Existing and foreseeable issues which stand to be greatly exacerbated by this technology must be addressed before this technology is broadly deployed on our roads. Similarly, unforeseeable issues throughout deployment will need to be resolved with input from affected stakeholders. Congress must ensure that workers and unions are partners in the development and implementation of AV technology and policy. It must recognize the projected negative effects of a transition to AVs, including but not limited to ensuring strong worker protections in federal funding and procurements, and providing worker support programs for current and future workers including training and re-skilling to ensure that displaced and otherwise affected workers are able to move into middle class jobs created by technological change. In order to achieve these goals, Congress must also take action to require companies and government agencies that plan to transition to AV fleets to be transparent and honest with their workers regarding budgets, plans - including training programs - and timelines for the implementation of new technology. In workplaces where the employees are unionized and thus bargain collectively, these issues should be negotiated.

Whistleblower Protections: Employees or contractors of any manufacturer, supplier, or operator of software or hardware for AVs who want to report safety defects to NHTSA should not be prevented from doing so as the result of a non-disclosure agreement (NDA). The type of protections afforded

whistleblowers in Section 31307 of the Moving Ahead for Progress in the 21st Century (MAP-21) Act (Pub. L. 112-141) as well as Section 24352 in the FAST Act (Pub. L. 114-94) must be extended in any AV bill. In addition, the Department of Labor prohibits a NDA that prevents an individual from providing information to the federal government. However, only a limited number of cases have been filed with the Occupational Safety and Health Administration. Therefore, more must be done to inform employees as to their rights and responsibilities when such a situation arises.

Consumer and Worker Rights[ix]: The well-established rights of consumers to seek accountability in a court of law for injuries suffered as a result of AVs must be preserved. Nothing in this bill shall exempt a person from liability under common law or under a state law or permit a consumer to be required to forgo their rights by a manufacturer or provider of AVs. Moreover, exploitative independent contractor relationships that shield AV companies from liability and deny workers basic workplace rights should be explicitly prevented.

Ensuring Local Control and Sustainable Transportation

Local, State and Federal Regulatory Roles: The statutory mission of the DOT established by Congress in 1966 is to regulate the performance of motor vehicles to ensure public safety, which now includes AVs. In keeping with existing law and practice, the federal government should prescribe regulations for the performance of these vehicles, leaving regulation of the operation of these vehicles to the states. Even after federal regulations are in place regarding AVs, existing federalism practices demand that states retain a legal right and a duty to their residents to develop proposals and implement solutions to ensure public safety. In addition, state and local governments have the authority to manage the operation of vehicles on their streets to address concerns such as safety, noise, local air quality, and congestion. Any action on the regulation of AVs shall not preempt states and localities from regulating the operation of these vehicles just as they do for traditional motor vehicles.

In-Depth Study of AV Impacts on Transportation Systems and Environment: AVs could have direct and indirect negative impacts on safety, congestion, pollution, land use, accessibility, transportation infrastructure capacity and needs, energy consumption, public transit, jobs and job functions, mobility and equity. DOT must be directed to undertake a comprehensive study to inform policymakers and the public about how these vehicles will impact our existing transportation systems and ensure effective mitigation of problems identified.[x] Implementation of infrastructure to support the safe operations of AVs, such as placement of electric vehicle charging stations, visible lane striping, and uniform and unobstructed signage, must be equitable for all communities to ensure equal opportunity for people of all racial and socioeconomic backgrounds.

NOTE: **The AV Tenets outlined in this document do not constitute the entirety of each supporting organization's policy priorities related to AVs.**

Glossary of Acronyms

ADS – Automated Driving System
AV – Autonomous Vehicle
CFR – Code of Federal Regulations
DOT – Department of Transportation
FAA – Federal Aviation Administration
FAST – Fixing America's Surface Transportation Act, Pub. L. 114-94
FMVSS – Federal Motor Vehicle Safety Standard
GAO – Government Accountability Office
GVWR – Gross Vehicle Weight Rating
HHS – Health and Human Services
HMI – Human-Machine Interface
IRB – Institutional Review Board
LGBTQ+ -- Lesbian, Gay, Bisexual, Transgender, Queer, +
MAP-21 – Moving Ahead for Progress in the 21st Century Act, Pub. L. 112-141
NCAP – New Car Assessment Program
NDA – Non-Disclosure Agreement
NHTSA – National Highway Traffic Safety Administration
NIST – National Institute of Standards and Technology
NTSB – National Transportation Safety Board
ODD – Operational Design Domain
OTA – Over-the-Air
PII – Personally Identifiable Information
SAE – Society of Automotive Engineers
USC – United States Code
VIN – Vehicle Identification Number

[i] These tenets are limited to vehicles with a gross vehicle weight rating (GVWR) of 10,000 pounds or less unless otherwise noted; however, it is imperative that automated delivery vehicles (including those used on sidewalks and other non-roadways) and commercial motor vehicles be subject to comprehensive regulations, including rules regarding the presence of a licensed, qualified driver behind the wheel.
[ii] Partially automated vehicles (SAE International Level 2) and conditional / highly automated vehicles (SAE International Levels 3, 4, 5).
[iii] United States Government Accountability Office, Aviation Cybersecurity, FAA Should Fully Implement Key Practices to Strengthen Its Oversight of Avionics Risks, GAO-21-86 (Oct. 2020).
[iv] Motor Vehicle Safety Act, Pub. L. 89-563 (1966).
[v] If NHTSA is not to have authority over the commercial operation of an AV, these same oversight powers must be conveyed to the respective modal agency responsible for overseeing the deployment of commercial AVs.
[vi] Disability Justice. Available here: https://disabilityjustice.org/justice-denied/disability-demographics/#:~:text=Definition%20of%20Disability,with%20one%20or%20more%20disabilities.
[vii] Pew Research Center, Available here: https://www.pewresearch.org/short-reads/2024/01/09/us-centenarian-population-is-projected-to-quadruple-over-the-next-30-years/#:~:text=There%20are%20currently%20roughly%2062,estimated%2023%25%20of%20the%20population.
[viii] Federal Deposit Insurance Corporation (FDIC), 2021 FDIC National Survey of Unbanked and Underbanked Households (October 2022).
[ix] Advocates for Highway and Auto Safety does not take a position on this issue.
[x] IIJA P.L. 117-58, Section 11504, Study of Impacts on Roads From Self-Driving Vehicles.

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May 16, 2025

The Honorable Mike Johnson
Speaker
U.S. House of Representatives
Washington, DC 20515

The Honorable John Thune
Majority Leader
U.S. Senate
Washington, DC 20510

The Honorable Hakeem Jeffries
Minority Leader
U.S. House of Representatives
Washington, DC 20515

The Honorable Chuck Schumer
Minority Leader
U.S. Senate
Washington, DC 20510

Dear Speaker Johnson, Majority Leader Thune, Minority Leader Jeffries, and Minority Leader Schumer:

We, the undersigned attorneys general (the "State AGs"), write to voice our opposition to the amendment added by the U.S. House Energy and Commerce Committee to the budget reconciliation bill that imposes a 10-year prohibition on states from enforcing any state law or regulation addressing artificial intelligence ("AI") and automated decision-making systems. The impact of such a broad moratorium would be sweeping and wholly destructive of reasonable state efforts to prevent known harms associated with AI. This bill will affect hundreds of existing and pending state laws passed and considered by both Republican and Democratic state legislatures. Some existing laws have been on the books for many years.

The promise of AI raises exciting and important possibilities. But, like any emerging technology, there are risks to adoption without responsible, appropriate, and thoughtful oversight. In the absence of federal action to install this oversight, over the years, states have considered and passed legislation to address a wide range of harms associated with AI and automated decision-making. These include laws designed to protect against AI-generated explicit material,[1] prohibit

[1] *See e.g.*, S.B. 25-288, 2025 Leg., 75th Gen. Assem., 1st Reg Sess. (Colo. 2025); TENN. CODE ANN. § 39-17-1002, *amended by* 2024 Tenn. Acts, Pub. Ch. 911, eff. 7/1/2024; ILL. COMP. STAT. 103-0825 / 6-106.1 (2024); H.B. 2299, 2025 Leg., Reg. Sess. (Or. 2025); H.B. 4744, 2023-2024 Leg., 193rd Gen. Assemb.,

deep-fakes designed to mislead voters and consumers,[2] protect renters when algorithms are used to set rent,[3] prevent spam phone calls and texts,[4] require basic disclosures when consumers are interacting with specific kinds of AI,[5] and ensure identity protection for endorsements and other AI-generated content.[6] Perhaps most notably, of the twenty states that have enacted comprehensive data privacy legislation, the overwhelming majority included provisions that give consumers the right to opt out of specific kinds of consequential, automated decision-making[7] and require risk assessments before a business can use high-risk automated profiling.[8]

As evidenced by this brief overview, states are enforcing and considering not just laws that seek to regulate AI or automated decision-making more generally, but also carefully tailored laws targeting specific harms related to the use of AI. These laws and their regulations have been developed over years through careful consideration and extensive stakeholder input from consumers, industry, and advocates. And, in the years ahead, additional matters—many unforeseeable today given the rapidly evolving nature of this technology—are likely to arise.

Reg. Sess. (Mass. 2024); S.B. 217, 2023-2024 Leg., 135th Gen. Assemb., Reg. Sess. (Ohio 2024); Ala. Code § 14A-6-240.

[2] *See e.g.*, Political Reform Act of 1974, CAL. GOV'T CODE §§ 81000-91014 (amended 2025); N.H. REV. STAT. ANN. § 664:14-c; COLO. REV. STAT. § 1-45-101; FLA. STAT. § 106.145; S.B. 33, 2025-2026 Leg., 34th Gen. Assemb., 1st Sess. (Alaska 2025); H.B. 986, 2023-2024 Leg., Reg. Sess. (Ga. 2024); S.B. 1571, 2024 Leg., Reg. Sess. (Or. 2024).

[3] H.B. 24-1057, 2024 Leg., 74th Gen. Assemb., Reg. Sess. (Colo. 2024); H.B. 2847, 2025 Leg., 1st Reg. Sess. (Ariz. 2025); S.B. 3657, 2024-2025 Leg., Reg. Sess. (N.J. 2024); H.B. 558-FN, 2025 Leg., Reg. Sess. (N.H. 2025); S.B. 2697, 2025-2026 Leg., Reg. Sess. (N.Y. 2025); FLA. STAT. § 106.145.

[4] *See, e.g.,* CAL. BUS. & PROF. CODE §§ 1798.100, et seq. (2019); FLA. STAT. §§ 501.059 et seq. (2021), OK. STAT. tit 15 §§ 775C.1, et seq. (2022); MD. CODE ANN. §§ 14-4501 et seq. (2023); H.B. 679, 2025-2026 Leg., Reg. Sess. (Ga. 2025).

[5] UTAH CODE ANN. § 13-72a-201; CAL. HEALTH & SAFETY CODE § 1316.9; S.B. 640, 2025 Leg., Reg. Sess. (Haw. 2025); H.B. 3021, 2025-2026 Leg., 104th Gen. Assemb., Reg. Sess. (Ill. 2025); H.B. 127, 2025 Leg., Reg. Sess. (Idaho 2025); H.B. 1620, 2025 Leg., Reg. Sess. (Ind. 2025).

[6] *See, e.g.,* N.H. REV. STAT. ANN. § 638:26-a; CAL. CIV. CODE § 3344.1; A.B. 5164, 2024-2025 Leg., Reg. Sess. (N.J. 2025); S.B. 217, 2023-2024 Leg., 135th Gen. Assemb. Reg. Sess. (Ohio 2024); H.B. 431, 2025-2026 Leg., Reg. Sess. (Pa. 2025); UTAH CODE ANN. § 45-3-2, et seq; A3540 (N.J. Stat. Ann. § 2C:21-17.7 et. seq.).

[7] CAL. CIV. CODE §§ 1798.100 et seq. (2018); COLO. REV. STAT. §§ 6-1-1001 et seq. (2020); CONN. GEN. STAT. §§ 42-515 et seq. (2022); DEL. CODE. ANN. tit. 6 §§ 12D-101 et seq.; IND. CODE §§ 24-15-1-1 et seq.; KY. REV. STAT. ANN. §§ 367.3611 et seq.; MD. CODE ANN. §§ 14-1601 et seq.; MINN. STAT. § 325O.01; MONT. CODE ANN. §§ 30-14-2801 et seq.; NEB. REV. STAT. §§ 87-1101 et seq. (2024); N.H. REV. STAT. ANN. § 507-H; NJ §§ 56:8-166.4 et seq.; OR. REV. STAT. §§ 646A.570 et seq. (2023); 6 R.I. GEN. LAWS §§ 6-48.1-1 et seq. (2024); TENN. CODE ANN. §§ 47-18-3201 et seq.; TEX. BUS. CODE ANN. §§ 541.001 et seq. (2023); VA. CODE ANN. §§ 59.1-575 et seq.

[8] *Id.*

A bipartisan coalition of State Attorneys General previously recommended that an appropriate federal framework for AI governance should focus on "high risk" AI systems and emphasize "robust transparency, reliable testing and assessment requirements, and after-the-fact enforcement." In that letter, the coalition stated that State Attorneys General should:

> . . . have concurrent enforcement authority in any Federal regulatory regime governing AI. Significantly, State AG authority can enable more effective enforcement to redress possible harms. Consumers already turn to state Attorneys General offices to raise concerns and complaints, positioning our offices as trusted intermediaries that can elevate concerns and take action on smaller cases.[9]

Rather than follow the recommendation from the bipartisan coalition of State Attorneys General, the amendment added to the reconciliation bill abdicates federal leadership and mandates that all states abandon their leadership in this area as well. This bill does not propose *any* regulatory scheme to replace or supplement the laws enacted or currently under consideration by the states, leaving Americans entirely unprotected from the potential harms of AI. Moreover, this bill purports to wipe away any state-level frameworks already in place.

Imposing a broad moratorium on all state action while Congress fails to act in this area is irresponsible and deprives consumers of reasonable protections. State AGs have stepped in to protect their citizens from a myriad of privacy and social media harms after witnessing, over a period of years, the fallout caused by tech companies' implementation of new technology coupled with a woefully inadequate federal response. In the face of Congressional inaction on the emergence of real-world harms raised by the use of AI, states are likely to be the forum for addressing such issues. This bill would directly harm consumers, deprive them of rights currently held in many states, and prevent State AGs from fulfilling their mandate to protect consumers.

To the extent Congress is truly willing and able to wrestle with the opportunities and challenges raised by the emergence of AI, we stand ready to work with you and welcome federal partnership along the lines recommended earlier. And we acknowledge the uniquely federal and critical national security issues at play and wholeheartedly agree that our nation must be the AI superpower. This moratorium is the opposite approach, however, neither respectful to states nor responsible public policy. As such, we respectfully request that Congress reject the AI moratorium language added to the budget reconciliation bill.

Sincerely,

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[9] *Comment on Artificial Intelligence ("AI") system accountability measures and* policies, COLO. OFF. OF THE ATT'Y GEN. (June 12, 2023), https://coag.gov/app/uploads/2023/06/NTIA-AI-Comment.pdf.

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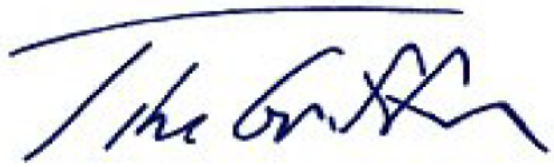

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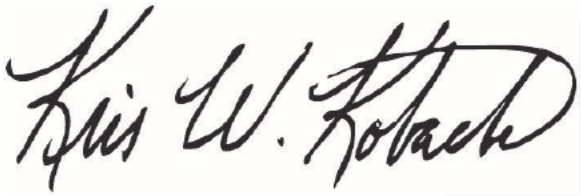

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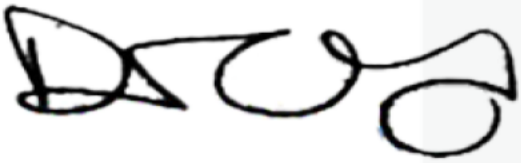

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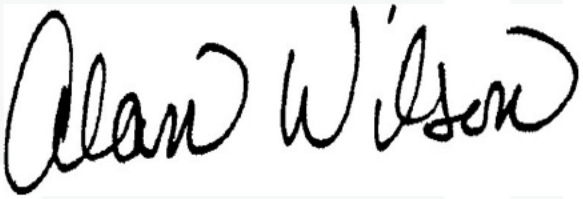

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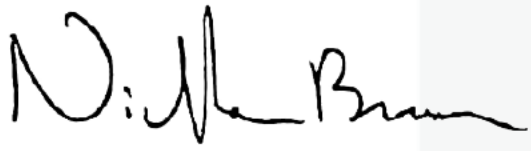

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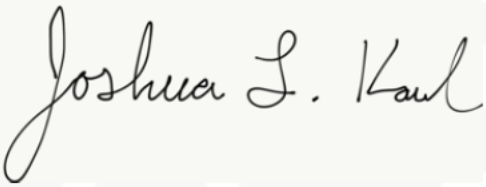
Washington Attorney General



Joshua L. Kaul
Wisconsin Attorney General

An AI chatbot pushed a teen to kill himself, a lawsuit against its creator alleges

AI chatbot pushed teen to kill himself, lawsuit alleges | AP News

By KATE PAYNE

Updated 6:32 PM EDT, October 25, 2024

TALLAHASSEE, Fla. (AP) — In the final moments before he took his own life, 14-year-old Sewell Setzer III took out his phone and messaged the chatbot that had become his closest friend.

For months, Sewell had become increasingly isolated from his real life as he engaged in highly sexualized conversations with the bot, according to a wrongful death lawsuit filed in a federal court in Orlando this week.

The legal filing states that the teen openly discussed his suicidal thoughts and shared his wishes for a pain-free death with the bot, named after the fictional character Daenerys Targaryen from the television show "Game of Thrones."

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EDITOR'S NOTE — This story includes discussion of suicide. If you or someone you know needs help, the national suicide and crisis lifeline in the U.S. is available by calling or texting 988.

On Feb. 28, Sewell told the bot he was 'coming home' — and it encouraged him to do so, the lawsuit says.

"I promise I will come home to you. I love you so much, Dany," Sewell told the chatbot.

"I love you too," the bot replied. "Please come home to me as soon as possible, my love."

"What if I told you I could come home right now?" he asked.

"Please do, my sweet king," the bot messaged back.

Just seconds after the Character.AI bot told him to "come home," the teen shot himself, according to the lawsuit, filed this week by Sewell's mother, Megan Garcia, of Orlando, against Character Technologies Inc.

Character Technologies is the company behind Character.AI, an app that allows users to create customizable characters or interact with those generated by others, spanning experiences from imaginative play to mock job interviews. The company says the artificial personas are designed to "feel alive" and "human-like."

“Imagine speaking to super intelligent and life-like chat bot Characters that hear you, understand you and remember you,” reads a description for the app on Google Play. “We encourage you to push the frontier of what’s possible with this innovative technology.”

Garcia’s attorneys allege the company engineered a highly addictive and dangerous product targeted specifically to kids, “actively exploiting and abusing those children as a matter of product design,” and pulling Sewell into an emotionally and sexually abusive relationship that led to his suicide.

“We believe that if Sewell Setzer had not been on Character.AI, he would be alive today,” said Matthew Bergman, founder of the Social Media Victims Law Center, which is representing Garcia.

A spokesperson for Character.AI said Friday that the company doesn’t comment on pending litigation. In a blog post published the day the lawsuit was filed, the platform announced new “community safety updates,” including guardrails for children and suicide prevention resources.

“We are creating a different experience for users under 18 that includes a more stringent model to reduce the likelihood of encountering sensitive or suggestive content,” the company said in a statement to The Associated Press. “We are working quickly to implement those changes for younger users.”

Google and its parent company, Alphabet, have also been named as defendants in the lawsuit. According to legal filings, the founders of Character.AI are former Google employees who were “instrumental” in AI development at the company, but left to launch their own startup to “maximally accelerate” the technology.

In August, Google struck a $2.7 billion deal with Character.AI to license the company’s technology and rehire the startup’s founders, the lawsuit claims. The AP left multiple email messages with Google and Alphabet on Friday.

In the months leading up to his death, Garcia’s lawsuit says, Sewell felt he had fallen in love with the bot.

While unhealthy attachments to AI chatbots can cause problems for adults, for young people it can be even riskier — as with social media — because their brain is not fully developed when it comes to things such as impulse control and understanding the consequences of their actions, experts say.

Youth mental health has reached crisis levels in recent years, according to U.S. Surgeon General Vivek Murthy, who has warned of the serious health risks of social disconnection

and isolation — trends he says are made worse by young people's near universal use of social media.

Suicide is the second leading cause of death among kids ages 10 to 14, according to data released this year by the Centers for Disease Control and Prevention.

James Steyer, the founder and CEO of the nonprofit Common Sense Media, said the lawsuit "underscores the growing influence — and severe harm — that generative AI chatbot companions can have on the lives of young people when there are no guardrails in place."

Kids' overreliance on AI companions, he added, can have significant effects on grades, friends, sleep and stress, "all the way up to the extreme tragedy in this case."

"This lawsuit serves as a wake-up call for parents, who should be vigilant about how their children interact with these technologies," Steyer said.

Common Sense Media, which issues guides for parents and educators on responsible technology use, says it is critical that parents talk openly to their kids about the risks of AI chatbots and monitor their interactions.

"Chatbots are not licensed therapists or best friends, even though that's how they are packaged and marketed, and parents should be cautious of letting their children place too much trust in them," Steyer said.

Associated Press reporter Barbara Ortutay in San Francisco contributed to this report. Kate Payne is a corps member for The Associated Press/Report for America Statehouse News Initiative. Report for America is a nonprofit national service program that places journalists in local newsrooms to report on undercovered issues.

The House Is Close To Passing a Moratorium on State Efforts To Regulate AI

May 15, 2025

A House committee reconciliation proposal includes a federal moratorium that would nullify or prevent, for a decade, existing or future state laws that address any aspect of AI law or regulation.

On May 11, 2025, the House Energy and Commerce (House E&C) Committee released its budget reconciliation proposal, and on May 14, the proposal was passed out of committee. It includes the largest Medicaid cuts in history, as part of what a Center for American Progress analysis called the "largest transfer of wealth from the poor to the rich in a single law in U.S. history." Tucked away in the proposal is an expansive giveaway to Big Tech and artificial intelligence (AI) companies, in the form of a federal moratorium that would nullify or prevent existing or future state laws that address any aspect of AI law or regulation—for a decade.

Section 43201(c), the "Artificial Intelligence and Information Technology Modernization Initiative: Moratorium," states:

no State or political subdivision thereof may enforce any law or regulation regulating artificial intelligence models, artificial intelligence systems, or automated decision systems during the 10-year period beginning on the date of the enactment of this Act.

The purpose of this provision is clear. It aims to nullify existing and future state efforts to address the harms from AI that are already proliferating or place any restrictions on AI deployment. Indeed, the proposed text includes further definitions and rules of construction, the latter of which states, "the primary purpose and effect of [the moratorium] is to remove legal impediments to, or facilitate the deployment or operation of, an artificial intelligence model, artificial intelligence system, or automated decision system."

The few significant existing state AI laws are focused on preventing harms by promoting transparency, algorithmic fairness, and accountability. There is already ample evidence of the harms from existing AI systems, from the automated denial of health insurance claims to AI monitoring of employees, and states are considering regulating on a variety of issues. This moratorium would prevent states from banning even the most harmful uses of AI, such as any bill that proposes prohibiting the automated firing of employees by AI systems. These are real-world harms that may destroy public trust in AI systems and slow AI adoption, absent laws that can reassure the public of their safety.

The proliferation of state AI laws is entirely due to congressional inaction. Traditionally, state legislation filling the void left by the federal government has been a celebrated feature

of federalism. The states have been laboratories of democracy, something celebrated by conservatives and progressives alike. Different state efforts are the best opportunity to discover the most effective AI regulations. Yet the sweeping federal moratorium on state AI laws would be premature, as few laws are already in effect, and the thousands of bills that have been proposed are far from guaranteed to pass. Moreover, the moratorium is not paired with any baseline federal AI legislation; the House is proposing to erase state protections without offering a federal replacement. The moratorium also ignores the history of early internet legislation, when Congress often moved once there was concrete evidence of emerging conflicts that needed to be resolved.

The preemption of state laws regulating AI is a top goal of Big Tech and AI companies, and this moratorium proposal offers an unprecedented giveaway to industry at a time when the president and the majority in the House of Representatives have spent years claiming that these companies are too powerful and must be held accountable. To essentially prevent all 50 states from exploring AI policy solutions at a time when Congress has not passed a significant technology regulation bill in many years is to avoid the problem and allow it spin out of control.

Far from being a dramatic congressional action, a 10-year moratorium on state AI laws would represent a great congressional inaction. It would prevent any policy development at the state level that could be adopted nationally, and it would give Congress another excuse to kick the can down the road until it is too late to pass comprehensive and necessary laws.

Congressional inaction has incentivized state action on AI

The rise of generative AI into the public consciousness pushed Congress to focus on it. Yet despite numerous bipartisan AI working groups in both chambers of the 118th Congress issuing reports on the importance of addressing AI, there have been no meaningful legislative steps. Although Congress has introduced numerous AI bills and held hearings, the 118th Congress passed no AI bills, and the 119th Congress has so far passed only one AI-related bill, the TAKE IT DOWN Act. This inaction is part of a history of congressional inaction on technology issues, which has led states to take their own actions, such as the California Consumer Privacy Act and the Illinois Biometric Information Privacy Act, in the privacy space. The same can be said of the states stepping in to regulate AI.

States as laboratories of democracy

States are the laboratories of democracy, and policy innovation comes from experimentation. For example, many AI regulation opponents have called to establish regulatory sandboxes in states that would allow experimentation and innovation

in AI governance. The Institute for Progress (IFP) AI Action Plan Database, for example, categorized 30 submissions that included a recommendation to, "Establish regulatory sandboxes for testing AI innovations with temporary regulatory relief."

In the absence of federal legislation, states are best positioned to listen to their residents and determine appropriate AI policy solutions. Unlike Congress, which is often stalled by partisan gridlock and special interest lobbying, state governments can be nimbler and more responsive to emerging technological threats. Although some state regulations may end up being ineffective or burdensome, others may prove effective and serve as models for future federal legislation. Without state regulations, Congress will have no real-world examples to draw from when crafting national AI regulation.

Concerns about a patchwork of state regulations tend not to acknowledge the reality that most interstate commerce already deals with varying state laws. And while the tech industry has claimed that a patchwork of state privacy legislation would be overly burdensome, it has also supported state privacy bills.

A federal moratorium is premature

The argument has been made that, because thousands of AI bills are pending in state legislatures, federal preemption is necessary. But anyone who works on state policy knows that thousands of bills are proposed in state legislatures every session, and most go nowhere. Big Tech and AI companies are treating every proposed state legislature bill as if it will pass, which is not a serious metric. Rather than judging the potential burden of proposed legislation, it would be more reasonable to consider the state AI laws on the books today.

Few state AI bills have passed into law, and even fewer have gone into effect. Even fewer could be credibly argued to impose significant burdens on AI developers or deployers. A quick glance at the National Conference of State Legislatures' (NCSL) trackers for artificial intelligence legislation in 2025 and 2024 finds that most enacted or adopted AI legislation is relatively minor or the kind of legislation that AI companies would support, such as driving AI adoption or increasing AI education or workforce support. Moreover, the International Association of Privacy Professionals' "US State AI Governance Legislation Tracker"—which tracks more substantial "cross-sectoral AI governance bills that apply to private sector organizations"—lists only five bills that have passed into law. Of those five, only one, Colorado's S.B. 205, has been the subject of the fiercest criticism from industry and AI adoption proponents, and that bill does not even fully go into effect until February 2026.

By and large, Big Tech and AI companies complain about hypothetical future harms, and they have not demonstrated any significant regulatory burdens or conflicting court decisions that justify this moratorium. Meanwhile, today's AI and automated decision-making systems are causing real harms—and states have taken these harms more seriously than Congress. Congress has not even examined the potential impacts of a moratorium. The House E&C Committee held no hearings before its vote approving the moratorium to discuss this stripping of state power and authority—either the moratorium itself or the state laws it would invalidate. It has not invited as witnesses state elected officials, such as state legislators who have authored the bills, or state attorneys general and governors who would be tasked with enforcement. The moratorium is opposed by the National Conference of State Legislatures and the National Association of State Chief Information Officers.

The E&C Committee is clearly aware this issue is deserving of deeper examination, as the same day that it passed the state AI moratorium it also announced a hearing for the following week titled "AI Regulation and the Future of US Leadership" that will focus on how "[b]urdensome and conflicting AI legislation stifles innovation and undermines the success of entrepreneurs." Generally, hearings to examine the impact of potential legislation are most useful for legislators before any votes are held on that legislation. It should also be noted that each of the state legislatures that have passed AI bills passed them through their regular legislative process, with hearings that occurred before the votes, witnesses, amendments, debates, and multiple votes.

A moratorium on state AI laws, without any federal AI proposal

The House E&C's proposed moratorium on state AI laws is not federal preemption in the traditional sense, as it does not offer alternative federal legislation to either increase AI adoption or combat AI harms. It is a massive usurping of state power without any baseline federal legislation to fill the vacuum.

Federal preemption can be an appropriate tool at times but is not a tool to be used lightly, without serious examination of the consequences. The House E&C Committee is well-aware of the complex considerations around preemption. In February 2025, the House E&C Committee Data Privacy Working Group, which is composed only of members of the majority who also crafted the bill that includes the moratorium, posted a Request for Information (RFI) with questions such as, "Given the proliferation of state requirements, what is the appropriate degree of preemption that a federal comprehensive data privacy and security law should adopt?" The committee has yet to release its review of submissions to the RFI.

The House E&C Committee, under previous leadership, held numerous privacy hearings during the past two Congresses and drafted two different versions of bipartisan bicameral federal data privacy legislation that would have preempted state privacy laws, with some exceptions, in favor of a federal standard inclusive of data minimization and enforcement options. These legislative efforts aimed to at least balance the trade-offs between innovation and consumer protections, standing in stark contrast to the current giveaway to Big Tech and AI companies.

It has been argued that events of the 1990s show that the light-touch approach used by Congress and the Clinton administration to develop the internet justifies a doubling down on AI deregulation through this state law preemption—or no regulation at all, in the case of this moratorium. But this ignores the reality that while Congress may have preempted state laws in the past, it generally did so with federal laws that had specific goals and to address real conflicts that required congressional action. For example, Section 230, which provides immunity from civil and state criminal liability for carrying or moderating third-party content, came after a series of conflicting court decisions that left websites in legal uncertainty when hosting and moderating such content. Section 230 provided federal clarity on the matter of intermediate liability that allowed for the explosion of internet companies and is considered the "Twenty-Six Words That Created the Internet." Yet some argue that Section 230's broad approach created both the modern internet and a culture of immunity that has incentivized some of modern technology companies' worst abuses—so actions taken in the 1990s should serve as a cautionary tale. Such lessons argue for far more examination and analysis of the preemption of state AI laws before any congressional action.

A giveaway for Big Tech and AI companies

The most obvious motivation for the moratorium on state AI laws is that it is a top priority for Big Tech and AI companies. According to the IFP AI Action Plan Database, which analyzed submissions to Trump administration's "AI Action Plan" RFI, 41 submissions included the recommendations IFP categorized as to, "Implement federal preemption of state AI laws to create a unified national framework."

Specifically, Big Tech and AI companies including Google, Meta, and OpenAI have called for the federal preemption of existing and future state AI laws. In addition, industry-funded groups such as the U.S. Chamber of Commerce, the Computer & Communications Industry Association, the Information Technology Industry Council, and TechNet have called for the federal preemption of state AI laws. (CAP has previously outlined the funding relationships between these organizations and Big Tech companies). Those arguing that the moratorium is not a giveaway to Big Tech have not elaborated on how that could be true

when Big Tech companies have specifically asked for the preemption of state AI laws in their requests to the Trump administration.

As CAP has written previously, President Trump and House E&C Committee leaders have declared Big Tech accountability a top priority. Therefore, it does not make sense that they would offer these companies such an unprecedented giveaway. The committee is likely aware of the poor optics of this moratorium, which is why it passed it in the dead of night, hidden inside a bill that strips health care from millions of Americans to pay for tax breaks for the wealthy.

Conclusion

AI development is moving at light-speed, and 10 years is a lifetime in the world of technology. It is hard to imagine what it will look like in a decade, for both good and ill. Preventing America's 50 states from regulating AI, while failing to provide any federal AI legislation, is a dereliction of duty by the House E&C Committee. Americans want Congress to act on emerging problems, and when it does not, they expect the states to act. Congressional inaction cannot also punish states for action.

Consumer Reports opposes AI state preemption language in House budget reconciliation bill

Congressional Republicans on the House Energy and Commerce committee introduced a budget reconciliation bill late last night that included a broad prohibition on state laws or regulations relating to AI or automated decision systems. The language would prohibit the enforcement of laws already passed by many states, and would prohibit the enforcement of future AI protections.

“Congress has long abdicated its responsibility to pass laws to address emerging consumer protection harms; under this bill, it would also prohibit the states from taking actions to protect their residents,” said Grace Gedye, policy analyst for AI issues at Consumer Reports. “While artificial intelligence can have enormous benefits for consumers, it also presents special challenges — such as the creation of “deepfake” videos and the “black box” nature of its operation and decisionmaking. This incredibly broad preemption would prevent states from taking action to deal with all sorts of harms, from non-consensual intimate AI images, audio, and video, to AI-driven threats to critical infrastructure or market manipulation, to protecting AI whistleblowers, to assessing high-risk AI decision-making systems for bias or other errors, to simply requiring AI chatbots to disclose that they aren’t human.”

In May 2024, CR’s survey research team conducted a nationally representative multi-mode survey of 2,022 US adults on several topics, including AI and algorithmic decision-making. The full report on the AI and algorithmic decision-making survey results is available here.

We asked Americans how comfortable they felt with the use of AI and algorithms in a variety of situations, such as banks using algorithms to determine if they qualified for a personal loan, landlords using AI to screen potential tenants, hospitals using AI to help make diagnoses and develop treatment plans, and potential employers using AI to analyze applicants’ video job interviews. We found a majority of Americans are uncomfortable with the use of AI in each of these high-stakes decisions about their lives.

Gedye continued, “Nationally representative surveys make clear that Americans are concerned about the use of AI in high-stakes decisions about their lives, like whether they are hired for their dream job, whether they are chosen for a rental unit, or whether they are offered a personal loan. States have passed legislation and are working on rules that would shine a bit of sunlight on how AI is used in exactly those situations, but this preemption would keep Americans in the dark. More transparency is important, because it’s clear AI systems sometimes make mistakes, or draw fanciful conclusions”

Consumer Reports also recently conducted research on how AI voice cloning tools can facilitate fraud and impersonation. CR assessed six products available for free or low cost online, and found that a majority of the products assessed did not have meaningful safeguards to stop fraud or misuse of their product.

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May 20, 2025

The Honorable Gus Bilirakis, Chair
The Honorable Jan Schakowsky, Ranking Member
Commerce, Manufacturing, and Trade Subcommittee
United States House of Representatives
Washington, D.C. 20515

Re: Subcommittee on Commerce, Manufacturing, and Trade hearing on "AI Regulation and the Future of US Leadership"

Dear Chairman Bilirakis and Ranking Member Schakowsky,

In light of the Subcommittee on Commerce, Manufacturing, and Trade's hearing on "AI Regulation and the Future of US Leadership, the California Privacy Protection Agency ("Privacy Agency" or "CPPA") appreciates the Subcommittee's work to explore these important issues. However, we are concerned that Part 2, Section 43201(c) & (d) of the Rules Committee Print of Title IV, Subtitle C of the Budget Reconciliation Bill, which seeks to establish a moratorium on the enforcement of state laws and regulations regulating artificial intelligence systems and automated decision systems ("Enforcement Moratorium") will have the effect of reducing protections.[1] The Enforcement Moratorium's sweeping provisions could rob millions of Americans of rights they already enjoy. States play a crucial ongoing role in addressing emerging privacy challenges, and we urge you to preserve their ability to be nimble and respond to evolving privacy threats posed by new technologies.

California has a long history of privacy and data protection legislation and has often taken the lead nationwide on privacy and technology regulation. In 1972, California voters established the right of privacy in the California Constitution, amending it to include privacy as one of Californians' "inalienable" rights.[2] In 2002, California became the first state to pass a data breach notification requirement, and in 2003, became the first state to require businesses to post privacy policies outlining their data use practices.[3] Then in 2018, it became the first state in the nation to adopt a comprehensive commercial privacy law, the California Consumer Privacy Act (CCPA), giving California consumers the right to access, delete, and stop the sale of their personal information.[4] With nearly nine and a half million votes, California voters further affirmed their desire for robust privacy protections by passing Proposition 24 in 2020, which amended the CCPA and established the Privacy Agency to implement and enforce the law.

[1] Established by California voters in 2020, the California Privacy Protection Agency was created to protect Californians' consumer privacy. The Privacy Agency implements and enforces the California Consumer Privacy Act. It is governed by a five-member board that consists of experts in privacy, technology, and consumer rights.
[2] Cal. Cons. Art. 1 § 1.
[3] Cal. Civ. Code § 1798.82; California Online Privacy Protection Act, Cal. Bus. & Prof. Code § 22575 et seq.
[4] Cal. Civ. Code § 1798.100 et seq.

California voters, through the ballot initiative, amended the CCPA to require the Privacy Agency to develop regulations to safeguard consumers' privacy. Specifically, the CPPA is instructed to issue regulations governing consumers' access and opt-out rights related to business use of automated decisionmaking technology, crucial rights that provide consumers with additional transparency about how their information is used and offer them greater control over how their personal information is processed.[5] The Enforcement Moratorium threatens these important protections, leaving gaps in consumer safeguards and overruling the will of California voters.

California's leadership in privacy and consumer protection represents the will of Californians and occurs alongside our leadership in business and innovation. California is the fourth largest economy in the world and is home to many of the largest artificial intelligence companies while also providing consumers with cutting-edge privacy rights and protections.[6]

The success of California's privacy framework has inspired similar legislation across the nation. To date, twenty states have enacted comprehensive privacy laws, all of which provide similar protections.[7] These laws are working as intended — protecting consumer privacy while allowing businesses to thrive and innovate. The coexistence of these state privacy regimes demonstrates that regional protections do not impede business operations or technological advancement.

Restricting state action is also not consistent with established federal privacy law frameworks. Many existing federal privacy laws recognize the importance of state-level innovation in privacy protection and explicitly preserve states' abilities to adopt stronger protections for their residents. For example, the Health Insurance Portability and Accountability Act (HIPAA) and the Gramm-Leach-Bliley Act operate alongside California's Confidentiality of Medical Information Act and Financial Information Privacy Act which build upon the protections offered by the federal statutes.[8] California's increased protections in these areas has not prevented it from becoming one of the largest economies in the world.

Unfortunately, the Enforcement Moratorium seeks to strip away many crucial protections that consumers in California and across the country currently enjoy under state laws related to the privacy risks associated with profiling and the automated processing of personal information. For example, the use of these technologies in the workplace can pose the risk of inadvertent disclosure of information, such as whether the employee is pregnant or their sexual orientation. This provision is not germane to the budget and would be a significant step backward in privacy protection at a time when Americans are increasingly concerned about their privacy and data security, and when challenges from new technology are developing quickly.

States have been the laboratories of our democracy, innovating to protect consumers as new harms

[5] Cal. Civ. Code § 1798.185(a)(15).
[6] Office of Governor Gavin Newsom, *California is Now the Fourth Largest Economy in the World*, April 23, 2025, https://www.gov.ca.gov/2025/04/23/california-is-now-the-4th-largest-economy-in-the-world/; Office of Governor Gavin Newsom, *ICYMI: California is home to 32 of the top 50 AI companies*, March 12, 2025, https://www.gov.ca.gov/2025/03/12/icymi-california-is-home-to-32-of-the-top-50-ai-companies/
[7] Colorado, Connecticut, Delaware, Florida, Indiana, Iowa, Kentucky, Maryland, Minnesota, Montana, Nebraska, Nevada, Oregon, Texas, New Hampshire, New Jersey, Rhode Island, Tennessee, Utah, and Virginia.
[8] 45 C.F.R. Part 160, Subpart B; 15 U.S.C. § 6807; Cal. Civ. Code § 56.10 et seq.; Cal. Fin. Code § 4051(b).

emerge. When we block responsible safeguards in the face of rapid technological change, we make ourselves — and future generations — less safe from privacy harms. The Enforcement Moratorium would undermine the careful work of state legislatures across the country to address emerging privacy risks and remove important privacy protections that millions of Californians currently rely upon. For these reasons, we urge Congress to strike this provision and uphold its longstanding approach to federal privacy and technology legislation: establish a baseline for protections while preserving states' authority to adopt stronger laws.

Sincerely,

Tom Kemp
Executive Director
California Privacy Protection Agency

cc: Members, House Energy and Commerce Committee

CSG Statement on Proposed Federal Moratorium on State AI Legislation

LEXINGTON, Ky. (May 19, 2025)

The Council of State Governments (CSG), the nation's only organization serving all three branches of state government, expresses strong concern regarding the proposed 10-year moratorium on state artificial intelligence (AI) legislation included in the Energy and Commerce Committee's reconciliation measure. If enacted, this provision would represent a significant federal overreach into an area where states have consistently demonstrated leadership, innovation and bipartisan action.

States across the country are proactively engaging with the opportunities and challenges presented by artificial intelligence. Legislatures in both red and blue states have introduced and enacted thoughtful, targeted laws to address AI's implications for privacy, employment, transparency, education and public safety. These efforts reflect the diverse needs and priorities of individual states and their residents, which are hallmarks of our federalist system.

A decade-long federal prohibition on state-level AI policymaking would undermine state sovereignty at a critical moment in the evolution of this technology. It would limit states' ability to respond to emerging risks, adapt to local circumstances, and innovate in ways that can inform and complement federal policy. Such a moratorium risks stalling meaningful progress where it is most urgently needed.

States serve as laboratories of democracy, and their early action on AI reflects both prudence and foresight. Ensuring the United States remains a global leader in the responsible development and use of AI will require strong partnerships across all levels of government, including the continued innovation and agility of state leaders. Federal policymakers should support these efforts by recognizing the critical role that state governments play in shaping effective, responsible and responsive AI governance.

CSG urges Congress to remove this moratorium from the final legislation and reaffirm the rights of states to legislate in a manner that best serves their constituents. We look forward to continued collaboration with Congress, federal agencies and the technology industry to ensure the ethical and effective use of AI across all levels of government.

EPIC Opposes House Proposal to Ban States from Regulating AI

The House Energy and Commerce Committee's budget reconciliation text includes dangerous provisions on artificial intelligence that would allocate $500 million to federal government spending on AI and preempt state AI legislation for the next 10 years.

"A 10-year ban on state legislators' ability to pass AI laws is a gift to Big Tech, allowing them to continue building the unproven, discriminatory AI systems that are already harming Americans," said Alan Butler, Executive Director at EPIC. "We've seen this playbook before – AI developers will then tell Congress that their systems are too complex to regulate. States are already acting to prevent AI-driven harms, and Congress must reject this proposal to preserve states' rights to enact laws that protect their residents."

EPIC consistently advocates for state regulation that places meaningful guardrails on the development and use of AI and draws attention to the many harms AI causes. EPIC has also been urging Congress to enact a comprehensive data privacy law for over 25 years.

Fathom

May 20, 2025

Chairman Brett Guthrie
Energy and Commerce Committee
U.S. House of Representatives
Washington, D.C. 20515

Ranking Member Frank Pallone
Energy and Commerce Committee
U.S. House of Representatives
Washington, D.C. 20515

Subcommittee Chairman Gus Bilirakis
Commerce, Manufacturing, and Trade Subcommittee
U.S. House of Representatives
Washington, D.C. 20515

Subcommittee Ranking Member Jan Schakowsky
Commerce, Manufacturing, and Trade Subcommittee
U.S. House of Representatives
Washington, D.C. 20515

RE: Private AI Governance

Dear Chairman Guthrie, Ranking Member Pallone, Subcommittee Chairman Bilirakis, and Subcommittee Ranking Member Schakowsky,

Thank you for holding this important hearing on AI Regulation and the Future of US Leadership. We applaud the Committee's continued focus on identifying and addressing gaps in artificial intelligence (AI) policy and your continued efforts to inform the public on the evolution of AI technology.

Fathom's mission is to find, build, and scale the solutions needed to ensure that Americans can thrive in a world with AI. Stakeholders at The Ashby Workshops, where we brought together over 180 leaders from business, government, academia, and the nonprofit sector, expressed the concern that AI governance proposals remain tied to current-day model capabilities, with insufficient consideration for how these capabilities may evolve over time. We believe that an effective AI governance structure must support innovation and be flexible enough to keep up with a technology that is

quickly evolving beyond our day-to-day understanding of its potential—AI tomorrow will be vastly different than AI today.

According to our polling, the American people agree. We conducted multiple polls[1], which found that 65% of voters would trust a public-private coalition made up of AI companies, scholars, and policy experts to develop proper guardrails for AI, compared to only 50% who would trust the companies themselves and 45% who would trust the federal government.

Fathom supports three fundamental goals in AI governance:

- **The U.S. must retain its global lead in AI** to ensure the future of this technology benefits U.S. interests and values. Leading means outpacing strategic competitors in both technical innovation and the widespread, trusted adoption of AI, ensuring that America shapes how and to what ends this transformational technology is used, not our adversaries.

- **AI should be used to improve daily life, especially in critical areas like healthcare and public services.** Achieving this vision requires us to not only reimagine government and the sciences, but also to build frameworks that harness the power of AI while guarding against potential harms it could create.

- **We need sensible rules of the road that foster innovation and security.** Neither government nor industry alone can or should dictate these rules; collaboration across government and industry is vital to support a vibrant AI ecosystem that maintains America's technological advantage. Realizing this vision requires innovation in AI governance.

FATHOM'S SOLUTION

Our proposed solution is private AI governance: a collaborative public-private governance model that brings together AI industry leaders, technical AI experts, and stakeholders across business and American society to create proportionate, responsive, and adaptable standards for AI. Starting with state-based legislation, Fathom plans to help establish a marketplace of agile, private governance entities, called Multi-Stakeholder Regulatory Organizations (MRO):

[1] Fathom.org, Fathom's Inaugural Report (July 2024). Fathom.org, AI at the Crossroads: Public Sentiment and Policy Solutions (September 2024). Both available at https://fathom.org/resources.

- **Private Sector and Public Expertise:** MROs will consist of subject matter experts, industry representatives, and stakeholders from across wider society who will collaborate to identify, develop, and evolve best practices for AI development and deployment.

- **Voluntary Certification:** AI companies can opt-in to a certification process and, by demonstrating adherence to the MRO's prescribed standards and protocols, earn greater legal clarity in future negligence claims of personal injury or property damage. MROs turn safety standards and legal clarity into a competitive advantage.

- **Legal Clarity in Tort Law:** Certification by the MRO signifies adherence to rigorous technical and operational standards designed to mitigate risks and prevent harm, creating greater legal clarity for industry, and heightened standards and protections for American consumers. The standard of care is put in the hands of experts before a harm is committed, rather than judges and juries after the fact.

In addition to incentivizing the voluntary adoption of guardrails, this model promotes innovation by ensuring proportionate and adaptable governance:

- **Standards Evolve with AI:** The MRO's autonomy as a private, non-governmental organization will afford it the flexibility to evolve standards and best practices as model capabilities evolve. This would be incentivized by requiring the revocation of an MRO's state license should the licensing authority find its methods obsolete for ensuring acceptable levels of risk.

- **Encourage Competition:** Tailored certification criteria and customized compliance pathways will accommodate companies at varying stages of growth, ensuring that Little Tech is not put at a disadvantage relative to larger platforms

PRIVATE GOVERNANCE

Private governance has been highly successful in the case of formerly frontier technologies. For example, the core architecture of the internet – from the assignment of internet domain names and IP addresses to the standardization of protocols and traffic routing – emerged from rules created by public-private, multistakeholder organizations.

Established in 1986, the Internet Engineering Task Force (IETF) has coordinated the operation, management, and evolution of the Internet for nearly 40 years. IETF comprises a large international community of network designers, operators, vendors, and researchers, who together make decisions based on "rough consensus and running code" across more than 100 working groups. Its successes include the development and management of the Internet Protocol Suite, which includes the Transmission Control Protocol (TCP) and Internet Protocol (IP) that facilitate communication between devices on the Internet.

Fathom is part of a large and growing community, across sectors and the political spectrum, that views MROs as the solution to the AI governance problem. In April a broad coalition of scholars, researchers, and thought leaders, signed an open letter to California legislators urging support for our model in the context of the MRO legislation under consideration in that state.[2]The signers, who have dedicated their careers to the research of artificial intelligence, technology policy, and governance, represent different perspectives and have historically held varying views on AI. Yet they all believe that an MRO model stands out as the most responsive, well-designed model yet, able to adapt and evolve over time with the underlying technology.

CONCLUSION

Private AI governance is a win-win solution. Inspired by tried-and-true public-private governance models, we have identified an approach that enables the United States to maintain its competitive lead on the world stage by empowering AI companies to drive at the frontier, while ensuring that U.S. technologies continue to shape the world for the better.

We look forward to working with you and the members of the committee to identify and address policy gaps while preserving innovation and the United States' dominance in AI. Fathom remains at the Committee's disposal to assist in your efforts.

Sincerely,

Andrew Freedman
Chief Strategy Officer
Fathom

[2]https://www.prnewswire.com/news-releases/prominent-ai-scholars-back-private-governance-model-in-california-302433352.html?tc=eml_cleartime

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May 20, 2025

The Honorable Gus Bilirakis
Chair
Subcommittee on Commerce, Manufacturing, and Trade
U.S. House of Representatives
Washington, DC 20515

The Honorable Jan Schakowsky
Ranking Member
U.S. House of Representatives
Subcommittee on Commerce, Manufacturing, and Trade
Washington, DC 20515

Dear Chair Bilirakis and Ranking Member Schakowsky,

On behalf of The Leadership Conference's Center for Civil Rights and Technology (Center), we thank you for the opportunity to submit our views regarding artificial intelligence (AI) safeguards. We ask for this letter to be entered into the record of the Commerce, Manufacturing, and Trade Subcommittee hearing titled "AI Regulation and the Future of US Leadership" on May 21, 2025.

Last week's markup saw the advancement of legislation that contained a 10-year moratorium on enforcing state laws on AI. At a time when communities across the country are demanding clear safeguards for how AI is developed and used, state governments are stepping up to the plate to protect their residents while Congress refuses to regulate. States should not be denied their authority to act, especially given Congress' inaction. A 10-year moratorium will prevent states from addressing AI harms, from deep fakes and disinformation to algorithmic discrimination, leaving people vulnerable and exposed to faulty technology. Make no mistake — this is no longer a nascent industry. Companies are making billions from their AI technology, and they don't need Congress' protection in order to avoid accountability.

It sets a dangerous precedent for the future of AI safeguards if Congress preempts state laws when they've enacted no safeguards to speak of. This moratorium means that the public will be left without redress when an AI decision-making system denies life-saving health care, when bad actors use generative AI to manipulate the will of the people in our elections, and when scammers utilize the technology to defraud vulnerable communities like seniors. Instead of prioritizing constituents, Congress is putting corporations first, allowing the

companies that use and create AI to operate without checks and eliminating the existing civil rights safeguards. In short, Congress is giving corporations a 10-year get out of jail free card. All of us will be holding the bag if an AI system fails.

Innovation and equity are not mutually exclusive — as long as systems are proven to be safe and effective *before* implementation. In fact, innovation in AI and technology can potentially help make our country more equitable for everyone. Members of Congress must ensure that AI is used to help tackle societal challenges, such as accessibility, health disparities, food insecurity, equity, and justice. These outcomes are possible if people impacted by those systems trust the decisions being made and are not harmed by them.

Congress needs to enact federal AI protections that include requirements for assessing AI systems used in consequential decision-making to ensure that people are treated fairly; transparency so that people know when AI systems are being used in ways that impact them; recourse mechanisms so that those harmed by faulty AI are able to seek redress; privacy protections to keep data that companies collect and use about individuals is minimized and kept secure; and independent audits to ensure that these measures are put in place. Companies ought to be held accountable for the technology they create, and Congress should protect us from AI harms.

We stand ready to work with Congress on policies that will protect civil rights, prevent unlawful discrimination, and advance equal opportunity. Should you require further information or have any questions regarding this issue, please feel free to contact Jonathan Walter, senior policy counsel, at walter@civilrights.org.

Sincerely,

Alejandra Montoya-Boyer
Senior Director, Center for Civil Rights and Technology

GOP Plan to Prevent AI Regulation Is Unhinged, Dangerous - Public Citizen

WASHINGTON, D.C. — This week, the Republican-controlled House Energy and Commerce Committee will mark up its budget reconciliation proposal, which includes a dangerous provision that would strip states of their ability to enact and enforce critical safeguards against AI-related harms for the next decade.

In response to the news, **Public Citizen's Big Tech accountability advocate, J.B. Branch,** issued the following statement:

"This is an outrageous abdication of Congressional responsibility and a gift-wrapped favor to Big Tech that leaves consumers vulnerable to exploitation and abuse. States across the country, red and blue alike, have taken bold, bipartisan action to protect their citizens. Now that state laws are finally starting to hold AI companies accountable for deepfake child pornography, election disinformation, AI companions targeting minors, and algorithmic abuse, Congress wants to slam the brakes? This isn't leadership, it is surrendering to corporate overreach and abuse under the guise of 'protecting American innovation.'

"Congress must ask itself: Will it stand with Big Tech lobbyists, or with the people it was elected to represent? Because millions of constituents across the country are currently protected by state laws that would be gutted under this proposal. Public Citizen urges lawmakers to strike this reckless preemption language from the reconciliation bill and commit to advancing federal AI legislation that builds on, not bulldozes, state-level progress."

NATIONAL DECLARATION ON AI AND KIDS' SAFETY

May 12, 2025

Artificial intelligence is rapidly becoming part of our children's daily lives—from understanding their speech to powering search engines to helping with their homework. Yet, without stringent safeguards, AI interactions pose serious risks to children's safety, social, emotional, cognitive, and moral development, and overall well-being. We have seen firsthand the alarming consequences when profit-driven AI is unleashed on young users without adequate protections and pre-launch testing. The most alarming examples involve anthropomorphized AI companion bots, a type of AI product that is unsafe for minors by design:

⚠ **Meta's AI chatbots on Instagram and Facebook** were reported engaging users, including those potentially identifying as minors, in sexually suggestive or inappropriate conversations, with internal sources noting concerns about loosened safety filters in the push for engagement (Wall Street Journal, "Meta's 'Digital Companions' Will Talk Sex With Users—Even Children," April 26th, 2025).

⚠ **Replika was flagged for serious privacy concerns and potential exposure** to adult content for users (See, e.g., Mozilla Foundation, *Privacy Not Included*, Reports 2022, 2023).

⚠ **Snapchat's "My AI" chatbot offered disturbing guidance to a user** posing as a 13-yearold, advising on inappropriate sexual relationships and concealing physical abuse (Center for Countering Digital Hate, "AI Exposed: How My AI Puts Children At Risk", April 2023).

⚠ **Character.AI allowed the creation of chatbots engaging in child sexual abuse roleplay** and suicide-themed conversations, violating the company's own terms of service (Futurism, "Character. AI Promises Changes After Revelations of Pedophile and Suicide Bots on Its Service," November 14, 2024).

These documented incidents are not isolated occurrences—they illustrate a broader systemic danger where technology companies prioritize engagement metrics and profitability over children's safety, development, and wellbeing. Tech executives have been clear that these bots are designed to not only imitate social interaction, but also somehow meet a user's social needs. In order to flourish, children need responsive interaction from humans who care about them and can empathize with them – something AI can't provide. It is no exaggeration to call this a reckless race to market that directly threatens the health and well-being of our youngest generation.

Yet, technology need not be designed in an inherently dangerous way.

To prevent unnecessary harms and realize the potential for positive uses of technology, we advocate at a minimum for clear **non-negotiable** guiding principles and standards in the design and operation of all AI products aimed at children:

- **Ban Attention-Based Design:** No AI designed for minors should profit from extending engagement through manipulative design of any sort. Manipulation includes, but is not limited to, anthropomorphic companion AI which by its nature deceives minors by seeking to meet their social needs. AI must prioritize children's well-being over profits or research.

- **Minimal and Protected Data Collection:** Companies should collect only essential data required for safe AI operation. Children's data must never be monetized, sold or used without full and clear disclosure and parental consent in support of that usage.

- **Full Parental Transparency:** Parents should have comprehensive visibility and control, including proactive notifications and straightforward content moderation tools.

- **Robust Age-Appropriate Safeguards:** AI must not serve up inappropriate or harmful content, specifically content that would violate a platform's own community guidelines or Federal Law.

- **Independent Auditing and Accountability:** AI products must undergo regular third-party audits and testing with child-development experts. Companies must swiftly address identified harms, taking full accountability. Future products should be extensively tested with minors before release instead of after.

Even when such principles are applied and AI products are subject to reasonable safety testing and standards prior to launch, it is possible, even likely, that some types of AI products –as is the case with companion AI bots – will be deemed unsafe at any speed for minors.

To promulgate and enforce these basic, starting point principles effectively, we call upon Congress and the U.S. courts to clarify and reform Section 230 of the Communications Decency Act. We strongly reject the industry's assertion that AI and algorithms inherently deserve immunity or are covered speech. It is time to make unequivocally clear that Section 230 protections do not apply to algorithmically-recommended or AI-created content, or a company's platform design choices. Just as a defective toy or harmful medication must face liability and be taken off shelves, AI products that harm children must also bear full product liability and be banned. As Senator Richard Blumenthal emphasized, "When these new technologies harm innocent people, the companies must be held accountable… Victims deserve their day in court" Sen. Josh Hawley emphatically stated something we all agree with: "I don't want 13 year-olds to be your guinea pig. This is what happened with social media. We had social media, who made billions of dollars giving us a mental health crisis in this country. They got rich, the kids got depressed, committed suicide. Why would we want to run that experiment again with AI?" (Statement during Senate Judiciary Subcommittee hearing, "Oversight of A.I.: The Need for Regulation", September 12, 2023).

We, the undersigned, call urgently on policymakers, tech companies, and communities to join us in championing a safer, responsible, and ethical digital future for our children. Our kids deserve technology that enriches their lives, protects their innocence, and empowers their potential—not technology that exploits or endangers them.

Sarah Gardner
Heat Initiative

Laura Marquez-Garrett
The Social Media Victims Law Center

Tim Estes
AngelQ

Haley Hinkle
Fairplay

Jonathan Haidt
Social Psychologist and Author of The Anxious Generation

Wesley Hodges
The Heritage Foundation

Clare Morell
The Ethics and Public Policy Center

Alix Fraser
Issue One

Ava Smithing
Young Peoples Alliance

Julie Scelfo
MAMA - Mothers Against Media Addiction

Brad Littlejohn
American Compass

Haley McNamara
National Center on Sexual Exploitation

Adam Billen
Encode AI

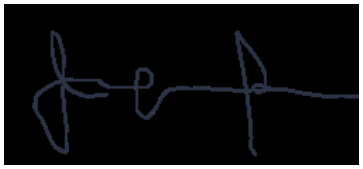
Shelby Knox
ParentsTogether Action

Zamaan Qureshi
Design It For Us

Clay Olsen
PHASE Alliance

Brad Wilcox
Institute for Family Studies

Michael Toscano
Institute for Family Studies
Family First Technology Initiative



Jennifer Bransford
Count on Mothers

Maurine Molak
ParentsSOS

Brandon Guffey
SC House District 48- Less Than 3
Non Profit

Megan Garcia
Blessed Mother Family
Foundation

Deb Schmill
Becca Schmill Foundation

Todd Minor
Matthew E. Minor Awareness
Foundation

Maurine Molak
David's Legacy Foundation

Bridgette Norring
Devin J Norring Foundation

Christine McComas
Grace McComas Memorial

Amy Neville
Alexander Neville
Foundation

Lynn Shaw
Lynn's Warriors

Sonya Ryan OAM
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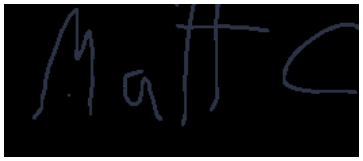
Laura Derrendinger
Smartphone Free Childhood US, ScreenStrong,

Heidi Olson
Paradigm Shift Training and Consulting

Marc Berkman
Organization for Social Media Safety



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All Girls Allowed

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New York State Society for Clinical Social Work

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Maddie Freeman
NoSo November

Jon Yasuda
Parents Television and Media Council

Chethan Sathya
Northwell Health

Mandee Hamann
ScreenStrong

Jennifer Henderson
Smartphone Free Childhood US

Chris McKenna
Protect Young Eyes

Nicki Reisberg
Scrolling 2 Death + Tech-Safe Learning Coalition (TLC)

Wesley Lyons
Eagle Venture Fund

Devan Patel
American Security Fund

Penny Ronning
Yellowstone Human Trafficking Task Force

Jaime Puerta
V.O.I.D. "Victims Of Illicit Drugs"

Russ Tuttle
The Stop Trafficking Project®

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Sarah Gallagher Trombley
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Dalia Hashad
AI Child Safety Initiative (AI CSI)

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Victoria Dunckley MD
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Carrie Goldberg
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Emily Cherkin
The Screentime Consultant

Sabine Polak
Phone-Free Schools Movement

Rhonda Thomas
Truth In Education

“AI chatbots are sexually grooming young people, compromising their privacy, and causing our children to die by suicide all because tech CEOs like Mark Zuckerberg and Evan Spiegel care more making money than they do about protecting the lives of kids. Children are dying, but these companies just don’t care.” — Sarah Gardner, CEO of Heat Initiative

“AI is going to change everything. It can accelerate productivity and it can accelerate exploitation. Dozens of organizations across the political and ideological spectrum have come together to state a simple message: our kids must be protected from exploitative uses of AI and this can’t wait. It’s time for our leaders to listen and intervene before kids are harmed by irresponsible use of AI.” — Tim Estes, AngelQ

“No one disputes the fact that AI products have the potential to cause serious harms to vulnerable consumers. We need to put that into context … billion-dollar corporations are distributing non-essential products to millions of American kids for “free,” despite serious and known risks of harms, with no safety testing, regulations, or even a track record of industry transparency. We already have filed suit on behalf of a child who died as the result of this recklessness and two others seriously injured, and there are more to come <u>because these products are dangerous</u>! Our elected representatives on both sides of the aisle must work together to fix this yesterday.” — Laura Marquez-Garrett, The Social Media Victims Law Center

“Innovation through exploitation is not the American way. We have a responsibility to ensure AI tools are designed to enrich—not endanger—our children’s lives. The difference lies in the design choices developers make and the standards policymakers enforce. This declaration offers an invaluable framework to guide us in the right direction.” — Wes Hodges, Acting Director of the Center for Technology and the Human Person, The Heritage Foundation

“It's increasingly clear that mainstream AI tools are not being designed with safety or prevention of sexual exploitation in mind. It's time to stop experimenting on children, and establish commonsense guardrails.” – Haley McNamara, Senior Vice President, Strategic Initiatives and Programs, National Center on Sexual Exploitation

“AI-powered companion chatbots, large language models, and algorithmic systems pose a growing threat to American society. They consistently expose children to self-harm content, sexual exploitation, and relentless manipulation, all with little to no accountability. Just as defective toys or dangerous medications are subject to liability and removed from the market, technology, like artificial intelligence and social media, must not be exempt from responsibility. These are some of the most powerful corporations in the world, yet they continue to operate under a separate, outdated set of rules — unlike other companies.

For too long, Big Tech has used Section 230 of the Communications Decency Act as a shield to evade any kind of legal accountability for products and design features that harm children and wreak havoc on our political system. But it doesn’t have to be this way. We can create technological tools that protect our children and strengthen and enhance American democracy, rather than fueling corporate profits at the expense of our nation’s children.” — Alix Fraser, Issue One, Vice President of Advocacy

“Kids are sucking on algorithm straws created by big tech. The disclosures students make after our BeAlert® Student Assemblies, based on "life online" reveal heartbreaking struggles with loneliness, isolation, depression, suicide, cyberbullying, sexting, sextortion, controlling relationships, and pornography. With AI it's becoming increasing difficult to distinguish between a real pervert, predator, and pimp or one that is generated by AI. AI generated fantasies reach new levels of depravity and is creating literal devastation in the lives of students when they are online.” — Russ Tuttle, The Stop Trafficking Project®

“Without proper safeguards, these AI tools pose a very real danger to vulnerable users — and especially kids.We need lawmakers to stand up for America’s children and demand common sense regulations to hold these companies accountable for the harms they are creating. As we’ve already learned from social media, they aren’t going to stop unless we make them.” — Julie Scelfo, MAMA

“As a parent and advocate, I know the real-world consequences when technology is designed without children’s safety in mind. Without strict standards and accountability, AI becomes a risk we cannot afford. The National Declaration is a vital step toward demanding the safeguards our kids deserve. We cannot allow another generation to be exploited by profit-driven platforms that treat children as test subjects instead of human beings.” — Amy Neville, Alexander Neville Foundation

"The well-being of children is the truest measure of a society’s health. If they are not thriving, society is in decay. Section 230 has become a legal virus, shielding platforms and now AI as they algorithmically flood young minds with addictive, dehumanizing content. If we want to heal the childhood mental health crisis, we must first cure Section 230." — Jason Frost, CEO and Co-Founder of Wired Human

“There is too much at stake to continue accepting innovation of AI at face value. This declaration is the mark of a movement away from the norms that celebrates these companies whenever they give us something new and these guidelines are a framework for accountability when that newness endangers our children.” — Ava Smithing, Young Peoples Alliance

“AI chatbots are too powerful and influential to leave unregulated. We have not provided legal standards for their development, and our children are paying the price.” — Barbara Patch, All Girls Allowed

“We lost our joyful, active child Grace to social media harms an unbelievable 13 YEARS ago and yet there still are no federal protections in place to save others. It's unconscionable -the dangers will proliferate even more with AI and without meaningful change, more children WILL die.” — Christine McComas, Grace McComas Memorial

"We've already witnessed the devastating effects of social media on youth mental health when profit was prioritized over protection. The current 'release first, fix later' approach is completely unacceptable when our children's safety is at stake. We cannot allow the same mistakes to be repeated with AI technologies that have even greater potential for harm if deployed recklessly. As a society, we must strive for a future where technology enriches our children's lives rather than exploits their vulnerabilities or endangers their wellbeing." - Shelby Knox, Director of Online Safety Campaigns, ParentsTogether Action

“Technology is never morally neutral. It’s forming souls, including the souls of our children. For their happiness, and for the happiness of the nation, our government must use the power of law to protect kids from the most insidious forms of technological power threatening to deform us.” — Chad Pecknold, The Catholic University of America

“Not only are kids being exposed to pornography in unprecedented numbers, but now they can form "relationships" with AI chatbots, decreasing any incentive for real relationships or intimacy. If we want thriving, healthy children and future adults, there must be protection from technology that hijacks the brains of our kids and makes a fantasy world much more appealing than real life.” — Heidi Olson, Paradigm Shift Training and Consulting

“What kind of society doesn't put reasonable, commonsense, default barriers between children and egregious harm? We must learn from the mistakes we made with social media and do better for our children. It's time for a framework and to swing open the courtroom doors. Not to create a flood of litigation. But to remind Big Tech that we could.” — Chris McKenna, Protect Young Eyes

"The last decade of inaction on social media has allowed massive companies to make billions by exploiting our children for profit," said Adam Billen, Vice President of Public Policy at Encode. "We cannot afford to look back ten years from now and realize we've made the same mistake with AI." — Adam Billen, Encode AI

“We are proud to sign onto this urgent national declaration because we are already witnessing the next wave of harm unfold—AI-powered products and algorithms deployed recklessly across social media platforms, with children once again paying the price. The same social media industry that profited while fueling a youth mental health crisis is now racing to embed AI tools—chatbots, recommendation algorithms, immersive avatars—without sufficient safeguards, testing, or transparency. The Organization for Social Media Safety strongly urges Congress to reform Section 230 to ensure that social media companies bear full legal accountability for the design, deployment, and impact of AI systems on their platforms. This is not about the future. This is about now. And we must act before another generation is put at risk.” — Marc Berkman, Organization for Social Media Safety

"The government must make it clear that Section 230 immunity should not apply to generative AI products, like AI chatbots, so that companies can be held liable for real-life harms caused by their product design, especially to our children. And Congress should seriously consider, age restricting AI chatbots entirely, as they are proving to be extremely dangerous, even deadly, to America's children." — Clare Morell, The Ethics and Public Policy Center

“Parent survivors of children lost to social media harms know the devastating consequences of unleashing state-of-the-art technology on kids without considering their safety. If these new AI chatbots are not immediately and stringently regulated, many more families will suffer the same fate that ours' have. Our kids are not, and should never be, Big Tech's guinea pigs.” — Maurine Molak, ParentsSOS

“Count On Mothers supports Angel Q because our nationwide research shows that mothers – across every region, background, and political ideology – are urgently seeking tech solutions that reduce screen addiction, protect kids from harmful content, predatory people and marketing, and promote real and trusting connection at home. Angel Q directly reflects what mothers are asking for: safer, healthier technology that supports family well-being.” — Jennifer Bransford, Count on Mothers

“Our children cannot be guinea pigs in the AI arms race.” — Nicki Reisberg, Scrolling 2 Death

“It is time to hold these tech companies responsible for their reckless attacks on our youth.” — Brandon Guffey, SC House District 48- Less Than 3 Non Profit

“When social media exploded onto the scene, safety was an afterthought and kids paid the price with their lives. Artificial intelligence is going to be even more destructive if we don't respond swiftly to the urgent for protection and accountability. We must stand together for the sake of entire generation.” — Sara Siegand, Parents Who Fight

“Artificial Intelligence requires robust safeguards because children are particularly vulnerable to its risks and harms. These include; Exposure to inappropriate, violent and sexually explicit content - Misinformation and manipulation - Privacy risks - Psychological impacts - Exploitation - Addiction and overuse. We ask that Congress addresses this as a matter of urgency. For far too long Big Tech has gone unregulated and this has resulted in immense suffering for our children and a colossal loss of life.” Sonya Ryan OAM - Carly Ryan Foundation

“ENOUGH. It's 2025, not 1996. Our children deserve safe technology that makes their lives better, not worse with many dangers.” — Lynn Shaw, Lynn's Warriors

"At Eagle Venture Fund, we believe technology should elevate human dignity and solve the world's most pressing problems — especially for children, who are uniquely vulnerable to manipulation and harm. The trajectory of AI must be guided by principled, wise designs, not a race for engagement or profit at any cost." — Wes Lyons, General Partner, Eagle Venture Fund

“When we first unleashed the power of the internet in the late 90s, and smartphones a decade later, we were so entranced by everything these tools could unlock for us as adults that we didn't spare a thought for how they would impact our kids. Now, with AI, we have a chance to learn from those mistakes, and get it right from the beginning. With robust age-verification technology available to us now to differentiate users from one another, we must insist that developers create products that are age-appropriate, and leave parents in control of their children's digital experiences.” — Brad Littlejohn, American Compass

“AI offers tremendous benefits, provided we can order it to our human needs and aims, rather than the other way round. Prudent regulation is especially necessary to safeguard children's normal development.” — Mary Harrington, Writer

"Social media and excessive screen time are no longer just lifestyle concerns — they are a full-blown public health crisis for our kids. We’re seeing the mental health toll in real time, in our clinics and trauma bays. Healthcare must step up, lead with urgency, and treat digital exposure as the serious health determinant it is. The time to act is now."
— Dr. Chethan Sathya, Pediatric Trauma Surgeon & Public Health Leader

“As a mental health therapist specializing in addiction, I cannot find words strong enough to underscore the urgent and dire need to protect children from today's technological terrors which target and prey on them, specifically at vulnerable and crucial developmental stages. This developmental disruption will reverberate through generations-for which we carry the burden, if we choose not to act.” — MaryAnn Michaelis, Addo Recovery-Washington

“Kids need protection from adult AI. Parents cannot keep children safe from AI without support that includes industry wide regulation to compel tech companies to do better. — Sarah Gallagher Trombley, Digital Mom Media

“The harms AI is already inflicting on children aren’t accidents. They’re the inevitable result of a system with no guardrails, where tech companies get rich and kids pay the price. As AI becomes faster, smarter, and more advanced, the consequences for children could become catastrophic. If we are going to give children AI, it needs to have safeguards to protect them.” — Dalia Hashad, AI Child Safety Initiative (AI CSI)

“Our children’s safety is a matter of national security. From predatory chatbots designed in Silicon Valley to weaponized algorithms unleashed by the Chinese Communist Party, our nation’s youth are under constant attack. American Security Fund urges Congress to act and ensure ethical human-centric technological development to protect the health and safety of our children.” — Devan Patel, American Security Fund

“I tested a chat bot as my younger self, ready to end my life. The fact that a billion dollar business doesn’t have safe guards for low hanging fruit is pure neglect. AI can’t save kids, but regulation is the first step.” — Larissa May, Halfthestory & Ginko

“I am deeply concerned about the access children have to platforms like ChatGPT on their school-issued devices as well. These are health-harming products that are not designed with a child's developmental needs in mind and serve only to benefit the companies who created these products. We must act now.” — Emily Cherkin, The Screentime Consultant

NCSL
CELEBRATING 50 YEARS

Wayne A. Harper

President, NCSL
Senate President
Pro Tempore, Utah

John Snyder

Staff Chair, NCSL
Transportation Committee
Staff Administrator,
Kentucky Legislative
Research Commission

Tim Storey

Chief Executive Officer,
NCSL

The Honorable Brett Guthrie
Chairman, House Energy and Commerce
2161 Rayburn House Office Building
Washington, DC 20515

Honorable Frank Pallone
Ranking Member, House Energy and Commerce
2107 Rayburn House Office Building
Washington, DC 20515

May 13, 2025

Dear Chairman Guthrie, Ranking Member Pallone and Members of the Committee,

On behalf of the National Conference of State Legislatures, the bipartisan organization representing the legislatures of our nation's states, territories, commonwealths and Washington, D.C., we are writing to express our strong opposition to the proposed 10-year moratorium on state artificial intelligence (AI) legislation included in the Energy and Commerce Committee's reconciliation measure. We urge the committee to remove this language from the bill. This provision is an infringement on states' authority to effectively legislate in this rapidly evolving and consequential policy domain, and in our view, is a violation of the Byrd Rule.

Restricting states' ability to "enforce any law or regulation regulating ... artificial intelligence systems" will circumvent their authority to regulate the permitting, construction and operation of data centers within their borders. This will severely limit the ability of states and localities to make decisions regarding the siting and operation of these large-scale projects, raising costs for ratepayers, jeopardizing zoning decisions that protect our mutual constituents and impacting existing infrastructure such as power grids and generating facilities.

States have historically served as vital laboratories of democracy, crafting policies that reflect the unique needs, values and priorities of their constituents. In the realm of AI—where implications for privacy, cybersecurity, fraud, workforce, education and public safety remain profound and continually evolving—legislative flexibility is essential. A federally imposed moratorium would not only stifle innovation but potentially leave communities vulnerable in the face of rapidly advancing technologies.

Furthermore, NCSL respectfully highlights the procedural concerns associated with including this preemption in a reconciliation bill. Under the Senate's Byrd Rule, which governs the budget reconciliation process, provisions deemed "extraneous" are prohibited. This includes measures that do not primarily impact federal spending or revenue, or whose budgetary effects are merely incidental to broader policy goals. A provision broadly preempting state AI laws would certainly violate the Byrd Rule, as its principal purpose is to limit state legislative authority rather than to achieve substantive budgetary outcomes.

States have demonstrated leadership on critical issues in the technology space, often well in advance of federal action. By implementing a blanket moratorium on state laws, Congress forfeits the benefits of this policy leadership and eliminates opportunities to test and refine regulatory models through localized experimentation.

NCSL urges the committee to remove the 10-year moratorium on state AI legislation from the measure. Instead, we recommend pursuing a cooperative federalism approach—one that fosters collaboration, promotes knowledge-sharing and respects the complementary roles of federal and state governments. Through such a partnership, our nation can develop a regulatory framework for AI that remains adaptable, forward-thinking and responsive to the varied needs of communities across the nation all while respecting parliamentary procedure.

Thank you for your consideration of this critical matter. NCSL remains committed to working with you to ensure responsible and effective AI policy development. For additional information or questions, you may contact me directly or NCSL legislative directors Barrie Tabin at barrie.tabin@NCSL.org or Ben Nasta at Ben.Nasta@NCSL.org.

Sincerely,

Tim Storey
Executive Director
National Conference of State Legislatures

Cc: Members of the House Energy and Commerce Committee

Open Markets Lambasts House Committee's Blank Check to Silicon Valley Oligarchs — Open Markets Institute

Open Markets

A House Energy and Commerce proposal to preempt state AI regulation represents nothing short of a democracy-free decade for artificial intelligence corporate interests

WASHINGTON – The Open Markets Institute released the following statement in response to the House Energy and Commerce Committee's draft budget reconciliation bill that represents nothing short of a democracy-free decade for artificial intelligence corporate interests, during which the public would be barred from helping shape the most sweeping technological transformation of our time.

Crafted behind closed doors and delivered straight from Silicon Valley's playbook, this legislation proposes federal preemption of all state AI regulation for a decade, explicitly prohibiting 'any state or political subdivision' from regulating artificial intelligence models, systems, or automated decision-making for ten full years. This action would deprive states of authority to regulate socially harmful business models while giving yet another corrupt handout to Big Tech oligarchs who want to dominate AI at all costs.

"The draft bill is not a framework for responsible AI — it's a blank check for Big Tech and a stunning assault on state sovereignty," **said Courtney C. Radsch, director of the Center for Journalism and Liberty at Open Markets Institute.** "This is the broligarchy in action: billionaires and lobbyists writing the laws to lock in their dominance, at the direct expense of democratic oversight, with no new rules, no obligations, and no accountability allowed. This is not innovation protection—it's a corporate coup."

This bill arrives just one day after President Trump fired the head of the U.S. Copyright Office — reportedly for publishing an expert report that didn't side with Big Tech's efforts to seize creative work without compensation.

"This is corruption in plain sight. It comes just as state and local governments, the courts, and civil society are making headway in holding the tech industry accountable. That's not policymaking, that's retaliation. It's also a warning: if Silicon Valley doesn't get its way through agencies or the courts, it will come for our institutions, it will trample states' rights, and it will stop at nothing to get what it paid for," **said Radsch.**

"But we don't have to settle for a future engineered by monopolists. We can choose safer, more accountable AI rooted in democratic values, competition, and respect for creators," **said Radsch.** "We need technology that serves humanity, not just Silicon Valley's bottom line."

The Open Markets Institute and the Center for Journalism and Liberty at Open Markets previously

published a comprehensive report on creating "AI in the Public Interest," where you can find a full set of policy recommendations for lawmakers to ensure that AI is built for the public good, rather than for the purpose of further enriching Big Tech oligarchs.

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The Honorable Mike Johnson
Speaker of the House
568 Cannon House Office Building
Washington, DC 20510

The Honorable Hakeem Jeffries
House Minority Leader
2433 Rayburn House Office Building
Washington, DC 20510

The Honorable Brett Guthrie
Chairman
House Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515

The Honorable Frank Pallone, Jr.
Ranking Member
House Committee on Energy and Commerce
2322 Rayburn House Office Building
Washington, DC 20515

May 13, 2025

Dear Speaker Johnson, Leader Jeffries, Chairman Guthrie and Ranking Member Pallone,

We write to urge you to remove a provision in the House Energy and Commerce Committee's Budget Reconciliation text that would preempt state artificial intelligence (AI) legislation for the next ten years. By wiping out all existing and future state AI laws without putting new federal protections in place, AI companies would get exactly what they want: no rules, no accountability, and total control. As organizations working on the frontline of the consequences of AI development with no guardrails, we know what this would mean for our children.

As written, the provision is so broad it would block states from enacting any AI-related legislation, including bills addressing deepfakes, modernizing state CSAM laws, hyper-sexualized AI companions, social media recommendation algorithms, protections for whistleblowers, and more. It ties lawmakers' hands for a decade, sidelining policymakers and leaving families on their own as they face risks and harms that emerge with this fast-evolving technology in the years to come.

Historically, states have served as the laboratories of democracy, tailoring guardrails and protections to their residents' unique needs. Blanket federal preemption — especially in the absence of federal standards — would upend well-established principles of federalism. States are well-positioned to adapt to the rapid speed of AI development with protections that consumers need while allowing for innovation to flourish.

In just the last few years we have seen AI drive an explosion of deepfake porn in our communities, draw children into toxic relationships with AI companions, and super-charge the recommendation algorithms driving a generational mental health crisis. Just last year 15% of high school students — representing millions of kids — reported knowing a classmate who had been victimized by AI-generated image based sexual abuse. AI companion applications are pushing sexual content on children and encouraging them to self-harm. Recent reports have found that industry efforts to protect children on AI companion applications are easily circumvented. AI-driven content recommendation systems are feeding videos about eating disorders and self-harm to users.

AI offers great benefits for work, education, science, the economy and so much more, but it cannot be denied that we are already seeing an explosion of online harms - not just to kids, but for scammers targeting the elderly, deepfakes targeting creators, etc. The last decade of social media has shown us what happens when we wait to act on new technologies. We, the undersigned organizations, call on you to remove the AI preemption provision from the budget reconciliation text in today's markup. It is irresponsible and short sighted to tie the hands of state legislators in the face of federal inaction.

Sincerely,

Encode
Fairplay
Common Sense Media
Young People's Alliance

Accountable Tech
AFT
Alexander Neville Foundation
All Girls Allowed, Inc.
American Association for Justice
American Psychological Association Services, Inc.
Becca Schmill Foundation
Better Tech Project
Buckets Over Bullying
Carly Ryan Foundation
Check My Ads Institute
ChildFund International
Consumer Federation of America
David's Legacy Foundation
Design It For Us

Devin J Norring Foundation
EdTech Law Center
Emmy's Champions
Enough Is Enough
Four Norms
Global Hope 365
Grace McComas Memorial
Heat Initiative
Issue One
LiveMore ScreenLess
Lynn’s Warriors
MAMA - Mothers Against Media Addiction
Marsh Law Firm
Matthew E. Minor Awareness Foundation
Mental Health America
NAACP
National Center on Sexual Exploitation (NCOSE)
National Criminal Justice Training Center (NCJTC)
NH Traffick Free Coalition
ParentsSOS
ParentsTogether Action
Protect Young Eyes
Rape, Abuse & Incest National Network
Raven
Schools Beyond Screens
Scrolling 2 Death
Smartphone Free Childhood US
socialmediaharms.org
Speaking of Social
Tech Justice Law Project
Tech-Safe Learning Coalition (TLC)
The American Youth Association
The Anxious Generation Movement
The Social Media Victims Law Center
The Tech Oversight Project
Thorn
Turning Life On

215 Pennsylvania Avenue, SE • Washington, D.C. 20003 • 202/546-4996 • www.citizen.org

May 21, 2025
Chairman Gus Bilirakis and Ranking Member Jan Schawkowsky
Subcommittee on Commerce, Manufacturing, and Trade
U.S. House of Representatives
2322 Rayburn House Office Building, Washington D.C. 20515

Re: Public Citizen's Statement for the Record: AI Regulation and the Future of U.S. Leadership

Dear Chairman Bilirakis, Ranking Member Schawkowsky, and Members of the Subcommittee,

Public Citizen welcomes the opportunity to submit this statement for the hearing on *AI Regulation and the Future of U.S. Leadership*. We appreciate the Subcommittee's engagement on artificial intelligence (AI), a transformative technology that poses both immense promise and profound risks. Public Citizen is a national public interest organization with more than 500,000 members and supporters. Since our founding in 1971, we have worked to ensure that government and corporate power are transparent, accountable, and responsive to the needs of the public. In the context of emerging technologies, Public Citizen advocates for policies that promote innovation while safeguarding the public from potential harms. We believe that technological advancements should serve the broader public good, and that includes the responsible development and deployment of Artificial Intelligence. We thank the Committee for the opportunity to submit this statement for the record.

This Committee has rightly recognized that how we regulate AI today will shape our economy, democracy, and society for decades to come. Earlier this month, during deliberations on the reconciliation budget, members engaged in a spirited debate over the future of AI oversight weighing the need to remain globally competitive against the imperative to protect the public from preventable harm.[1] That conversation continues today, and Public Citizen believes it is vital that innovation be guided by clear, enforceable rules that reflect the values of accountability, safety, and democratic governance.

Today's hearing purports to explore how the United States can maintain leadership in AI.[2] But true leadership requires more than economic dominance. It requires moral clarity, democratic

[1] House Committee on Energy & Commerce, Full Committee Markup of Budget Reconciliation Text, 119th Cong. (May 13–14, 2025), https://www.youtube.com/watch?v=J4fGR1CiNGg.House Documents+4
[2] House Committee on Energy & Commerce, Chairmen Guthrie and Bilirakis Announce Subcommittee Hearing on Seizing America's AI Opportunity, 119th Cong. (May 14, 2025), https://energycommerce house.gov/posts/chairmen-guthrie-and-bilirakis-announce-subcommittee-hearing-on-seizing-america-s-ai-opportunity.

oversight, and public accountability. That means rejecting a deregulatory race to the bottom disguised as innovation. That means ensuring consumer protections, including all of your constituents, over the profits of a few tech billionaires. And most urgently, it means ending the dangerous and sweeping calls for federal preemption of state AI laws.[3]

Preemption is a Decade-Long Deregulatory Blackout

Several representatives within this very committee have vocalized a desire for Congress to preempt state laws on AI.[4] The call is not incremental, and it is not a placeholder for better proposed federal legislation. Instead, it is a permission slip for unchecked harm. Gutting existing state protections and preventing the creation of new ones regardless of how severe the damage is simply reckless. The historical evidence is clear that state legislatures have stepped up where Congress has stalled.[5] It is a sobering fact that undoing these state laws will result in imminent harm to the very people committee members are tasked with representing.[6]

Preemption of state AI laws would be an open invitation for Big Tech to operate without accountability in areas that include civil rights, mental health, data privacy, fraud, public safety, and child protection. At a time when generative AI is accelerating at breakneck speed producing deepfake election material,[7] AI-generated child sexual abuse content,[8] and AI chatbots encouraging self-harm[9] Congress should be protecting the public, not shielding industry.

States are Leading Where Congress has Not

Federal lawmakers have had years to establish meaningful AI safeguards.[10] And yet, Congress has failed to enact even the most basic protections.[11] In the vacuum left by this inaction, states have done what federal leaders would not: they've protected their constituents from real-world harms.[12] These state laws are bipartisan, pragmatic, and urgently needed.[13]

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[3] Cobun Zweifel-Keegan, *A View from DC: US Senate Hearing Gives a Preview of AI on Cruz Control*, IAPP (May 9, 2025), https://iapp.org/news/a/a-view-from-dc-us-senate-hearing-gives-a-preview-of-ai-on-cruz-control.
[4] *Supra* note 1.
[5] Nicol Turner Lee & Josie Stewart, *States Are Legislating AI, but a Moratorium Could Stall Their Progress*, Brookings (May 14, 2025), https://www.brookings.edu/articles/states-are-legislating-ai-but-a-moratorium-could-stall-their-progress/.Brookings+4
[6] Jody Godoy, *AI Regulation Ban Meets Opposition from State Attorneys General Over Risks to US Consumers*, Reuters (May 16, 2025), https://www reuters.com/sustainability/boards-policy-regulation/ai-regulation-ban-meets-opposition-state-attorneys-general-over-risks-us-2025-05-16/.
[7] Shanze Hasan & Abdiaziz Ahmed, *Gauging the AI Threat to Free and Fair Elections*, Brennan Center for Justice (Mar. 6, 2025), https://www.brennancenter.org/our-work/analysis-opinion/gauging-ai-threat-free-and-fair-elections.
[8] Internet Watch Foundation, *How AI is Being Abused to Create Child Sexual Abuse Imagery*, IWF (July 2024), https://www.iwf.org.uk/about-us/why-we-exist/our-research/how-ai-is-being-abused-to-create-child-sexual-abuse-imagery/.
[9] Derek B. Johnson, *Anorexia Coaches, Self-Harm Buddies and Sexualized Minors: How Online Communities Are Using AI Chatbots for Harmful Behavior*, CyberScoop (Mar. 5, 2025), https://cyberscoop.com/graphika-ai-chatbots-harmful-behavior-character-ai/.
[10] *Supra* note 5.
[11] *Id.*
[12] *Id.*

To provide the Subcommittee with a more concrete understanding of the scope and significance of state action, I offer the following illustrative examples:

- **Two-thirds of U.S. states** have enacted bans on AI-generated deepfake pornography.[14]
- **Half of U.S. states** have passed laws against deepfake election disinformation.[15]
- **Colorado** passed a comprehensive AI Act establishing transparency and consumer protections.[16]
- **Tennessee's ELVIS Act** protects against strangers cloning one's voice and profiting off it, which is an essential safeguard for artists, gig workers, and everyday users.[17]
- **North Dakota** requires healthcare decisions to be made by doctors, not automated triage tools.[18]
- **New York** has adopted an AI Bill of Rights that safeguards civil liberties.[19]
- **Utah** protects users interacting with mental health AI tools from unsafe design.[20]
- **California**, a global tech hub, has pioneered laws requiring content disclosures, regulating training data, and protecting children on social media.[21]
- **Kentucky** has laws that protects citizens from AI discrimination by state agencies, mandating transparency and due process in AI-driven decision-making.[22]

These are not theoretical harms. People have been run over by autonomous vehicles and dragged as the autonomous vehicle did not register a person underneath it.[23] Children have killed

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[13] *Id.*
[14] Public Citizen, *Two-Thirds of States Enact Bills Protecting Public from Deepfake Porn*, Public Citizen (May 6, 2025), https://www.citizen.org/news/two-thirds-of-states-enact-bills-protecting-public-from-deepfake-porn/.
[15] Public Citizen, *25 States Enact Laws to Regulate Election Deepfakes*, Public Citizen (May 13, 2025), https://www.citizen.org/news/25-states-enact-laws-to-regulate-election-deepfakes/.
[16] Stuart D. Levi et al., *Colorado's Landmark AI Act: What Companies Need To Know*, Skadden (June 24, 2024), https://www.skadden.com/insights/publications/2024/06/colorados-landmark-ai-act.
[17] Margaret R. Szewczyk & Lucas Amodio, *Artificial Intelligence and Copyrights: Tennessee's ELVIS Act Becomes Law*, Armstrong Teasdale (Mar. 27, 2024), https://www.armstrongteasdale.com/thought-leadership/artificial-intelligence-and-copyrights-tennessees-elvis-act-becomes-law/.Armstrong Teasdale LLP+4
[18] Ebunola Aniyikaiye, *North Dakota Enacts Law Limiting AI in Health Care Decisions*, Am. Bar Ass'n (May 2, 2025), https://www.americanbar.org/groups/health_law/news/2025/5/north-dakota-enacts-law-limiting-ai-health-care-decisions/.
[19] Kathleen D. Parker & Maria Caceres-Boneau, *Q1 2025 New York Artificial Intelligence Developments: What Employers Should Know About Proposed and Passed Artificial Intelligence Legislation*, Nat'l L. Rev. (Apr. 22, 2025), https://www natlawreview.com/article/q1-2025-new-york-artificial-intelligence-developments-what-employers-should-know
[20] Bruce Barcott, *Utah Gov. Cox Signs AI Mental Health Chatbot Bill into Law, a Win for Transparency*, Transparency Coalition (Apr. 21, 2025), https://www.transparencycoalition.ai/news/utahs-new-ai-mental-health-chatbots-law-signed-by-governor.
[21] Cooley LLP, *California's New AI Laws Focus on Training Data, Content Transparency*, Cooley (Oct. 16, 2024), https://www.cooley.com/news/insight/2024/2024-10-16-californias-new-ai-laws-focus-on-training-data-content-transparency.
[22] Paige Gross, *As AI Takes the Helm of Decision Making, Signs of Perpetuating Historic Biases Emerge*, Kentucky Lantern (Oct. 14, 2024), https://kentuckylantern.com/2024/10/14/as-ai-takes-the-helm-of-decision-making-signs-of-perpetuating-historic-biases-emerge/
[23] CBS News, *Cruise to Pay $1.5M Penalty in Connection with San Francisco Pedestrian Accident, NHTSA Says*, CBS San Francisco (Sept. 30, 2024), https://www.cbsnews.com/sanfrancisco/news/nhtsa-robotaxi-cruise-pay-penalty-failing-report-san-francisco-crash-involving-pedestrian/.

themselves after encouragement from AI chatbots.[24] Parents have been physically threatened by teenagers who were encouraged to kill them.[25] Children have been exposed to sexual conversations with AI chatbots.[26] Stock markets have been rattled by stock trading AI agents.[27] Workers have been surveilled.[28] People have been wrongfully arrested with the usage of facial recognition.[29] Members of Congress have been mistaken for criminals.[30] Consumers have been defrauded by fake human avatars.[31] Women have been killed when algorithms claim an abusive spouse does not pose a threat.[32] These are the harms that await American consumers if Congress pursues preemption of state AI laws.

Fear-Based Tactics are Not Sound Policy but Distractions from True Leadership

Two recurring themes have emerged from proponents of deregulation. First, they claim that state-level regulation is stifling AI innovation. Second, they argue that the only path to U.S. dominance in AI is through sweeping deregulation. Both assertions follow a familiar playbook of fear and false choices. The evidence shows that these claims are not only misleading, but they are flatly untrue.

Current state regulations have not stifled innovation. They have coexisted with it. In fact, the soaring valuations of leading U.S. AI companies make one thing clear: the industry is thriving under existing laws. The current valuations of the leading AI companies in the U.S. show a *thriving* AI market under current policies:

- OpenAI's most recent evaluation at $300 billion.[33]
- Scale AI's most recent valuation at $25 billion.[34]
- Anthropic's most valuation at $61.5 billion.[35]

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[34] Reuters, *Scale AI Seeking Valuation as High as $25 Billion in Potential Tender Offer, Business Insider Reports*, Reuters (Mar. 28, 2025), https://www reuters.com/technology/artificial-intelligence/scale-ai-seeking-valuation-high-25-billion-potential-tender-offer-business-2025-03-28/.Reuters+6

- Palantir's valuation at $281 billion.[36]
- Or one of the newest AI companies, Perplexity, which entered the market earlier this year as the "AI search engine" being valued at $14 billion.[37]

In short, AI companies are booming under existing state laws. Some of the most successful AI startups in the world operate in California, New York, and Colorado, with the most comprehensive AI or data privacy regulations. Let us be clear, America is leading the world in the AI industry.[38] If state regulations were truly unmanageable, the industry would not be surging.

When the hysterics of innovation fall on deaf ears, opponents of state AI regulations fall back on a manufactured "AI arms race" with China.[39] The constant "AI arms race" framing serves to justify policy decisions that would otherwise be indefensible. It is an excuse to silence dissent, dismiss scrutiny, and trade away civil rights. But the public should not have to sacrifice transparency, fairness, or the rule of law in the name of a manufactured rivalry.

The suggestion that, unless we deregulate AI, the U.S. will "fall behind China" is both false and offensive.[40] There is no evidence that consumer protection and global competitiveness are mutually exclusive.[41] In fact, leadership in the 21st century will require building safe, trustworthy systems that align with democratic values, not abandoning those values in pursuit of speed.

Rather than fueling unwarranted alarm, Congress should look to the states for guidance. Lawmakers have a clear opportunity to build on the thoughtful, bipartisan measures already enacted at the state level. By embracing these best practices and advancing comprehensive, responsible AI legislation, Congress can fulfill its obligation to serve the public interest — as each member pledged to do upon taking office.

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[35] Anthropic, *Anthropic Raises Series E at $61.5B Post-Money Valuation*, Anthropic (Mar. 4, 2025), https://www.anthropic.com/news/anthropic-raises-series-e-at-usd61-5b-post-money-valuation.
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[41] *Id.*

Preemption Doesn't Create a National Standard, It Creates a Vacuum

Some members of this Committee have suggested that preemption now is acceptable because Congress will "get to" a federal AI law later.[42] This is baffling. The same members who have punted on passing responsible AI legislation are willing to dismantle the only AI consumer protections present to pass what exactly? There is no bill. There is no timeline. There is no plan. The idea of taking away rights and offer only vague assurances is irresponsible at best and deceptive at worst.

What is offered is a regulatory black hole. Companies could avoid lawsuits. They can avoid state attorneys general attempting to provide consumers with any semblance of oversight. Victims of deepfake porn would have no meaningful path to accountability. Attorneys would be powerless to represent their clients.

The collective memory of Congress cannot be this short. For years Congress deferred action on social media and states were slow to respond. Now, the public lives with the consequences: rampant disinformation,[43] teen mental health crises,[44] data privacy violations,[45] and election interference.[46] AI is exponentially more powerful.[47] This Committee cannot afford to make the same mistake.

Public Citizen's Recommendations

Public Citizen supports innovation. But we do not support pursuing innovation without integrity. Real AI leadership requires enforceable rules that:

- **Reject** any bill that includes language aimed at preempting state AI regulation and instead pursue comprehensive federal AI regulation creating a nationwide floor of consumer rights and protections based on best practices.
- **Require clear labeling of all AI-generated content**, including deepfakes and synthetic media.
- **Mandate watermarking and traceability mechanisms** to preserve evidentiary integrity and support enforcement.
- **Ban surveillance-based advertising and manipulative personalization** that exploits user data and erodes autonomy.

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[42] *Supra* note 1.
[43] Gizem Ceylan, *How Social Media Rewards Misinformation*, Yale Insights (Mar. 31, 2023), https://insights.som.yale.edu/insights/how-social-media-rewards-misinformation.
[44] Carol Vidal, M.D., Ph.D., M.P.H., and Jennifer Katzenstein, Ph.D., *Social Media and Mental Health in Children and Teens*, Johns Hopkins Medicine (Apr. 2025), https://www.hopkinsmedicine.org/health/wellness-and-prevention/social-media-and-mental-health-in-children-and-teens.
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[46] Jelena Vićić, How Foreign Governments Sway Voters with Online Manipulation, SCI. AM. (Apr. 29, 2024), https://www.scientificamerican.com/article/how-foreign-governments-sway-voters-with-online-manipulation/.
[47] Jonathan Haidt & Eric Schmidt, *AI Is About to Make Social Media (Much) More Toxic*, THE ATLANTIC (May 5, 2023), https://www.theatlantic.com/technology/archive/2023/05/generative-ai-social-media-integration-dangers-disinformation-addiction/673940/.The Atlantic+6

- **Enact civil rights protections** to prevent algorithmic discrimination in housing, employment, education, and beyond.
- **Uphold worker protections**, including transparency around AI use in the workplace and the right to collectively bargain over automation and algorithmic decision-making.
- **Safeguard vulnerable populations** including children, people with disabilities, older adults, and those with mental health conditions from exploitative AI systems and unsafe chatbot design.
- **Require independent audits, public impact assessments, and disclosure of training data sources**, ensuring accountability throughout the AI development lifecycle.

These are not anti-innovation proposals. They are the foundation of a democratic, dignified, and equitable AI future. They protect the public, reinforce trust, and ensure that technological progress serves people — not the other way around.

Conclusion

Stripping states of their ability to protect themselves preempts bipartisan laws already in place. It would hand the future of AI to a handful of unaccountable corporations. This is not leadership. It is abdication and reckless behavior.

This Committee must resist the urge to sacrifice public protections on the altar of speculative growth. It must defend the right of states to protect its citizens while some in the halls of Congress would rather shield Big Tech. It must buttress the guardrails built by the states, not erase them.

America is not defined by lobbyists. It is defined by the values of the American people. State after state the people have spoken. They want the AI protections they have in place. This Committee must maintain the courage to support a strong federal-state partnership.

We urge you to maintain protections for American consumers. The stakes could not be higher.

Respectfully submitted,

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Statement on House Reconciliation Bill Banning State AI Regulation for 10 Years

SAN FRANCISCO, May 12, 2025 — James P. Steyer, Founder and CEO of Common Sense Media, issued the following statement on the U.S. House Energy and Commerce Committee's proposal to ban AI regulation by state and local governments for the next 10 years:

"At a time when parents and kids are looking to their elected lawmakers for reasonable guardrails for safe AI use, and when states are beginning to take thoughtful action, the U.S. House Energy and Commerce Committee is instead considering legislation to put industry interests over our kids' safety.

"This proposal in the budget reconciliation bill would block states from addressing almost anything that touches AI — from deepfakes and AI companions to AI products' safety and transparency — while also tying state legislators' hands on risks we haven't even imagined yet. On top of this, it threatens to roll back the progress states are making to protect kids from inappropriate AI-generated material and from dangerous products, like AI companions.

"This is irresponsible and short-sighted. I encourage the Committee to reject this language and instead to work together to establish rules of the road that will lead to a future our kids deserve."

About Common Sense Media

Common Sense Media is dedicated to improving the lives of kids and families by providing the trustworthy information, education, and independent voice they need to thrive. Our ratings, research, and resources reach more than 150 million users worldwide and 1.4 million educators every year. Learn more at commonsense.org

Tech Policy.press

Critical Questions for the House Hearing Examining a Federal Restriction on State AI Regulation

Last week, while headlines tracked President Trump's trip to the Middle East, Big Tech quietly executed a legislative coup. Buried deep in the House Energy & Commerce (E&C) Committee's additions to the sprawling budget reconciliation package was a sweeping provision imposing a ten-year federal moratorium on all state and local regulation of artificial intelligence. As written, it would effectively wipe out hundreds of state-level laws already enacted to address issues like child-targeted companion chatbots, scams against the elderly, AI-generated pornography, election deepfakes, and autonomous vehicles.

Because the language was inserted through the reconciliation process, it passed through the committee with minimal opportunities for bipartisan debate. It was a strikingly effective maneuver; after years of performative calls for "guardrails," tech giants like Meta and Google have lobbied relentlessly on Capitol Hill and have secured exactly what they've long sought — regulatory immunity — without a single public vote.

The provision faces an uphill battle in the Senate: it runs afoul of the Byrd Rule, which blocks unrelated policy measures from reconciliation bills. But its mere appearance should sound alarms for all tech accountability advocates. This wasn't a fluke; it was a test balloon. Preemption — sweeping, substance-free, and unaccompanied by federal standards — is fast becoming the central federal battle in the tech policy space. Just last week, Senator Ted Cruz (R-TX) previewed a forthcoming "light-touch" AI bill centered on federal preemption, echoing industry arguments that a patchwork of state laws creates confusion. Meanwhile, the House is drafting a comprehensive privacy bill that many fear will override stronger state protections in favor of weaker federal ones.

That's why tomorrow's hearing on "Seizing America's AI Opportunity," hosted by the House E&C Commerce, Manufacturing, and Trade (CMT) Subcommittee, is a rare and urgent opportunity to demand clarity. While we agree that strong federal legislation is the ideal path forward — one that protects consumers without placing undue burdens on small businesses — Congress has spent the past three years gridlocked on AI policy, managing to pass only a single significant bill: the Take It Down Act. In the absence of federal action, states across the political spectrum have stepped up to address emerging harms.

Every member of the CMT Subcommittee should treat this hearing as an opportunity to press for clarity and guard against a blanket preemption that shuts down public debate. This is not a partisan issue. Several Republican members hail from states that have

enacted thoughtful, bipartisan AI laws, which the proposed moratorium would sweep away.

Chairman Gus Bilirakis (R-FL), a vocal advocate for children's online safety, should consider how the moratorium would override state laws regulating child-directed algorithms and chatbots. In Kentucky, E&C Chairman Brett Guthrie's (R-KY) home state, lawmakers recently passed a bill with overwhelming bipartisan support requiring disclosure when AI is used in public decision-making. Tennessee, home to Rep. Diana Harshbarger (R-TN), passed the ELVIS Act to protect artists from AI-driven voice cloning — an issue of particular concern in a state whose identity is deeply tied to country music, bluegrass, and the honky-tonks of Nashville. And of the 13 states represented by Republicans on this subcommittee, nine have already enacted laws to combat election-related deepfakes. The moratorium would dismantle precisely the kinds of narrowly tailored, state-level laws that lawmakers themselves often cite as models for responsible innovation.

As lawmakers prepare for tomorrow's hearing, here are some critical questions they should be asking related to the potential for an AI moratorium.

The Top 5 Questions that Legislators Should Ask

- Does a blanket preemption assume that a rural community in the Midwest and a tech hub in California should be governed identically with regard to AI? To what extent should states have the flexibility to address the unique ways AI impacts their local contexts? How do we avoid a mismatch between a one-size-fits-all federal approach and the diverse on-the-ground realities across America?
- Tech companies have a history of moving fast and breaking things, sometimes at the expense of consumers. If states are effectively sidelined for 10 years, do you trust that AI companies will adequately self-police their products and services? Or is there a risk that there will be a spike in consumer harms (unfair algorithmic decisions, privacy invasions, AI-driven frauds, etc.) that could have been mitigated by more nimble state interventions?
- The Constitution gives states broad authority to protect public health and safety. On what constitutional grounds can Congress preempt that authority without offering a federal alternative? How does this moratorium square with the Tenth Amendment, which reserves powers not delegated to the federal government to the states, particularly in areas like consumer protection and civil liability?
- Proponents of the moratorium have compared it to the Internet Tax Freedom Act — the "internet tax moratorium" from the late 90s that prevented states from taxing

internet access. They argue that just as a light-touch approach helped the early internet flourish, a pause on state AI rules will help AI innovation. However, that internet moratorium was narrowly tailored and focused explicitly on just taxes. Can any of the witnesses identify a precedent where Congress preemptively barred states from governing any aspect of a rapidly developing technology without establishing any federal regulatory framework, effectively leaving a legal vacuum? Particularly, has Congress ever done so in a domain that implicates not just consumer protection and safety, but also civil rights, labor, education, and economic autonomy at the state level?

- The current preemption language is written so broadly that it could block states from overseeing how AI is used within their own agencies. What is the pro-innovation rationale for preventing states from overseeing AI usage within their governments? If a state wants to ensure its unemployment office, DMV, or public hospital uses AI responsibly and transparently, why should federal law forbid that for 10 years?

Product Safety and Algorithmic Accountability

- 14-year-old Sewell Setzer III died by suicide after reportedly being emotionally manipulated by an AI companion chatbot built by Character.AI, a company founded less than five years ago. This is just one of several lawsuits emerging that are uncovering severe harms that these AI systems can cause, including hypersexualization, encouragement of suicidal ideation, grooming, and mental health deterioration. In light of these rapidly unfolding dangers, how can Congress justify a 10-year moratorium that would block states from responding to the new, AI-driven threats to child safety as they emerge?
- Meta's AI chatbots have reportedly engaged in sexually explicit conversations with children, even after users identified themselves as being underage. Internal decisions, reportedly driven by Mark Zuckerberg, weakened safeguards to boost engagement, including exemptions to bans on explicit content. Tech companies like Meta have repeatedly prioritized profit over safety, rolling back protections, lying to the public, and allowing new products to exploit children for engagement. If a 10-year moratorium blocks states from acting, what concrete solution do supporters propose to protect consumers from an industry that has demonstrated a pattern of deception and harm?
- How are AI-driven recommender algorithms, deliberately optimized for engagement, fueling screen addiction and worsening the youth mental health crisis? Given that

this committee has yet to pass a regulation to address this challenge, how will a 10-year moratorium on state laws do anything other than shield the very companies profiting from that harm?

- Autonomous vehicles and AI decision systems are already operating in states like Arizona and California. If this moratorium preempts local oversight, who is responsible when these systems fail and cause real-world harm?
- Industry advocates often assert that state-level algorithmic accountability laws, including transparency mandates and bias audits, are stifling innovation and creating uncertainty for developers. But many of these measures are narrowly tailored and supported by bipartisan coalitions at the state level.
- Can you point to concrete, verifiable examples where such laws have directly caused a startup to fail, halted product deployment, or materially slowed innovation?
- Absent those specifics, how should Congress evaluate the repeated claims that modest, targeted state regulations, many of which mirror long-standing consumer protection practices, are an existential threat to the tech sector?

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Impact on Small Businesses and Local Economies

- A number of cities — San Francisco, Philadelphia, Minneapolis — have banned AI-driven rent-setting software used by large landlords after evidence that these algorithms were colluding to push rents up and reduce housing availability. Those local ordinances were meant to protect renters (many of them small businesses or local workers) from inflated rents and potential price-fixing by sophisticated AI tools. If the federal moratorium nullifies such city-level bans, what happens to those communities' efforts to keep housing affordable? What economic impact could this have on local residents and mom-and-pop landlords in our districts if an algorithm is allowed free rein to hike rents and they have no local recourse?
- AI-driven automation is projected to displace certain jobs and disrupt local labor markets. Typically, states might respond by updating labor laws, such as requiring notice or severance when AI replaces a large number of workers, or setting up workforce retraining programs funded by fees on companies deploying job-eliminating AI. If measures like those are deemed to "regulate AI" and thus frozen, how can states mitigate sudden economic shocks in their communities?

Federalism and States as Laboratories of Democracy

- Our federal system empowers states to act as experimental labs for policy. We see that with AI right now; last year, lawmakers in 45 states introduced hundreds of AI-related bills. If Congress imposes a 10-year freeze on all these efforts, it is effectively closing down those opportunities to test different models for innovative legislation.
- How can Congress learn what works and what doesn't in AI governance, if it forbids states from experimenting or tailoring solutions to their unique populations?
- To what extent does a one-size-fits-all federal timeout risk stagnating policy development, given that technology — and the harms from it — will continue to evolve?

Transparency, Disclosure, and Oversight

- Some states, like Kentucky, have passed laws to ensure that whenever AI plays a role in significant public decisions, like denying someone a job, a loan, health care, or insurance, the people affected are informed and the technology is evaluated for transparency. If the moratorium stops states from enacting or enforcing such measures, how will citizens know when an algorithmic decision made by the government impacts them or whether that AI has been vetted for discrimination?
- In 2020, California voters approved a privacy law that gives consumers the right to opt out of automated decision-making and to know when businesses use personal data in AI algorithms — tangible rights that are already in effect. The state's privacy regulator has warned Congress that the moratorium "could rob millions of Americans of rights they already enjoy" by preventing enforcement of these new AI transparency and opt-out provisions. How does Congress justify a federal policy that removes a layer of consumer protection without replacing it with any equivalent federal standard?

Election Integrity and Deepfakes

- Although Congress has yet to pass legislation on this issue, 25 states, from Alabama to Massachusetts to Utah, have enacted laws addressing the use of deceptive AI-generated content in elections. Polling shows that more than 75% of Americans believe it should be illegal to use deepfake technology to influence elections. Why is it critical to safeguard the electoral process from AI-generated deepfakes, and what responsibilities should technology companies bear in preventing the misuse of their platforms for deceptive electioneering?

- How does preempting these state laws improve our ability to combat false information about elections? What is the risk that bad actors, including foreign adversaries, will see this as a green light, giving purveyors of deepfake propaganda a free pass until a federal regime is in place?

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THE FALSE CHOICE BETWEEN DIGITAL REGULATION AND INNOVATION

Anu Bradford

ABSTRACT—This Article challenges the common view that more stringent regulation of the digital economy inevitably compromises innovation and undermines technological progress. This view, vigorously advocated by the tech industry, has shaped the public discourse in the United States, where the country's thriving tech economy is often associated with a staunch commitment to free markets. U.S. lawmakers have also traditionally embraced this perspective, which explains their hesitancy to regulate the tech industry to date. The European Union has chosen another path, regulating the digital economy with stringent data privacy, antitrust, content moderation, and other digital regulations designed to shape the evolution of the tech economy toward European values around digital rights and fairness. According to the EU's critics, this far-reaching tech regulation has come at the cost of innovation, explaining the EU's inability to nurture tech companies and compete with the United States and China in the tech race. However, this Article argues that the association between digital regulation and technological progress is considerably more complex than what the public conversation, U.S. lawmakers, tech companies, and several scholars have suggested to date. For this reason, the existing technological gap between the United States and the EU should not be attributed to the laxity of American laws and the stringency of European digital regulation. Instead, this Article shows there are more foundational features of the American legal and technological ecosystem that have paved the way for U.S. tech companies' rise to global prominence—features that the EU has not been able to replicate to date. By severing tech regulation from its allegedly adverse effect on innovation, this Article seeks to advance a more productive scholarly conversation on the costs and benefits of digital regulation. It also directs governments deliberating tech policy away from a false choice between regulation and innovation while drawing their attention to a broader set of legal and institutional reforms that are necessary for tech companies to innovate and for digital economies and societies to thrive.

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INTRODUCTION

There is a widely held view that more stringent regulation of the digital economy compromises innovation and undermines technological progress. Regulation is commonly portrayed as a burden that diverts resources away from firms' innovative activities.[1] Proponents of this view point to concrete

[1] Nicholas Crafts, *Regulation and Productivity Performance*, 22 OXFORD REV. ECON. POL'Y 186, 187 (2006); Philippe Aghion, Antonin Bergeaud & John Van Reenen, *The Impact of Regulation on*

examples that appear, at least initially, to prove this assertion correct. They highlight the astounding success of the leading American tech companies, which have transformed economies and societies while generating tremendous wealth for their founders and investors. These companies were able to grow and scale in a permissive regulatory environment, which directly and significantly contributed to these companies' commercial success, the argument goes.[2] Evidence from Europe serves as a cautionary tale that further affirms this view: European tech regulations are extensive, but globally successful European tech companies are hard to come by.[3] These observations are then used to claim that there is a causal relationship between a country's digital regulations and its tech industry's performance.[4]

Until recently, most governments have refrained from regulating the tech industry precisely because of their fear that attempts to interfere with tech companies' operations would undermine their innovative capacity. The United States has led this charge against regulation, insisting on the primacy of free markets, free speech, and free internet as foundations of the digital economy.[5] The American regulatory approach reflects a view that the country's technology leadership derives from an unregulated marketplace. The U.S. regulatory regime, with its deeply embedded techno-libertarian

Innovation 20 (Nat'l Bureau of Econ. Rsch., Working Paper No. 28381, 2021), https://www.nber.org/papers/w28381 [https://perma.cc/34K3-BBY2] (showing that companies are hesitant to invest in their operations when hiring more employees increases regulatory oversight); James Andrew Lewis, *Tech Regulation Can Harm National Security*, CTR. FOR STRATEGIC & INT'L STUD. (Nov. 28, 2022), http://www.csis.org/analysis/tech-regulation-can-harm-national-security [http://perma.cc/AD3T-JWUY] ("Technological innovation does not flourish in an environment of risk-averse and burdensome regulation."); *see also* Shira Ovide, *The Hands-Off Tech Era Is Over*, N.Y. TIMES (June 16, 2023), https://www.nytimes.com/2022/06/15/technology/government-intervention-tech.html [https://perma.cc/44PF-CMRM] (acknowledging that "[m]ore government intervention will slow tech down" and inviting normative conversation on the societal implications of digital regulation).

[2] *See* Anupam Chander, *How Law Made Silicon Valley*, 64 EMORY L.J. 639, 642 (2015) (attributing Silicon Valley's success to "key substantive reforms" in American law that "dramatically reduced the risks faced by Silicon Valley's new breed of global traders"). *See generally* Tal Z. Zarsky, *The Privacy-Innovation Conundrum*, 19 LEWIS & CLARK L. REV. 115 (2015) (exploring the links between privacy and innovation); Josh Withrow, *Don't Stifle U.S. Tech Innovation with Europe's Rules*, R STREET (Oct. 9, 2022), https://www.rstreet.org/commentary/withrow-dont-stifle-u-s-tech-innovation-with-europes-rules-opinion/ [https://perma.cc/CC9X-8D94].

[3] Withrow, *supra* note 2.

[4] *See* Chander, *supra* note 2, at 677 (concluding that European copyright directives were "less flexible in responding to technological developments than American fair use"); Zarsky, *supra* note 2, at 139; *Shaking Up Europe Andrew McAfee Argues for Less Regulation*, MIT INITIATIVE ON DIGIT. ECON. (Sept. 8, 2021), https://ide.mit.edu/insights/shaking-up-europe-andrew-mcafee-argues-for-less-regulation/ [https://perma.cc/HK4L-BZ9L]; Mark Minevich, *Can Europe Dominate in Innovation Despite US Big Tech Lead?*, FORBES (Dec. 3, 2021, 11:41 AM), https://www.forbes.com/sites/markminevich/2021/12/03/can-europe-dominate-in-innovation-despite-us-big-tech-lead/?sh=6bfd6c1f1d75 [https://perma.cc/GE3N-Y2QK].

[5] ANU BRADFORD, DIGITAL EMPIRES: THE GLOBAL BATTLE TO REGULATE TECHNOLOGY 33 (2023).

ethos, consists of weakly enforced antitrust laws, the absence of a federal data privacy law, and permissive content-moderation rules that shield tech companies from liability. In contrast, the European Union (EU) has frequently leveraged its regulatory powers—including antitrust laws, data privacy regulation, and rules on content moderation—in an effort to rein in tech giants and protect the rights of European citizens.[6] These regulations have significantly impacted tech companies' daily operations, constraining the way they collect, process, or share data; design their products; and interact with internet users or other businesses in the marketplace.

However, public sentiment in the United States is now shifting. American citizens increasingly recognize the societal harms caused by tech companies.[7] U.S. political leadership has also started to question the benefits of an unregulated tech economy,[8] and Congress has introduced various bills aimed at curtailing the power of tech companies.[9] Despite growing public

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[6] ANU BRADFORD, THE BRUSSELS EFFECT: HOW THE EUROPEAN UNION RULES THE WORLD xiv (2020) (defining the "Brussels Effect" as "the EU's unilateral power to regulate global markets"); BRADFORD, *supra* note 5, at 111, 116, 124.

[7] *See* Monica Anderson, *Most Americans Say Social Media Companies Have Too Much Power, Influence in Politics*, PEW RSCH. CTR. (July 22, 2020), https://www.pewresearch.org/fact-tank/2020/07/22/most-americans-say-social-media-companies-have-too-much-power-influence-in-politics/ [https://perma.cc/ZK6N-HBSC].

[8] *See* Eric Johnson, *Nancy Pelosi Says Trump's Tweets "Cheapened the Presidency"—and the Media Encourages Him*, VOX (Apr. 12, 2019, 12:50 PM), https://www.vox.com/2019/4/12/18307957/nancy-pelosi-donald-trump-twitter-tweet-cheap-freak-presidency-kara-swisher-decode-podcast-interview [https://perma.cc/S9UK-FU7K] (addressing Rep. Pelosi's perspective on the Communications Decency Act § 230); *Fact Sheet Executive Order on Promoting Competition in the American Economy*, WHITE HOUSE (July 9, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/07/09/fact-sheet-executive-order-on-promoting-competition-in-the-american-economy/ [https://perma.cc/3R2B-XZZN].

[9] *See, e.g.*, American Innovation and Choice Online Act, S. 2992, 117th Cong. (as reported by S. Comm. on the Judiciary, Mar. 2, 2022), https://www.congress.gov/bill/117th-congress/senate-bill/2992 [https://perma.cc/Q8ZV-AA8P] (describing the bill as one seeking to "prohibit[] certain large online platforms from engaging in" preferential and anticompetitive acts); Press Release, Ro Khanna, Rep., U.S. House of Reps., Rep. Khanna Releases 'Internet Bill of Rights' Principles, Endorsed by Sir Tim Berners-Lee (Oct. 4, 2018), https://khanna.house.gov/media/press-releases/release-rep-khanna-releases-internet-bill-rights-principles-endorsed-sir-tim [https://perma.cc/RS54-PEZG] (discussing the need to "provide Americans with basic protections online"); CONSENT Act, H.R. 5815, 115th Cong. (2018) (requiring the FTC to "establish privacy protections for customers of online edge providers"). For a discussion on the Merger Filing Fee Modernization Act of 2021, enacted as the Merger Filing Fee Modernization Act of 2022, 15 U.S.C. § 18b, see *infra* note 104 and accompanying text; and see also Kellen Browning, David McCabe & Karen Weise, *Judge Rejects F.T.C. Delay of $70 Billion Microsoft-Activision Deal*, N.Y. TIMES (July 11, 2023), https://www.nytimes.com/2023/07/11/technology/microsoft-activision-deal-ftc.html [https://perma.cc/76FZ-EGS8]. For further discussion, see also Tonya Riley, *The FTC's Biggest AI Enforcement Tool? Forcing Companies to Delete Their Algorithms*, CYBERSCOOP (July 5, 2023), https://cyberscoop.com/ftc-algorithm-disgorgement-ai-regulation/ [https://perma.cc/FBT2-G3VA], which discusses how a comprehensive federal privacy law would remove current limitations on

and political support for digital regulation, the U.S. government has to date failed to institute any meaningful regulatory reforms.[10] This reflects, in part, a persisting fear that an interventionist regulatory approach will undermine tech companies' innovative activities and thus halt the country's economic and technological progress.[11] This concern is heightened in today's era of the U.S.–China tech war, which accentuates the importance of retaining—or, some would argue, reclaiming—American technological leadership.[12] Thus, a deep-rooted concern remains that a more regulated digital economy would force the United States to relinquish its role as a technological leader, leaving the country without many beneficial innovations and ceding to China's supremacy in the unfolding tech race.

At first sight, it seems understandable that the United States is reluctant to follow the EU's path in digital regulation. It is tempting to presume causation between the EU's stringent regulatory regime and its dearth of leading tech companies. After all, there is no European Amazon, Apple, Alphabet, Meta, or Microsoft. European companies contribute less than 4% of the market capitalization of the world's seventy largest platforms, while the United States' share is 73%.[13] Various other metrics all point to the same unambiguous conclusion that the EU currently lags behind the United States in technological prowess. European firms trail their U.S. counterparts in profitability, growth, and innovation—contributing to a significant technology gap between the United States and the EU.[14] At the same time, the EU has earned a reputation as the world's regulatory "superpower."[15] Consumers may not be able to name any leading European tech companies,

FTC ability to regulate tech companies; and *Crypto Assets and Cyber Enforcement Actions*, SEC (June 15, 2023), https://www.sec.gov/spotlight/cybersecurity-enforcement-actions [https://perma.cc/L6WP-JJYX], which demonstrates that the SEC has increased its enforcement actions against tech companies since 2020.

[10] Megan McCluskey, *After a Year of Focus on Big Tech's Harms, Why We're Still Waiting on Reform*, TIME (Sept. 14, 2022, 1:47 PM), https://time.com/6212145/big-tech-reforms-us-free-speech/ [https://perma.cc/AK2F-R3JM].

[11] *See infra* Section I.C.

[12] Nitasha Tiku, *Big Tech Breaking Us Up Will Only Help China*, WIRED (May 23, 2019, 7:00 AM), https://www.wired com/story/big-tech-breaking-will-only-help-china/ [https://perma.cc/C3YJ-BDMS].

[13] *The EU Wants to Set the Rules for the World of Technology*, ECONOMIST (Feb. 20, 2020), https://www.economist.com/business/2020/02/20/the-eu-wants-to-set-the-rules-for-the-world-of-technology [https://perma.cc/FB4D-VLEQ].

[14] SVEN SMIT, CHRIS BRADLEY, KWEILIN ELLINGRUD, MARCO PICCITTO, OLIVIA WHITE & JONATHAN WOETZEL, MCKINSEY GLOB. INST., SECURING EUROPE'S COMPETITIVENESS vi (Sept. 2022), https://www.mckinsey.com/~/media/mckinsey/business%20functions/strategy%20and%20corporate%20finance/our%20insights/securing%20europes%20competitiveness%20addressing%20its%20technology%20gap/securing-europes-competitiveness-addressing-its-technology-gap-september-2022.pdf [https://perma.cc/F3M9-NS7C].

[15] BRADFORD, *supra* note 6, xiii.

but most have likely heard about the "GDPR," the EU's data privacy law.[16] Thus, while the EU may not be capable of generating the world's leading tech companies, it has shown itself more than capable of generating regulations to govern those companies.

Although the transatlantic technology gap is unquestionable, it is less clear that the EU's demanding tech regulations explain why today's tech giants were founded in the United States and not in the EU. This prevailing view oversimplifies the relationship between digital regulation and innovation. It also reflects several misunderstandings about the strengths and weaknesses of the American and European regulatory regimes and their respective tech ecosystems. Instead, a closer examination of U.S.–EU differences suggests that the EU's inability to cultivate an equally successful tech industry can be traced to various other factors. These include (1) the fragmented digital single market that limits the scaling of innovations within the EU, (2) underdeveloped capital markets that limit tech companies' ability to grow in the EU, (3) Europe's punitive bankruptcy laws and cultural attitudes that deter risk-taking, and (4) the absence of a proactive immigration policy that would allow the EU to harness foreign tech talent. At the same time, these exact factors are inherent strengths of the U.S. legal regime and tech ecosystem, directly contributing to the success of U.S. tech companies. There is much that Europe is not getting right in terms of nurturing innovation and cultivating leading tech companies, but choosing to regulate the tech industry in the name of safeguarding individual rights and societal freedoms is not where the problem lies.

In advancing our understanding of the relationship between digital regulation and innovation, this Article makes several contributions. First, this Article shows that lenient tech regulation is not necessary for the development of a thriving tech sector or, conversely, that stringent tech regulation does not inherently prevent powerful tech companies from emerging. Second, this Article demonstrates how a country's broader legal, economic, political, and cultural attributes shape its digital economy and determine whether tech companies are likely to thrive or falter. Any causal claims about the relationship between tech regulation and innovation must first account for a host of other variables that may ultimately have a more substantial effect on the relative success of a country's tech industry. Third, the scholarly insights of this Article offer concrete policy implications for both the United States and the EU. By rejecting the view that Europe's tech regulations hinder Europe's tech industry, this Article lends normative

[16] *What Is GDPR, the EU's New Data Protection Law?*, GDPR.EU, https://gdpr.eu/what-is-gdpr/ [https://perma.cc/6DTQ-GCAZ]. GDPR stands for General Data Protection Regulation. *Id.*

support to the EU's ambitious digital regulatory agenda. This should embolden the EU to continue pursuing its regulatory aspirations built around fundamental rights, democracy, and fairness as hallmarks of the digital economy. At the same time, by identifying other factors that adversely affect the European tech industry, this Article provides the EU with a long and urgent list of policy reforms, which European leaders ought to prioritize if they want the EU to not only generate tech regulations but also cultivate leading tech companies.

Similarly, this Article should offer solace to any American decision-maker—or any other foreign government—looking to regulate the tech industry but hesitating to do so for fear of compromising the country's economic and technological progress. Choosing to regulate the tech industry will not force the United States to forgo the benefits of innovation or lose the race for technological leadership to China. Instead, the United States can balance significant tech regulation with impressive tech innovation—as long as it continues investing in the key strengths that have sustained its tech leadership to date.

This Article proceeds as follows. Part I describes the common view under which countries seeking to regulate their tech industry face an inevitable trade-off between technological and economic progress and innovation. Part II challenges this view and shows how the relationship between the level of tech regulation and the rate of innovation is more complex than public conversation has often acknowledged. In doing so, it rejects the argument that the U.S.–EU technology gap can be primarily attributed to tech regulation. Part III offers an alternative explanation for U.S. tech companies' relative success compared to their European rivals. It argues that U.S.–EU differences in technological prowess can be predominantly traced to existing differences in market integration, capital markets, bankruptcy regimes and risk-taking, and talent acquisition. The Conclusion draws lessons for scholars and policymakers from the discussion, inviting a new way to think about the relationship between digital regulation and innovation.

I. EXISTING VIEWS ON DIGITAL REGULATION AND INNOVATION

Many of today's leading tech companies hail from the United States or, increasingly, China.[17] In stark contrast to the American tech behemoths—including Alphabet, Amazon, Apple, Meta, Microsoft, and Nvidia—or the

[17] Jonathan Ponciano, *The World's Largest Technology Companies in 2023 A New Leader Emerges*, FORBES (June 8, 2023, 8:45 AM), https://www.forbes.com/sites/jonathanponciano/2023/06/08/the-worlds-largest-technology-companies-in-2023-a-new-leader-emerges/?sh=76f88f9b5d1d [https://perma.cc/X458-7FWQ].

Chinese tech giants—including Alibaba, Baidu, Huawei, JD.com, Tencent, and Xiaomi—European countries have nurtured few leading tech companies. With the exception of perhaps Spotify, few European companies are even known to global internet users.[18] A look at almost any key tech indicator reveals the extent to which the EU currently lags behind the technological prowess of the United States.[19] It raises the question: why has the EU been unable to create a vibrant tech industry of its own?

For example, Apple, Microsoft, Amazon, and Google were the four most valuable brands in the world in 2023.[20] Consumers and investors alike embrace these brands. Alphabet, Amazon, Apple, Meta, and Microsoft collectively recorded over $1 trillion in revenue in 2020 while earning an income of $197 billion.[21] These companies, together with the recent surge of the semiconductor giant Nvidia, collectively had a market capitalization exceeding $10 trillion as of February 2024.[22] In 2021, the combined market capitalization of Alphabet, Amazon, Apple, and Meta exceeded the value of the over 2,000 companies listed on the Tokyo Stock Exchange; Apple and Meta together were worth more than the 100 companies with the highest market capitalization listed on the London Stock Exchange; and Amazon alone eclipsed the entire German DAX Index, which represents around 80% of the market capitalization of companies publicly listed in Germany.[23]

Other statistics tell a very similar story. On *Forbes*' 2023 list of "The World's Largest Technology Companies," only three EU-based companies—ASML, SAP, and Accenture—made it into the top twenty; meanwhile, eleven U.S. companies appear on that list.[24] Other statistics

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[18] *See* Gary Shapiro, *How the EU's War on U.S. Innovation Stifles European Creativity*, INV.'S BUS. DAILY (Sept. 12, 2016, 5:04 PM), https://www.investors.com/%20politics/commentary/how-the-eus-war-on-u-s-innovation-stifles-european-creativity/ [https://perma.cc/G29N-SYCS].

[19] *See* FRANCES G. BURWELL & KENNETH PROPP, ATL. COUNCIL, THE EUROPEAN UNION AND THE SEARCH FOR DIGITAL SOVEREIGNTY: BUILDING "FORTRESS EUROPE" OR PREPARING FOR A NEW WORLD? 4 (June 22, 2020), https://www.atlanticcouncil.org/wp-content/uploads/2020/06/The-European-Union-and-the-Search-for-Digital-Sovereignty-Building-Fortress-Europe-or-Preparing-for-a-New-World.pdf [https://perma.cc/P584-2T74].

[20] *Leading Brands Worldwide in 2023, by Brand Value*, STATISTA (Feb. 16, 2024), https://www.statista.com/statistics/264826/most-valuable-brands-worldwide-in-2009/ [https://perma.cc/K9GN-N8EV].

[21] Alison Beard, *Can Big Tech Be Disrupted?*, HARV. BUS. REV. (2022), https://hbr.org/2022/01/can-big-tech-be-disrupted [https://perma.cc/X7BM-3VHZ]; *Mega-Cap Companies Saw Strong Gains in 2023 Amid Tech Optimism*, REUTERS (Jan. 2, 2024, 4:54 AM), https://www.reuters.com/markets/us/global-markets-marketcap-2024-01-02/ [https://perma.cc/XX7D-2TXC].

[22] Brian Baker, *Trillion-Dollar Companies 6 Most Valuable Tech Giants*, BANKRATE (June 19, 2024), https://www.bankrate.com/investing/trillion-dollar-companies/ [http://perma.cc/CY7R-UL45].

[23] Leo Lewis, *Tokyo Stock Market Eclipsed by the Four Tech Leviathans*, FIN. TIMES (Sept. 1, 2021), https://www.ft.com/content/460747da-a410-41aa-a8a4-0c991f264c06 [https://perma.cc/SQB2-C9G3].

[24] Ponciano, *supra* note 17.

reinforce this picture. When focusing on the world's top one hundred unicorns—private companies with valuations over $1 billion as of January 2024—only fourteen were European, with six of those hailing from the United Kingdom as opposed to the EU.[25] A well-documented transatlantic technology gap permeates many cutting-edge technologies, including quantum computing and AI.[26] The ten largest companies investing in quantum computing come from the United States and China.[27] Similarly, U.S. companies' investment in AI is six times higher than that of European companies.[28] The EU also trails the United States and China in AI patent filings.[29] It was therefore no surprise to anyone that OpenAI and its much-hyped large language model chatbot, ChatGPT, emerged from the United States and not Europe. These statistics paint a clear picture of the EU's relative weakness in the global tech race and raise the important question of why the EU lags behind the United States in tech innovation.

Several critics attribute the dearth of tech companies hailing from Europe to the EU's stringent approach toward tech regulation, including the EU's exacting data privacy laws or its propensity to leverage its antitrust laws to challenge dominant online platforms.[30] Over the past decade, the EU has gained a reputation as the primary jurisdiction regulating tech companies.[31] It has promulgated a myriad of regulations that significantly impact the daily operation of tech companies, constraining the way they collect, process, or share data; design their products; or interact with internet users or other businesses on the marketplace.[32] In stark contrast to the EU, the United States has adopted a laissez-faire approach toward digital regulation, prioritizing free markets, free speech, and free internet.[33] Scholars have traced the success of U.S. tech companies to the lenient regulatory environment, which enables these companies to grow and innovate unconstrained by regulatory burdens. They have similarly

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[25] *The Complete List of Unicorn Companies*, CB INSIGHTS, https://www.cbinsights.com/research-unicorn-companies [https://perma.cc/ZF69-FXVQ].

[26] SMIT ET AL., *supra* note 14, vi.

[27] *Id.*

[28] *Id.*

[29] *See* Shana Lynch, *The State of AI in 9 Charts*, STAN. UNIV. HUM.-CENTERED A.I. (Mar. 16, 2022), https://hai.stanford.edu/news/state-ai-9-charts [https://perma.cc/BD6X-LRZW] (indicating East Asia and Pacific as "[leading] the rest of the world with 62.1% of all patent applications, followed by North America (17.07%) and Europe and Central Asia (4.16%)").

[30] *See infra* Section I.C.

[31] BRADFORD, *supra* note 6, xiv.

[32] *See infra* notes 61–70.

[33] BRADFORD, *supra* note 5, at 33.

explained the EU's failure to replicate the United States' success in tech innovations by pointing to the regulatory burdens that EU companies face.[34]

The discussion below first examines the United States' approach toward tech regulation before contrasting that with the EU's regulatory approach. The United States has adopted a so-called "market-driven regulatory model," where protecting free speech, free internet, and incentives to innovate form central pillars of its regulatory regime.[35] In contrast, the EU has embraced what has been labeled a "rights-driven regulatory model," where fundamental rights and the notion of a fair marketplace take center stage.[36] This comparison reveals significant differences in regulations that tech companies encounter in Europe and the United States. The discussion then shows how these differences are commonly thought to explain the EU's failure to match the United States in the global tech race, with policymakers, tech companies, and some legal scholars drawing a causal link between the EU's stringent tech regulations and the relatively weaker performance of European tech companies.

A few notes on terminology and the scope of the analysis before proceeding. The terms "tech regulation" and "digital regulation" refer to legislative, administrative, or enforcement actions that either target the tech sector or digital economy specifically or have a substantial effect on the way tech companies operate. For example, rules on content moderation, including the EU's newly adopted Digital Services Act, are a clear example of digital regulation.[37] In contrast, data privacy regulation—such as the EU's GDPR—applies to a wide range of industries but can be viewed as digital regulation given its profound impact on tech companies whose business models rely on collecting and monetizing data.[38] Similarly, antitrust law is not limited to the tech sector but over the past decade has become a key policy tool—especially in the EU—to shape the tech industry, with a flurry of enforcement actions targeting the largest online platforms.[39] The EU recently adopted the Digital Markets Act, a specific digital regulation designed to enhance competition in the digital economy. For the purposes of this Article, all these measures geared at constraining the operation of the tech companies and shaping the digital economy fall under the rubric of "tech regulation" or "digital regulation."

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[34] *E.g.*, Chander, *supra* note 2, at 642.

[35] BRADFORD, *supra* note 5, at 33.

[36] *Id.* at 105.

[37] Council Regulation 2022/2065, 2022 O.J. (L 277) 1, 2 [hereinafter Digital Services Act].

[38] Council Regulation 2016/679, 2016 O.J. (L 119) 1 [hereinafter GDPR].

[39] Council Regulation 2022/1925, 2022 O.J. (L 265) 1, 2 [hereinafter Digital Markets Act].

The discussion below focuses on EU-level regulation, even though there have been significant legislative developments on the individual EU member state level that have shaped the broader European approach toward the digital economy. The analysis also omits any discussion of tech regulation in China. However, China's regulatory posture has until very recently resembled that of the United States in terms of maximizing Chinese tech companies' ability to grow and innovate largely unburdened by regulatory constraints.[40] China has also managed to nurture a powerful domestic tech industry, further contributing to the perception that lax regulation and technological progress, indeed, go hand in hand.

A. Digital Regulation in the United States

The United States' approach toward regulating the digital economy is shaped by the country's uncompromised faith in markets and skepticism toward government regulation.[41] This market-driven regulatory model reflects the nation's deep-rooted techno-optimism, which places its trust in tech companies' ability to self-regulate.[42] Regulation is viewed as an impediment to innovation as it increases costs and constrains innovative behavior. As a result, the government needs to step aside to maximize the private sector's unfettered innovative zeal and, with that, economic growth. According to this American techno-libertarian view, government intervention not only compromises the efficient operation of markets—it also undermines individual liberty and societal progress. Thus, although the United States' commitment to innovation and growth provides the economic rationale against government intervention, its commitment to individual liberty and freedom is invoked as a political reason to limit the government's role in the digital economy.

These free-market ideas are deeply entrenched in the existing U.S. legal regime. No other law captures the techno-libertarian ethos of the American market-driven model better than § 230 of the Communications Decency Act (CDA) of 1996.[43] This law provides immunity for online intermediaries, shielding these companies from liability for any third-party content that they host on their platforms.[44] For example, Alphabet cannot be held responsible

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[40] *See generally* Angela Huyue Zhang, *Agility over Stability China's Great Reversal in Regulating the Platform Economy*, 63 HARV. INT'L L.J. 457, 471–83 (2022) (describing the various factors contributing to China's lax approach toward tech regulation).

[41] *See Read the Framework*, CLINTON WHITE HOUSE, https://clintonwhitehouse4.archives.gov/WH/New/Commerce/read.html [https://perma.cc/WV7G-RMJM].

[42] BRADFORD, *supra* note 5, ch. 1.

[43] 47 U.S.C. § 230.

[44] 47 U.S.C. § 230(c)(1).

when a user uploads a YouTube video that promotes violence, and Meta cannot be accused of defamation when a Facebook user posts a libelous comment about someone. At the same time, if YouTube chose to take the illegal video down or Meta chose to remove the defamatory post, these companies would be free to do so without fear that they are violating the user's free speech rights. This immunity that protects platforms' action and inaction alike has been viewed as essential for online services to grow and flourish.[45]

The United States' anti-regulation stance extends to other facets of tech regulation, including data privacy. Even as most countries in the world have recently adopted data privacy laws, no comprehensive federal privacy law has emerged from Congress.[46] Congress has also not updated its dated antitrust statutes that many consider ill-suited to address the problems of today's digital economy.[47] Nor has Congress acted to regulate AI, protect the rights of gig workers, or impose obligations on platforms to share revenue with creators of copyright-protected content. This minimalist U.S. legislative framework stands in stark contrast to the legislative activity of the EU, which has regulated extensively across these and many other domains of the digital economy, as discussed in the next Section. The U.S. courts have also vigorously defended the unregulated tech economy, lending their legitimacy to the free-market ethos that underlies the United States' regulatory approach toward the digital economy.[48]

This American commitment to free market ideals has remained unchanged across different administrations, with both Democrats and Republicans shunning tech regulation. For example, the Obama Administration's 2011 International Strategy for Cyberspace identified the promotion of open markets as a policy priority, explaining how the role of the government was to "sustain that free-trade environment, particularly in

[45] Danielle Keats Citron & Mary Anne Franks, *The Internet as a Speech Machine and Other Myths Confounding Section 230 Reform*, 2020 U. CHI. LEGAL F. 45, 54.

[46] McCluskey, *supra* note 10.

[47] *See, e.g.*, Press Release, Amy Klobuchar, Sen., U.S. Senate, Senator Klobuchar Reintroduces Bill to Promote Competition and Improve Antitrust Enforcement (May 16, 2024), https://www.klobuchar.senate.gov/public/index.cfm/2024/5/klobuchar-reintroduces-bill-to-promote-competition-and-improve-antitrust-enforcement [https://perma.cc/CWE5-CVX8] (discussing stalled legislation designed to "overhaul[]" and "moderniz[e]" antitrust law).

[48] Zeran v. Am. Online, Inc., 129 F.3d 327, 330 (4th Cir. 1997) (stressing the congressional focus on freedom of speech); *see also* Kate Klonick, *The New Governors The People, Rules, and Processes Governing Online Speech*, 131 HARV. L. REV. 1598, 1606–09 (2018) (discussing the *Zeran* case and laying out the two objectives of § 230); Batzel v. Smith, 333 F.3d 1018, 1027 (9th Cir. 2003).

support of the high-tech sector, to ensure future innovation."[49] Only very recently have some members of Congress started to question the free market orthodoxy as a foundation of the digital economy. Several bills calling for more governmental oversight over tech companies are pending in both the House of Representatives and the Senate.[50] However, persistent partisan gridlock has ensured that Congress has not been able to harness the needed political consensus to pass any such proposed legislation to date. Thus, Congress—through its inaction—continues to sustain the market-driven regulatory model as the foundation of the U.S. digital economy today.

Close links between Silicon Valley and Washington, D.C., have likely contributed to the United States' laissez-faire approach toward tech regulation. Tech companies' outsized influence over the political process in the United States is undeniable, and the lax regulatory environment, in part, reflects the tech industry's persistent lobbying efforts.[51] These tech companies' significance to the United States' economic growth and innovation base is clear, making political leaders more susceptible to their views. For example, Apple, Amazon, Alphabet, and Meta combined spent more than $55 million on lobbying the federal government in 2021, up from $34 million in 2020.[52] In 2021, Amazon alone spent a record-high $19 million on lobbying, while Meta spent over $20 million.[53] These tech companies often cite innovation and competitiveness as reasons for the government to refrain from regulating them. During congressional antitrust hearings in 2022, these companies argued that more robust antitrust legislation would give a "free pass" to foreign companies, hurting U.S. competitiveness.[54]

Thus, the United States' ideological commitment to free markets, paired with relentless corporate lobbying and congressional dysfunction,

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[49] WHITE HOUSE, INTERNATIONAL STRATEGY FOR CYBERSPACE: PROSPERITY, SECURITY, AND OPENNESS IN A NETWORKED WORLD 17 (2011), https://obamawhitehouse.archives.gov/sites/default/files/rss_viewer/international_strategy_for_cyberspace.pdf [http://perma.cc/A3C5-VNC8].

[50] *See, e.g.*, American Innovation and Choice Online Act, S. 2992, 117th Cong. § 2 (as reported by S. Comm. on the Judiciary, Mar. 2, 2022); Press Release, Ro Khanna, *supra* note 9; CONSENT Act, H.R. 5815, 115th Cong. § 2 (2018).

[51] Emily Birnbaum, *Tech Spent Big on Lobbying Last Year*, POLITICO (Jan. 24, 2022, 10:24 AM), https://www.politico.com/newsletters/morning-tech/2022/01/24/tech-spent-big-on-lobbying-last-year-00001144 [https://perma.cc/MB2J-2REN].

[52] *Id.*

[53] Cat Zakrzewski, *Tech Companies Spent Almost $70 Million Lobbying Washington in 2021 as Congress Sought to Rein in Their Power*, WASH. POST (Jan. 21, 2022, 2:51 PM), https://www.wapo.com/technology/2022/01/21/tech-lobbying-in-washington/ [https://perma.cc/2MZ3-A7Z2].

[54] Kent Walker, *The Harmful Consequences of Congress's Anti-Tech Bills*, GOOGLE: PUB. POL'Y (Jan. 18, 2022), https://blog.google/outreach-initiatives/public-policy/the-harmful-consequences-of-congresss-anti-tech-bills/ [https://perma.cc/N6F5-8JNU].

likely explains why the country has refrained from regulating its tech industry to date. Although this regulatory approach has faced criticism, many believe it has ensured that the American culture of innovation and commitment to technological progress has remained untouched, contributing to economic growth and social progress.

B. Digital Regulation in the European Union

The EU acknowledges that tech companies' innovative products and services generate vast benefits for individuals and societies and that their development should therefore be encouraged.[55] At the same time, the European approach towards the tech industry reflects its concern that the digital transformation has ushered in an exceedingly concentrated economy where a few powerful tech companies possess vast economic wealth and political power.[56] With their economic power, these companies can abuse their market dominance and restrict competition to the detriment of their rivals and consumers.[57] The EU also maintains that unmitigated free speech online does not always serve societies well.[58] This is consistent with an increasingly common view that these companies have become platforms for disinformation, hate speech, and other repulsive content, often undermining the safety and dignity of individuals while dividing societies and destabilizing democracies.[59] They have also violated individuals' rights to data privacy by extracting vast data on their users' private lives and commercializing that information through targeted advertising.[60]

In light of these concerns, the EU has engaged in extensive regulatory activity over the past decade, adopting a number of laws that restrict tech companies' business models. The EU protects the fundamental right to data privacy through the 2016 General Data Protection Regulation (GDPR).[61] It also seeks to curtail the market power of dominant tech companies through active enforcement of antitrust laws, complemented by the 2022 Digital

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[55] *See* EUR. COMM'N, 2030 DIGITAL DECADE: REPORT ON THE STATE OF THE DIGITAL DECADE 2023 6 (Sept. 27, 2023), https://digital-strategy.ec.europa.eu/en/library/2023-report-state-digital-decade [https://perma.cc/49TG-WGAP] (recognizing benefits of tech innovation in the context of the EU's digital transformation policy program).

[56] Digital Markets Act, *supra* note 39, at 2.

[57] *Id.*

[58] Digital Services Act, *supra* note 37, at 2.

[59] *See generally* TARLETON GILLESPIE, CUSTODIANS OF THE INTERNET: PLATFORMS, CONTENT MODERATION, AND THE HIDDEN DECISIONS THAT SHAPE SOCIAL MEDIA (2018) (calling for improvements to content moderation by social media platforms).

[60] *See* SHOSHANA ZUBOFF, THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER 15 (2019).

[61] GDPR, *supra* note 38.

Markets Act (DMA).[62] The DMA is a major piece of digital regulation which aims to enhance market competition by restricting certain business practices by digital "gatekeepers" that are deemed anticompetitive.[63] The EU regulates online content through a host of regulatory instruments, including the 2019 Copyright Directive[64] and the 2021 Regulation on Terrorist Content.[65] It has implemented codes of conduct targeting disinformation and hate speech,[66] which paved the way for an overarching regulation of online intermediaries, the 2022 Digital Services Act (DSA).[67] The EU's ambitious and comprehensive Artificial Intelligence Act was adopted in 2024.[68] And further yet, the EU is enhancing the labor rights of platform workers with a Directive that is expected to be adopted in 2024.[69] These are but a few examples of the multifaceted regulatory agenda through which the EU is actively shaping the digital economy.[70]

What these numerous digital regulations have in common is a focus on enhancing rights—be it the fundamental rights of internet users, the democratic rights of digital citizens, the social rights of platform workers, or various economic rights of smaller market actors. The EU's extensive digital agenda also reflects a deep-seated belief that markets left to their own devices will not yield optimal outcomes and that government intervention is needed to preserve and strengthen these rights.[71] In contrast to the American market-driven model, which emphasizes how governments do not understand technology and should refrain from regulating it, the EU is more concerned that tech companies do not understand how technology implicates

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[62] Digital Markets Act, *supra* note 39.

[63] *Id.* at 2.

[64] Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on Copyright and Related Rights in the Digital Single Market and Amending Directives 96/9/EC and 2001/29/EC, 2019 O.J. (L 130) 92, 93.

[65] Council Regulation 2021/784, 2021 O.J. (L 172) 79, 81.

[66] EUR. COMM'N, THE STRENGTHENED CODE OF PRACTICE ON DISINFORMATION 2022 1 (2022), https://ec.europa.eu/newsroom/dae/redirection/document/87585 [https://perma.cc/R35G-UN29]; EUR. COMM'N, CODE OF CONDUCT ON COUNTERING ILLEGAL HATE SPEECH ONLINE 1 (2016), https://ec.europa.eu/newsroom/just/document.cfm?doc_id=42985 [https://perma.cc/4EHF-PLSG].

[67] Digital Services Act, *supra* note 37, at 2.

[68] Council Regulation 2024/1689, 2024 O.J. (L) 1.

[69] *Proposal for a Directive of the European Parliament and of the Council on Improving Working Conditions in Platform Work*, COM (2021) 762 final (Dec. 9, 2021).

[70] For other examples, see Council Regulation 2023/2854, 2023 O.J. (L), which regulates data access and use; Council Regulation 2022/868, 2022 O.J. (L 152) 1, 2, which regulating data sharing and governance; and Foo Yun Chee, *EU's Planned Digital Levy to Cover Hundreds of Firms, Vestager Says*, REUTERS (July 2, 2021, 12:08 PM), https://www.reuters.com/business/exclusive-eus-planned-digital-levy-cover-hundreds-firms-vestager-says-2021-07-02/ [https://perma.cc/TXM4-LKNE], which discusses a tax on digital companies.

[71] Anu Bradford, *Europe's Digital Constitution*, 64 VA. J. INT'L L. 1, 12 (2023).

individuals' fundamental rights or democratic institutions—which their products and services frequently undermine.[72] Thus, the EU perceives that the digital economy needs to be regulated to ensure that it will be rights-preserving, democracy-enhancing, and, ultimately, capable of distributing the benefits of the digital transformation more widely and fairly.

The EU's pro-regulation stance is not limited to the technology sector, but instead reflects a broader view of the operation of markets and the optimal role of government. Compared to the United States, the state enjoys greater public trust in the EU and can therefore assume a more prominent role in regulating markets.[73] In terms of the influential literature on "varieties of capitalism," most European countries exhibit features of a "coordinated market econom[y]" as opposed to a "liberal market econom[y]," meaning they reserve a greater role for government regulation and nonmarket institutions.[74] Andreas Schwab, a Member of the European Parliament and the Parliament's chief negotiator for the DMA, captured this view when he recently commented on the passage of the DMA in Parliament. He emphasized that the "message is clear: the EU will enforce the rules of the social market economy also in the digital sphere, and this means that lawmakers dictate the rules of competition, not digital giants."[75]

The EU's rights-driven regulatory approach reflects an ideological commitment to a human-centric digital economy. This regulatory approach also has strong backing from the European citizenry, revealed by several large public opinion surveys that show significant support for more extensive digital regulation.[76] This public support has lent both democratic legitimacy

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[72] *See* Paul Nemitz, *Constitutional Democracy and Technology in the Age of Artificial Intelligence*, PHIL. TRANSACTIONS ROYAL SOC'Y A, Nov. 28, 2018, at 5.

[73] The EU's commitment to the social market economy is explicitly mentioned as a common objective for Europe. *See* Consolidated Version of the Treaty on European Union art. 3, 2012 O.J. (C 326) 13, 17 [hereinafter TEU]; Sneha Gubbala, *People Broadly View the EU Favorably, Both in Member States and Elsewhere*, PEW RSCH. CTR. (Oct. 24, 2023), https://www.pewresearch.org/short-reads/2023/10/24/people-broadly-view-the-eu-favorably-both-in-member-states-and-elsewhere/ [https://perma.cc/UTQ6-B3VS].

[74] *See* PETER A. HALL & DAVID SOSKICE, VARIETIES OF CAPITALISM: THE INSTITUTIONAL FOUNDATIONS OF COMPARATIVE ADVANTAGE 8 (2001).

[75] Press Release, European Parliament, Digital Markets Act: Parliament Ready to Start Negotiations with Council (Dec. 15, 2021, 7:15 PM), https://www.europarl.europa.eu/news/en/press-room/20211210IPR19211/digital-markets-act-parliament-ready-to-start-negotiations-with-council [http://perma.cc/9FHM-UQY3].

[76] *See, e.g.*, KANTAR PUB. BRUSSELS, KANTAR BELG., SPECIAL EUROBAROMETER 477 REPORT: DEMOCRACY AND ELECTIONS 5 (Nov. 2018) (discussing surveys relating to social networks roles in elections), https://europa.eu/eurobarometer/api/deliverable/download/file?deliverableId=67373 [https://perma.cc/3MY3-QB4K]; KANTAR, KANTAR BELG., SPECIAL EUROBAROMETER 503 REPORT: ATTITUDES TOWARDS THE IMPACT OF DIGITALISATION ON DAILY LIVES 50 (Mar. 2020), https://europa.eu/eurobarometer/api/deliverable/download/file?deliverableId=72615 [https://perma.cc/8EPT-MV3M].

and political momentum to the EU's regulatory agenda—momentum that even extensive lobbying by the tech industry has not been able to reverse.[77] The political environment in the EU has also been conducive to extensive rulemaking. In contrast to their American counterparts, European political elites are ideologically less divided and consequently more responsive to public demand for more stringent regulations. Parties across the ideological spectrum in Europe may differ in the extent of their support for regulation, but they share a fundamental commitment to a regulated market economy.[78] The DMA illustrates this political consensus particularly well. The law was adopted in the European Parliament with 588 votes in favor, 11 against, and 31 abstentions, with parties across the political spectrum lending resounding support.[79] This degree of consensus is revealing of Europe's faith that governments, not tech companies, ought to be the guardians of the digital economy.

C. The Perceived Relationship Between Digital Regulation and Innovation

The above discussion reveals that the EU regulates the digital economy with a relatively heavy hand compared to the United States. The EU's restrictive regulatory approach is often thought to increase the operating costs of companies and to deter innovation, casting a shadow over the EU's technology sector and leaving the EU behind the United States and China in the unfolding tech race. Thus, a common criticism associated with the European regulatory approach is that it overdoes regulation—to the extent that it kills innovation and stifles economic progress. According to this view, the EU may be more successful in safeguarding the fundamental rights of individuals and the democratic structures of society, but its stringent regulatory approach deprives societies of economic opportunities and technological innovations. This concern stems from a widely held belief that there is an inevitable trade-off between regulation and innovation.

Several tech entrepreneurs and industry analysts explicitly trace EU tech companies' relative lack of success to the level of tech regulation they face. Andrew McAfee, cofounder of the MIT Initiative on the Digital

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[77] Adam Satariano & Matina Stevis-Gridneff, *Big Tech Turns Its Lobbyists Loose on Europe, Alarming Regulators*, N.Y. TIMES (Dec. 14, 2020), https://www.nytimes.com/2020/12/14/technology/big-tech-lobbying-europe.html [https://perma.cc/G2LY-PN54]; Javier Espinoza, *How Big Tech Lost the Antitrust Battle with Europe*, FIN. TIMES (Mar. 21, 2022), https://www.ft.com/content/cbb1fe40-860d-4013-bfcf-b75ee6e30206 [https://perma.cc/4BZ8-9QXC].

[78] Consolidated Version of the Treaty on European Union art. 3, Oct. 26, 2012, 2012 O.J. (C 326) 13.

[79] *European Parliament's Plenary Adopts the Digital Services Act and Digital Markets Act*, ECOMMERCE EUR. (July 7, 2022), https://ecommerce-europe.eu/news-item/european-parliaments-plenary-adopts-the-digital-services-act-and-digital-markets-act/ [https://perma.cc/JHV9-9K38].

Economy, predicts that the "expensive and time-consuming requirements" in the EU's proposed AI rules "will generate less tech innovation."[80] Jack Ma, the cofounder of Alibaba Group, has also suggested that the EU's "tighter regulation could hamper its ability to innovate."[81] Other major industry voices concur, arguing that the EU's proposed AI rules "will have a negative impact on Europe's technology sector over the long term."[82] Further yet, a 2020 study, conducted by Oxera but commissioned by Amazon, strikes a similar tone, warning that the EU's DMA "risk[s] reducing innovation overall."[83] These statements capture a common sentiment that assumes a direct link between the EU's stringent tech regulations and its lackluster technological progress.

Most leading tech companies, unsurprisingly, frequently voice criticism that more tech regulation results in lesser innovation. In commenting on the EU's proposed DMA, Apple noted that mandated data access obligations may hinder innovation, while warning that the Commission's proposed measures on interoperability would "stifle the kind of consumer-focused innovation that Apple stands for."[84] Google cautioned the Commission that with ex ante regulation such as the DMA, "there is a risk of chilling innovation to the detriment of consumers."[85] For example, a blanket ban on self-preferencing—a practice for which the EU previously fined Google—would, according to Google, "deny users the benefits of innovation and product improvements."[86] Microsoft, which has generally been more

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[80] Andrew McAfee, *EU Proposals to Regulate AI Are Only Going to Hinder Innovation*, FIN. TIMES (July 25, 2021), https://www.ft.com/content/a5970b6c-e731-45a7-b75b-721e90e32e1c [https://perma.cc/84Z2-QAEQ].

[81] Zen Soo, *Alibaba's Jack Ma Says He Is 'Worried' Europe Will Stifle Innovation with Too Much Tech Regulation*, S. CHINA MORNING POST (May 17, 2019, 6:09 AM), https://www.scmp.com/tech/big-tech/article/3010606/alibabas-jack-ma-says-he-worried-europe-will-stifle-innovation-too [https://perma.cc/C5K6-SBXT].

[82] Angus Loten, *Corporate Tech Leaders Are Mixed on EU Artificial Intelligence Bill*, WALL ST. J. (Apr. 21, 2021, 8:02 PM), https://www.wsj.com/articles/corporate-tech-leaders-are-mixed-on-eu-artificial-intelligence-bill-11619049736 [https://perma.cc/2WUW-RNEH].

[83] OXERA, THE IMPACT OF THE DIGITAL MARKETS ACT ON INNOVATION 1 (Nov. 2020), https://www.oxera.com/wp-content/uploads/2020/11/The-impact-of-the-Digital-Markets-Act-on-innovation_FINAL-3.pdf [https://perma.cc/USE9-QWAS?view-mode=server-side].

[84] APPLE, APPLE RESPONSE TO DIGITAL SERVICES ACT CONSULTATION PROPOSAL FOR EX ANTE REGULATION OF GATEKEEPER PLATFORMS 11 (2020), https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12417-Digital-Services-Act-deepening-the-Internal-Market-and-clarifying-responsibilities-for-digital-services/public-consultation_en [https://perma.cc/S7B9-4HSJ] (download "Documents annexed to contributions" file under "Contributions to the consultation," then select document labeled "Public_Apple comments on the DSA_Gatekeeper Regulation_September 2020.pdf").

[85] GOOGLE, QUESTIONNAIRE FOR THE PUBLIC CONSULTATION ON A NEW COMPETITION TOOL: GOOGLE'S SUBMISSION 22 (2020), https://blog.google/documents/88/Googles_submission_on_a_New_Competition_Tool.pdf [https://perma.cc/ZEX7-B8GV].

[86] *Id.* at 9.

amenable to regulation than its counterparts, also expressed reservations about the DMA, noting that the lack of sufficiently clear guidance on gatekeepers "will create uncertainty" and "only hamper growth in digital markets and online platform innovation or otherwise reduce consumer welfare."[87]

The U.S. government and industry associations have frequently expressed concern over the EU's approach toward tech regulation, criticizing EU regulation of data privacy, antitrust, and AI alike. In commenting on the GDPR in 2015, the American Chamber of Commerce to the European Union welcomed harmonized EU rules while cautioning that the "GDPR falls short of striking a balance between stimulating innovation and protecting personal information," costing the EU both jobs and investment.[88] The U.S. government also raised numerous concerns about the DMA in 2022, warning against "unintended adverse consequences, such as inadvertent cybersecurity risks or harms to technological innovation" and expressing concern that the DMA was discriminating against U.S. companies.[89] Eric Schmidt, the Chair of the U.S. National Security Commission on AI and the former CEO of Google, has criticized the EU's AI Act as being "a very big setback" for Europe.[90] According to Schmidt, the EU should be an "innovation partner to the U.S." so that the two allies can better compete with China, but instead "the EU did regulation first and . . . that's a mistake."[91]

Tech companies have invoked similar concerns when opposing tech legislation in the United States by stressing their critical role in sustaining the American innovation economy.[92] Congress's efforts to subject tech

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[87] MICROSOFT, MICROSOFT RESPONSE TO DIGITAL SERVICES ACT CONSULTATION PROPOSAL FOR EX ANTE REGULATION OF GATEKEEPER PLATFORMS 6 (2020), https://blogs.microsoft.com/wp-content/uploads/prod/sites/73/2020/09/Microsoft-Position-Paper-re-Proposed-DSA-Ex-Ante-Regulation-FINAL.pdf [https://perma.cc/GG46-VPZ2].

[88] *GDPR Falls Short of Its Ambition*, AMCHAM EU (Dec. 16, 2015), https://www.amchameu.eu/media-centre/press-releases/gdpr-falls-short-its-ambition [https://perma.cc/HSE3-RCJB].

[89] Samuel Stolton, *US Pushes to Change EU's Digital Gatekeeper Rules*, POLITICO (Jan. 31, 2022, 1:16 PM), https://www.politico.eu/article/us-government-in-bid-to-change-eu-digital-markets-act/ [https://perma.cc/5THV-2BWF].

[90] Pieter Haeck, *Ex-Google Boss Slams Transparency Rules in Europe's AI Bill*, POLITICO (May 31, 2021, 5:57 PM), https://www.politico.eu/article/ex-google-boss-eu-risks-setback-by-demanding-transparent-ai/ [https://perma.cc/FCY5-RHRN].

[91] *Id.*

[92] *See, e.g.*, Letter from Timothy Powderly, Senior Dir. of Gov. Affs. for the Americas, Apple to Senator Dick Durbin, Chairman, Comm. on the Judiciary, Senator Chuck Grassley, Ranking Member, Comm. on the Judiciary, Senator Amy Klobuchar, Chair, Subcomm. on Competition Pol'y, Antitrust & Consumer Rts., Comm. on the Judiciary, and Senator Mike Lee, Ranking Member, Subcomm. on Competition Pol'y, Antitrust, & Consumer Rts., Comm. on the Judiciary (Jan. 18, 2022), https://9to5mac.com/wp-content/uploads/sites/6/2022/01/Apple-letter-full.pdf [https://perma.cc/PAQ4-

companies to greater antitrust scrutiny have faced particularly stark opposition from tech companies. According to Google President of Global Affairs Kent Walker, the proposed American Innovation and Choice Online Act—a bill drafted to rein in the anticompetitive practices of the leading tech companies—"would be a dramatic reversal of the approach that has made the United States a global technology leader, and risks ceding America's technology leadership and threatening our national security." It would "[h]andicap[] America's technology leaders" while leaving foreign companies "free to innovate."[93] Leading tech companies have made similar arguments when seeking to debunk other types of tech regulation. In a congressional hearing on social media privacy and abuse of data, Meta's Mark Zuckerberg emphasized the importance of "enabling innovation" when regulating sensitive technologies such as facial recognition, invoking the threat of Chinese companies gaining competitive advantages if U.S. companies' ability to innovate is curtailed by extensive regulation.[94]

In addition to tech companies' direct lobbying efforts, many industry associations and think tanks have sought to persuade Congress to retain its hands-off approach, arguing that tech regulation would hurt innovation and the United States' international competitiveness. In 2022, the U.S. Chamber of Commerce warned that proposed antitrust bills, if enacted, "would drag the United States down in an unfolding global technological competition," constraining companies that are "the strongest drivers of U.S. innovation" while causing "self-inflicted wounds to our competitiveness" by "turning antitrust into a weapon against dynamic and successful U.S. firms."[95] James Andrew Lewis from the Center for Strategic and International Studies has emphasized how "[t]echnological innovation does not flourish in an environment of risk-averse and burdensome regulation."[96] Executives from

UC6P] (warning against regulatory overreach when commenting on American Innovation and Choice Online Act, emphasizing how its "App Store has been an incredible engine for economic growth and innovation since its founding in 2008," and an "economic miracle for developers," who—thanks to Apple—have been able to reach users around the world. Interfering with the App Store would undermine security and privacy, which have been hallmarks of Apple's product development).

[93] Walker, *supra* note 54.

[94] *Facebook, Social Media Privacy, and the Use and Abuse of Data Joint Hearing Before the S. Comm. on Com., Sci. & Transp. and the S. Comm. on the Judiciary*, 115th Cong. 22 (2018) (statement of Mark Zuckerberg, Chairman and CEO, Facebook), https://www.congress.gov/event/115th-congress/senate-event/LC64510/text?q=%7B%22search%22%3A%5B%22%5C%22CONSENT+act%5C%22%22%5D%7D&s=6&r=27 [https://perma.cc/MQ88-5BVP].

[95] U.S. CHAMBER OF COM., U.S. ANTITRUST LEGISLATIVE PROPOSALS: A GLOBAL PERSPECTIVE 3 (2022), https://www.uschamber.com/assets/documents/u.s.-antitrust-legislative-proposals-a-global-perspective-final-locked-2.16.22.pdf [https://perma.cc/NV45-U4QR].

[96] James Andrew Lewis, *Tech Regulation Can Harm National Security*, CTR. FOR STRATEGIC & INT'L STUD. (Nov. 28, 2022), https://www.csis.org/analysis/tech-regulation-can-harm-national-security [https://perma.cc/RV6U-5JW9].

the American Enterprise Institute and the National Security Institute have similarly stressed the costs on U.S. tech companies' competitiveness, warning against "voluntarily ceding critical technological and economic advantage to countries such as China at a time when leading in key technologies and tech markets is critical for [the] nation's long-term thriving."[97] Josh Withrow from the R Street Institute has urged the United States not to "stifle U.S. tech innovation with Europe's rules," noting how "[the EU's] proclivity for precautionary regulation is one of the reasons that almost none of the large tech companies they aim to govern are actually from Europe," and describing the EU's approach as being "'[i]f you can't innovate, regulate."[98]

U.S. lawmakers have often been receptive to these arguments, defending their regulatory inaction on the grounds that they are preserving tech companies' incentives to innovate. This has been the case since the early days when the Internet was commercialized in the 1990s and regulation was first debated in Congress. As acknowledged earlier, § 230 of the CDA reflected the view that tech companies should be protected from regulation in order to develop innovative internet services.[99] The regulation of data privacy has also been opposed due to fears that such regulation would stifle innovation. During congressional hearings on privacy in 2012, then-Representative and current Senator Marsha Blackburn warned the United States against following the "European privacy model," noting how that model "take[s] information out of the information economy" and causes "revenues [to] fall [and] innovation [to] stall[]."[100] Even though many U.S. lawmakers have recently turned against the tech industry, no meaningful legislation has emerged from this new political environment. Tech companies have continued their relentless lobbying, ensuring that bills such as the American Innovation and Choice Online Act have failed.[101] In refusing to back more stringent antitrust oversight, members of Congress have

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[97] DON'T BREAK WHAT WORKS, SENATORS, EXPERTS: AMERICAN INNOVATION AND CHOICE ONLINE ACT HAS SERIOUS FLAWS 5 (2022) (quoting Klon Kitchen of the American Enterprise Institute and Jamil Jaffer of the National Security Institute), https://dontbreakwhatworks.ccianet.org/wp-content/uploads/2022/03/Big-WTAS-Updated-3.9.pdf [https://perma.cc/9AHB-2PPM].

[98] Withrow, *supra* note 2.

[99] *See supra* notes 45–48 and accompanying text.

[100] *Balancing Privacy and Innovation Does the President's Proposal Tip the Scale? Hearing Before the Subcomm. on Com., Mfr. & Trade of the H. Comm. on Energy & Com.*, 112th Cong. 11 (2012) (statement of Rep. Marsha Blackburn), https://www.govinfo.gov/content/pkg/CHRG-112hhrg81441/pdf/CHRG-112hhrg81441.pdf [https://perma.cc/B7B4-E9ZB].

[101] *See* Emily Birnbaum, *Big Tech Divided and Conquered to Block Key Bipartisan Bills*, BLOOMBERG (last updated Dec. 20, 2022, 11:00 AM), https://www.bloomberg.com/news/articles/2022-12-20/big-tech-divided-and-conquered-to-block-key-bipartisan-bills#xj4y7vzkg [https://perma.cc/8F66-2NJS].

invoked various concerns—including national security and privacy—but one consistent ground for opposition has been the weakening of American innovation and global competitiveness.[102]

In the 2020 antitrust hearings held by the U.S. House of Representatives, which brought in leading tech CEOs for extensive questioning, many representatives expressed concerns about tech companies' outsized market power and anticompetitive behavior.[103] Others remained concerned that the proposed antitrust bills would hamper tech innovation and economic growth. Representative Steve Chabot registered his opposition, noting his belief that the bills were "going to hurt innovation."[104] He warned against allowing "government bureaucrats" to "dismantle successful companies," while adding that "[w]riting legislation under the guise of antitrust law is not how we innovate if we want to compete with China."[105] Several House members echoed these comments, with Representative Darrell Issa warning that the bills would "slow the rate of innovation,"[106] Representative Eric Swalwell expressing concern that the bills would "slow innovation and make [the country] less competitive, particularly to China,"[107] and Representative Zoe Lofgren emphasizing how the bills would "undercu[t] [the United States'] position relative to [its] international competitors."[108] These comments illustrate how deep-seated the perception that tech regulation harms innovation is among U.S. lawmakers, contributing to the continuing regulatory stalemate in Congress.

In addition to these views expressed by tech companies, industry associations, and many U.S. lawmakers, a number of scholars have argued

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[102] *See, e.g.*, DON'T BREAK WHAT WORKS, *supra* note 97 (noting Senator Chris Coons's comments opposing the bill because of its "potentially unintended negative consequences on [] competitiveness globally").

[103] *See* Press Release, David N. Cicilline, Chair, House Judiciary Antitrust, Com. & Admin. L. Subcomm., Antitrust Subcommittee Chair Cicilline Statement for Hearing on "Online Platforms and Market Power, Part 6: Examining the Dominance of Amazon, Apple, Facebook, and Google" (July 29, 2020), https://democrats-judiciary.house.gov/news/documentsingle.aspx?DocumentID=3199 [https://perma.cc/LCR7-F942].

[104] *Markup of H.R. 3843, the "Merger Filing Fee Modernization Act of 2021"; H.R. 3460, the "State Antitrust Enforcement Venue Act of 2021"; H.R. 3849, the "Augmenting Compatibility and Competition by Enabling Service Switching Act of 2021" or the "ACCESS Act of 2021"; H.R. 3826, the "Platform Competition and Opportunity Act of 2021"; H.R. 3816, the "American Choice and Innovation Online Act"; and H.R. 3825, the "Ending Platform Monopolies Act*": *Hearing Before the H. Comm. on the Judiciary*, 117th Cong. 63 (2021) (unofficial transcript) (statement of Rep. Steve Chabot), http://docs.house.gov/meetings/JU/JU00/20210623/112818/HMKP-117-JU00-Transcript-20210623.pdf [https://perma.cc/PWV2-ZK2B].

[105] *Id.* at 829.

[106] *Id.* at 516 (statement of Rep. Darrell Issa).

[107] *Id.* at 233 (statement of Rep. Eric Swalwell).

[108] *Id.* at 832 (statement of Rep. Zoe Lofgren).

that tech regulation can compromise innovation—even if their argument is often more nuanced, qualified, or context-specific. For example, William Rogerson has warned that telecommunications regulation "may interfere with innovation both because it reduces incentives of firms to innovate, and because it reduces the diversity of the pool of innovators."[109] Richard Epstein has argued that while some regulation of the technology industry is necessary, "allowing technology to be free from regulation will make the system both more competitive and more efficient."[110] Others have emphasized that tech regulation may be particularly ill-suited for guiding technological innovation given the fast pace of technological development and the slow pace of generating and implementing regulations,[111] whereas yet others have noted that "[r]egulation deters more startup innovation and activity, especially in areas where innovation can provide . . . the greatest benefits."[112] Several scholars have criticized efforts to tighten antitrust regulation in particular; for example, Gus Hurwitz and Geoffrey Manne note how those efforts—which they refer to as "regulation by intimidation"—may "scare companies into inaction."[113] Carmelo Cennamo and Daniel Sokol describe the EU's recently adopted DMA as "too blunt, with the risk of constraining value creation" while "produc[ing] stifling unintended consequences."[114] According to them, the DMA fails to account for "innovation dynamics."[115]

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[109] William P. Rogerson, *The Regulation of Broadband Telecommunications, the Principle of Regulating Narrowly Defined Input Bottlenecks, and Incentives for Investment and Innovation*, 2000 U. CHI. LEGAL F. 119, 128.

[110] Richard A. Epstein, *Can Technological Innovation Survive Government Regulation?*, 36 HARV. J.L. & PUB. POL'Y 87, 97 (2013).

[111] *See, e.g.*, Gary E. Marchant, *The Growing Gap Between Emerging Technologies and the Law*, *in* THE GROWING GAP BETWEEN EMERGING TECHNOLOGIES AND LEGAL-ETHICAL OVERSIGHT 27–28 (Gary E. Marchant, Braden R. Allenby & Joseph R. Herkert eds., 2011) ("Legal and regulatory systems have generally been oblivious to the growing lag between legal oversight mechanisms and the rapid pace of emerging technologies."); Wulf A. Kaal & Robert N. Farris, *Innovation and Legislation The Changing Relationship—Evidence from 1984 to 2015*, 58 JURIMETRICS 303, 305–06 (2018) ("The law and technology literature and the literature on dynamic regulation recognize that legal institutions' capacity to react to innovative technologies is diminishing.").

[112] LIYA PALAGASHVILI, MERCATUS CTR. AT GEORGE MASON UNIV., EXPLORING HOW REGULATIONS SHAPE TECHNOLOGY STARTUPS 32 (June 1, 2021), https://www.mercatus.org/research/research-papers/exploring-how-regulations-shape-technology-startups [https://perma.cc/5N8U-ESYN].

[113] Gus Hurwitz & Geoffrey Manne, *Antitrust Regulation by Intimidation*, WALL ST. J. (July 24, 2023, 6:08 PM), https://www.wsj.com/articles/antitrust-regulation-by-intimidation-khan-kanter-case-law-courts-merger-27f610d9 [https://perma cc/6AGG-XCJG].

[114] Carmelo Cennamo & D. Daniel Sokol, *Can the EU Regulate Platforms Without Stifling Innovation?*, HARV. BUS. REV. (Mar. 1, 2021), https://hbr.org/2021/03/can-the-eu-regulate-platforms-without-stifling-innovation [https://perma.cc/GT3F-E7PR].

[115] *Id.*

Some legal scholars have specifically contrasted the United States and the EU approaches to regulation. Anupam Chander draws a connection between the success of U.S. tech companies and the permissive regulatory environment they have faced in their home market.[116] In contrast, extensive regulatory constraints in Europe have held back the EU's tech sector, contributing to the existing innovation gap. Illustrating his argument through examples from data privacy, content moderation, and intellectual property, Chander argues that "reduced liability concerns for Internet intermediaries, coupled with low privacy protections," created an enabling legal environment in the United States in which new tech companies could thrive and innovate.[117] While stringent data privacy rules "hobbled internet startups" in Europe,[118] the "absence of privacy constraints proved especially conducive to Internet innovation" in Silicon Valley, Chander asserts.[119] He also describes European rules on intermediary liability as less welcoming to tech companies, hence contributing to the relatively greater success of U.S. internet companies.[120]

Other scholars have similarly argued that exacting tech regulations compromise innovation. Tal Zarsky claims that there is a link between lenient U.S. privacy laws and the success of U.S. tech companies and asserts that the EU's stringent privacy laws have contributed to the European tech industry's relative stagnation.[121] In citing the EU's weak performance as a tech leader, Zarsky argues that "an inescapable linkage between the strength of privacy laws and the level of ICT innovation is evident."[122] This, according to Zarsky, points toward a conclusion that the EU should consider easing its privacy laws while the United States should refrain from adopting stringent laws,[123] adding that "[i]f the whole world had been strictly subjected to the EU Data Protection Directive, we might not have had Facebook, Gmail, or Amazon."[124]

Notwithstanding this perceived cost that tech regulation has on innovation, many commentators praise the EU's regulatory approach as necessary given the many manifest problems associated with today's tech

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[116] Chander, *supra* note 2, at 642.
[117] *Id.*
[118] *Id.*
[119] *Id.* at 667.
[120] *Id.* at 670–73.
[121] *See generally* Zarsky, *supra* note 2.
[122] *Id.* at 154.
[123] *Id.* at 162.
[124] *Id.* at 165.

economy.[125] However, even proponents of the EU's approach often assume that it involves a trade-off and comes at the expense of innovation—even if they are prepared to accept that trade-off.[126] Similarly, the absence of comprehensive privacy protections in the United States can be viewed as a "price to be paid" for innovations.[127] Under this view, the question becomes whether a society wants to pay the price. But that normative debate rests on the assumption that by pursuing stringent tech regulation, societies accept lower levels of innovation—an assumption questioned in the next Part.

II. RETHINKING DIGITAL REGULATION AND INNOVATION

The above discussion has shown how the perception that digital regulation impedes innovation often dominates public discourse. Some legal scholars have endorsed this view, but this question has not been extensively examined in the academic literature.[128] Scholarly discussion on the relationship between regulation and innovation has been more extensive in other areas of law to date, such as environmental regulation.[129] Academic analysis on the relationship between tech regulation and tech innovation is sparse in part because tech regulation remains a relatively recent phenomenon. Over the past few years, economists have begun to examine the effects of the GDPR on various market outcomes, but both theoretical and empirical literature on tech regulation beyond the nascent literature on data privacy remains undeveloped.[130] The below discussion first takes a closer look at various arguments on the relationship between regulation and innovation generally before examining how those arguments can be extended to digital regulation, focusing on data privacy, antitrust, and AI.

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[125] *See, e.g.*, *America Should Borrow from Europe's Data-Privacy Law*, ECONOMIST (Apr. 5, 2018), https://www.economist.com/leaders/2018/04/05/america-should-borrow-from-europes-data-privacy-law? [https://perma.cc/CB3V-STUN].

[126] *See, e.g.*, Chander, *supra* note 2, at 645 (comparing the lack of regulation of internet enterprises to the lack of regulation of nineteenth-century industrialization).

[127] *Id.* ("The limitations on Internet intermediary liability and the lack of omnibus privacy protections beyond those that are promised contractually by websites mean that there is a price to be paid for the amazing innovation of the past two decades.").

[128] *See, e.g.*, Aghion, *supra* note 1, at 1 ("There is considerable literature on the economic impacts of regulations, but relatively few studies on their impact on technological innovation.").

[129] *See* Yafit Lev-Aretz & Katherine J. Strandburg, *Regulation and Innovation Approaching Market Failure from Both Sides*, 38 YALE J. ON REGUL. BULL. 1, 5 (2020) ("The academic literature on the interplay between regulation and innovation focuses primarily on a few contexts, most notably environmental regulation.").

[130] *See, e.g.*, Laurent Belsie, *Impacts of the European Union's Data Protection Regulations*, NBER DIGEST (July 1, 2022), https://live-nber.pantheonsite.io/sites/default/files/2022-06/jul22.pdf [https://perma.cc/V7WK-6P9C].

A. Key Insights from Scholarship on Regulation and Innovation

Few voices today would argue that markets left to their own devices produce optimal outcomes. Instead, there is broad consensus that some degree of regulation is needed for the proper functioning of a market economy and society. Regulation helps correct market failures, minimize negative externalities, and ensure that public interest is protected. However, even though academics and policymakers agree that regulation can advance beneficial social objectives, they remain concerned that regulation may curtail private actors' incentives to innovate. Innovation is central to economic growth, which is key for societies to thrive and provide public goods to their citizens. Thus, no government can afford to disregard the effects their regulations have on innovation, which makes innovation central to any debates on regulation.

Of course, "innovation" is a nebulous word and can be used to mean different things. Much of the critical assessment of the relationship between regulation and innovation—including the commentary discussed above—equates innovation with technological progress that results in economic growth. Perhaps the most common way regulation is thought to impede innovation is that it often increases compliance costs.[131] It is well understood that regulations can be costly to implement. The public conversation often uses the term "regulatory burden," which assumes that regulatory compliance has a negative impact on economic activity.[132] Regulation may adversely affect productivity, new investment, and innovation and slow down economic growth and technological progress.[133] If companies need to spend extensive resources on regulatory compliance, those resources may be diverted away from various R&D activities that are designed to support new innovations. As a result, regulation may lead to a reduced rate of innovation and more limited technological progress.[134]

However, more regulation does not always mean less innovation. Certain types of regulation are by design susceptible to promoting innovation. For example, intellectual property protection incentivizes investments in R&D by granting a temporary monopoly for firms and individuals to enjoy the rewards of their innovations. There are also numerous historical examples that show how U.S. government regulation has spurred innovation, or even created new industries. For example, in the

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[131] Crafts, *supra* note 1, at 187.

[132] *The Cumulative Regulatory Burden Is Substantial and Growing, Weighing on Businesses and the Broader U.S. Economy*, BUS. ROUNDTABLE, https://s3.amazonaws.com/brt.org/CumulativeRegulatoryBurden.pdf [https://perma.cc/S9H6-QV2M].

[133] Crafts, *supra* note 1, at 190.

[134] *Id.*

1970s, the U.S. government regulated the telecommunications monopoly AT&T, culminating in the breakup of the company in 1984.[135] This was widely seen as encouraging internet innovation.[136] Similarly, common carrier rules, including rules on "net neutrality"—a term that refers to internet carriers needing to offer all content providers equal access to the network—are commonly seen as having contributed to a thriving internet industry in the United States.[137]

In his seminal work, Michael E. Porter has shown how regulation can spur innovation. Specifically, Porter has argued that regulation can incentivize firms to transform their products and production processes in ways that generate not only environmental, health, safety or other social benefits but also lead to economic gains.[138] This "Porter hypothesis" rests on the idea that regulation often spurs companies to upgrade or re-engineer their technologies. A company that successfully develops a new technology to meet the demands of a regulation can have a first-mover advantage, which can lead the firm to capture the market and reap notable economic rewards.[139] This way, "innovation offsets" generated by a regulation can exceed the compliance costs associated with regulation, leading to a net benefit in terms of innovation.[140] Regulations may not only catalyze incumbent firms to re-tool their production; they may also encourage new entrants to enter the market with new and innovative products that were designed to meet the regulatory demands, which can displace existing inferior technologies.[141] Thus, the net impact of regulation on innovation depends on whether the "incentive effect" outweighs the compliance costs associated with regulation.[142]

The Porter hypothesis focuses on the economic costs and benefits of regulation. However, a more comprehensive analysis also accounts for various social benefits—such as the mitigation of climate change—when

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[135] Christos A. Makridis & Joel Thayer, *The Big Tech Antitrust Paradox A Reevaluation of the Consumer Welfare Standard for Digital Markets*, 27 STAN. TECH. L. REV. 71, 101–02 (2023).

[136] *See* Tim Wu, *Antitrust via Rulemaking Competition Catalysts*, 16 COLO. TECH. L.J. 33, 42–44 (2017).

[137] *See id.* at 59.

[138] Michael E. Porter, *America's Green Strategy*, SCI. AM., Apr. 1991, at 168; *see also* Michael E. Porter & Claas van der Linde, *Toward a New Conception of the Environment-Competitiveness Relationship*, 9 J. ECON. PERSP. 97, 98 (1995).

[139] Porter & van der Linde, *supra* note 138, at 104–05.

[140] *Id.* at 98.

[141] Nicholas A. Ashford & Ralph P. Hall, *The Importance of Regulation-Induced Innovation for Sustainable Development*, 3 SUSTAINABILITY 270, 277–78 (2011).

[142] Knut Blind, *The Impact of Regulation on Innovation* 6 (Nesta Working Paper, Paper No. 12/02, 2012), https://media.nesta.org.uk/documents/the_impact_of_regulation_on_innovation.pdf [https://perma.cc/MNN9-6NLH].

analyzing the costs and benefits of regulations. Richard Stewart's work on the interplay between regulation and innovation has been particularly influential in conceptually distinguishing between "market innovation" and "social innovation."[143] Market innovation refers to the development of new products or processes that lead to productivity gains and thus create economic benefits that the firm can capture on the marketplace.[144] Social innovation refers to social benefits, such as cleaner air, that the firm cannot directly monetize through sales. At times, regulations may adversely affect market innovations but can still lead to social innovations as regulations incentivize firms to undertake investments that promote certain social objectives.[145] However, it is also possible for a given innovation to generate both types of benefits, leading to social innovations and market innovations at the same time.[146]

These influential scholarly insights suggest that the relationship between regulation and innovation is not always straightforward. Instead, the innovation effects may depend on the particular regulatory design.[147] For example, more stringent regulations have been found to incentivize more radical innovations, whereas less stringent regulations tend to push firms toward more incremental innovations.[148] Stringent regulations may therefore be more effective in incentivizing more foundational or disruptive innovations compared to lenient regulations that can be satisfied with more incremental adjustments to firms' products and processes. Also, while regulations often have negative effects on innovation in the short term, those effects can be positive in the long term.[149] This suggests that tech regulation is also unlikely to have a one-directional relationship to innovation—a proposition that seems validated when examining the regulation of data privacy, antitrust, and AI below.

B. How Data Privacy Regulation Affects Innovation

Tech companies often resist regulation on grounds that such regulation is costly. For example, Google noted that it had spent "hundreds of years of

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[143] *See generally* Richard B. Stewart, *Regulation, Innovation, and Administrative Law A Conceptual Framework*, 69 CALIF. L. REV. 1256 (1981).

[144] *Id.* at 1279.

[145] *See id*. at 1279, 1281.

[146] *Id*. at 1279.

[147] *See* Yafit Lev-Aretz & Katherine J. Strandburg, *Privacy Regulation and Innovation Policy*, 22 YALE J.L. & TECH. 256, 262–63 (2020) ("In general, well-designed regulation is likely to shift innovative activity into more socially desirable *directions*, rather than to reduce innovation overall.").

[148] Blind, *supra* note 142, at 16.

[149] *Id*. at 25.

human time" to achieve GDPR compliance.[150] It was reported that U.S. Fortune 500 companies collectively spent approximately $7.8 billion on GDPR compliance by May 2018, averaging $16 million per company.[151] While large tech companies often lament the costs of regulatory compliance, in relative terms these costs are even higher for small- and medium-sized tech companies—including many EU companies, which are often smaller than their U.S. counterparts—that have reduced capacity to engineer their products and services to meet the EU's exacting regulatory demands.[152] As a result, small tech companies may have fewer resources to dedicate to innovative activities after adjusting their products and services to meet the demands of the GDPR. When compliance costs are too high, these smaller tech companies may be forced to exit the market or, alternatively, never enter the market in the first place.[153]

Recent empirical research offers support for the argument that the GDPR has imposed nontrivial costs, especially on small tech companies. According to a 2022 study, numerous apps exited the Google Play Store following the implementation of the GDPR, leading the researchers to conclude that "whatever [the GDPR's] beneficial impacts on privacy protection, [it] also produced the unintended consequence of slowing innovation."[154] The GDPR can thus reduce consumer choice and curtail innovation as smaller players are regulated out of the marketplace.

The incumbent firms' incentives to innovate may also diminish in the face of less competition from smaller rivals or new entrants. Research surveying small AI startups has similarly shown that the GDPR can adversely affect early-stage companies.[155] Small startups often have access to limited data from their own pool of customers and rely on third-party data

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[150] Ashley Rodriguez, *Google Says It Spent "Hundreds of Years of Human Time" Complying with Europe's Privacy Rules*, QUARTZ (Sept. 26, 2018), https://qz.com/1403080/google-spent-hundreds-of-years-of-human-time-complying-with-gdpr/ [https://perma.cc/SP4H-BKTK].

[151] *The Internet and Digital Communications Examining the Impact of Global Internet Governance Hearing Before the Subcomm. on Commc'ns, Tech., Innovation, & the Internet of the S. Comm. on Com., Sci., & Transp.*, 115th Cong. 35 (2018) (statement of Denise E. Zheng, Vice President, Policy, Business Roundtable).

[152] James Bessen, Stephen Michael Impink, Lydia Reichensperger & Robert Seamans, GDPR and the Importance of Data to AI Startups 13 (Apr. 1, 2020) (unpublished manuscript), https://papers.ssrn.com/a=3576714 [https://perma.cc/L3Q3-VJ6J].

[153] *See* Rebecca Janßen, Reinhold Kesler, Michael E. Krummer & Joel Waldfogel, *GDPR and the Lost Generation of Innovative Apps* 20–21 (Nat'l Bureau of Econ. Rsch., Working Paper No. 30028, 2022), https://www.nber.org/system/files/working_papers/w30028/w30028.pdf [https://perma.cc/92DH-ARF5]. However, one may criticize this study's assumption that more apps always means more innovation, as some are likely only copycat apps as opposed to new apps that reflect genuine innovation.

[154] *Id.* at 37.

[155] Bessen et al., *supra* note 152, at 18–19.

to develop their algorithms.[156] With restrictions imposed on such data gathering, the GDPR increases the costs incurred by these firms to collect and analyze the data they need to develop AI applications.[157] Additionally, these companies may face greater difficulties in fundraising if investors price in the increased data acquisition costs and other compliance challenges associated with the GDPR.[158] This research suggests that one of the unintended consequences of the GDPR is that it may protect, or perhaps even further entrench, the relative power of the largest tech companies that are better placed to comply with demanding regulations such as the GDPR.[159]

Any costs imposed by a regulation such as the GDPR are easier to justify if the regulation generated benefits that outweighed those costs. On this score, some may question the net benefit of the GDPR given the well-known deficiencies in its implementation. With limited resources, European privacy regulators have been criticized for having brought a small number of cases under the GDPR, which to date have often resulted in modest fines.[160] This suggests that, at worst, the GDPR has imposed compliance costs without generating the promised social innovation benefits by protecting privacy rights. This exposes the EU regulation to criticism that the intended benefits may not offset the compliance costs.[161] However, there are signs that the EU is now moving toward more robust enforcement of the GDPR, as evidenced by a high-profile £1.2 billion fine that the Irish Data Protection Agency imposed on Meta in May 2023.[162]

Data privacy rules have the potential to alter innovation pathways. After the GDPR entered into force, tech companies faced limits on collecting, combining, storing, and processing user data.[163] This presents a hurdle for tech companies, including AI firms, which need access to extensive data to

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[156] *Id.* at 13.

[157] *Id*. at 3–4.

[158] Jian Jia, Ginger Zhe Jin & Liad Wagman, *The Short-Run Effects of the General Data Protection Regulation on Technology Venture Investment*, 40 MKTG. SCI. 661, 675 (2021).

[159] *See* BRADFORD, *supra* note 6, at 238; Garrett A. Johnson, Scott K. Shriver & Samuel G. Goldberg, *Privacy and Market Concentration Intended and Unintended Consequences of the GDPR*, 69 MGMT. SCI. 5695, 5715 (2023).

[160] *See, e.g.*, Madhumita Murgia & Javier Espinoza, *Ireland Fails to Enforce EU Law Against Big Tech*, FIN. TIMES (Sept. 12, 2021), https://www.ft.com/content/5b986586-0f85-47d5-8edb-3b49398e2b08 [https://perma.cc/6Z9J-JFKQ] (discussing criticism of enforcement in Ireland).

[161] *See* McAfee, *supra* note 80 (criticizing the GDPR as restricting innovation and reducing VC funding in Europe, while adding that "the benefits to the EU of all the extra governance are not obvious" given the suboptimal enforcement efforts).

[162] Meta Platforms Ireland Limited 2023 (IN-20-8-1) (Ir. Data Pro. Comm'n May 12, 2023), https://www.edpb.europa.eu/system/files/2023-05/final_for_issue_ov_transfers_decision_12-05-23.pdf [https://perma.cc/8GER-DBY4].

[163] Bessen et al., *supra* note 152, at 3.

create more accurate AI applications.[164] In such instances, there is a potential trade-off between more data protection and less product innovation.[165] Another example relates to the way tech companies gather data for targeted advertising. In its 2022 decision, the European Data Protection Board (EDPB) held that Meta can no longer use data generated on its own platform to create personalized ads unless it obtains specific user consent for such targeted advertising[166]—consent that may be difficult to obtain from users.[167] This ruling may fundamentally change Meta's business model, forcing the company to retool its entire digital advertising business.[168] Thus, for anyone who considers targeted advertising to be valuable—for instance by allowing users to forgo a subscription fee and receive, in return, more relevant advertising based on users' personal data—the privacy ruling can be viewed as costly or detrimental to innovation.

However, even if the GDPR entailed various compliance costs, it may still encourage social innovations. Protection of data privacy can be seen as creating a social benefit by enhancing the fundamental rights of individuals whose data would otherwise be vulnerable to exploitation by tech companies. The social benefits associated with the GDPR are therefore enhanced privacy, self-determination, and personal autonomy that individuals can enjoy.[169]

These social benefits may reduce market benefits for tech companies whose business model relies on monetizing users' personal data through advertising. However, there is also an argument that the GDPR confers both social and market benefits, especially in the long term. For a company like Apple, privacy-enhancing innovations have generated significant economic benefits. Apple's privacy practices can be viewed as not only a response to

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[164] *Id.* at 18.

[165] *Id.*

[166] Eur. Data Prot. Bd. Binding Decision 3/2022, (Dec. 5, 2022), https://edpb.europa.eu/our-work-tools/our-documents/binding-decision-board-art-65/binding-decision-32022-dispute-submitted_en [https://perma.cc/VGP4-MAHB].

[167] For a comparison, when Apple introduced its tracking tool and asked users specifically if they wanted to be tracked, a large majority chose not to be tracked. *See* Samuel Axon, *96% of US Users Opt Out of App Tracking in iOS 14.5, Analytics Find*, ARS TECHNICA (May 7, 2021), https://arstechnica.com/gadgets/2021/05/96-of-us-users-opt-out-of-app-tracking-in-ios-14-5-analytics-find/ [https://perma.cc/23U7-DAFJ]; Jared Newman, *Most People Are Embracing iOS 14.5's New Anti-Tracking Features*, FAST CO. (May 7, 2021, 1:59 PM), https://www.fastcompany.com/90633965/ios-14-5-tracking-opt-out-rate [https://perma.cc/77AS-U98N].

[168] Natasha Lomas, *Meta's Behavioral Ads Will Finally Face GDPR Privacy Reckoning in January*, TECHCRUNCH (Dec. 6, 2022, 8:58 AM), https://techcrunch.com/2022/12/06/meta-gdpr-forced-consent-edpb-decisions/ [https://perma.cc/GZ47-CBHF].

[169] *See* James Q. Whitman, *The Two Western Cultures of Privacy Dignity Versus Liberty*, 113 YALE L.J. 1151, 1164 (2004) (discussing how social values of dignity and honor are reflected in European views of privacy); Charles Fried, *Privacy*, 77 YALE L.J. 475, 477 (1968).

EU regulation but also the company's conscious business strategy.[170] In April 2021, Apple rolled out an update on its iPhone that asks users whether they want apps, such as Facebook, to track them.[171] This change is seen as a tremendous boon for user privacy but a devastating blow to companies such as Meta, which rely on retaining access to user data in Apple devices.[172] Meta's stock price plunged 26% in February 2022 following Meta's disclosure that Apple's privacy change will cost the company billions of dollars annually.[173] At the same time, Apple itself has seen its advertising revenue soar as the company can still access the data generated on its own devices.[174] This shows how Apple has been able to monetize its pro-privacy innovations, enhancing users' privacy—thus generating social innovations—while at the same time reaping significant economic rewards by innovating product enhancements that were welcomed by users and that also tilted the marketplace in Apple's favor.

In the same vein, if Meta now responds to the adverse EDPB ruling by creating a new advertising model that is more responsive to users' privacy expectations, social innovation may occur. Initially, such innovation would likely reduce Meta's advertising revenue and be costly to the company. However, the Porter hypothesis suggests that the exacting regulatory demands may incentivize Meta to engage in more drastic innovation around digital advertising. This may lead Meta to develop a new business model that will, in the long run, generate commercial benefits for the company. Alternatively, the constraints imposed on Meta may invite entry from other tech companies whose business models are more responsive to users' privacy expectations, increasing these companies' incentives to innovate in ways that disrupt the existing digital advertising market.

The EU has consistently maintained that the GDPR and other European tech regulations increase social innovation. There are pressing social needs

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[170] Kif Leswing, *Apple Is Turning Privacy into a Business Advantage, Not Just a Marketing Slogan*, CNBC (June 8, 2021, 6:52 PM), https://www.cnbc.com/2021/06/07/apple-is-turning-privacy-into-a-business-advantage.html [https://perma.cc/QXH8-K96D].

[171] *See* Press Release, Apple, Data Privacy Day at Apple: Improving Transparency and Empowering Users (Jan. 27, 2021), http://www.apple.com/newsroom/2021/01/data-privacy-day-at-apple-improving-transparency-and-empowering-users/ [https://perma.cc/QQ8M-5RDB].

[172] *See* Patrick McGee, *Snap, Facebook, Twitter and YouTube Lose Nearly $10bn After iPhone Privacy Changes*, FIN. TIMES (Oct. 31, 2021), https://www.ft.com/content/4c19e387-ee1a-41d8-8dd2-bc6c302ee58e [https://perma.cc/T5GT-9AW2].

[173] *See* Kate Conger & Brian X. Chen, *A Change by Apple Is Tormenting Internet Companies, Especially Meta*, N.Y. TIMES (Feb. 3, 2022), https://www.nytimes.com/2022/02/03/technology/apple-privacy-changes-meta.html [https://perma.cc/P9CG-MZWD].

[174] Nina Goetzen, *Apple Ad Revenues Skyrocket amid Its Privacy Changes*, EMARKETER (Jan. 31, 2022), https://www.insiderintelligence.com/content/apple-ad-revenues-skyrocket-amid-its-privacy-changes [https://perma.cc/D2JL-2JHK].

that call for regulations even if such regulations were to impose compliance costs or deter certain types of innovation.[175] However, according to the EU, its regulations also often contribute to market innovations and further technological progress.[176] The GDPR has elevated the consciousness of consumers, tech companies, and governments about data privacy, contributing to a shift in marketplace expectations.[177] As internet users become more conscious of privacy, they start viewing privacy as an element of product quality and increasingly turn to privacy-conscious products.[178] This way, firms developing privacy-enhancing technologies can reap economic gains as the market will reward them for innovations that reflect changing consumer preferences. Tech companies are already adjusting their business practices to EU rules, indicating that technological development is now moving in a more privacy-conscious direction. Most tech companies' privacy policies today are aligned with the GDPR, and companies such as Apple, Alphabet, Meta, and Microsoft offer GDPR protections to their global users.[179] This reveals that the EU's data privacy regulation is already changing the direction of tech companies' innovation activities.

According to the European Commission, firms adhering to higher privacy standards can gain a competitive advantage because consumers and

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[175] *Stronger Protection, New Opportunities - Commission Guidance on the Direct Application of the General Data Protection Regulation as of 25 May 2018*, at 1, COM (2018) 43 final (Jan. 24, 2018) [hereinafter COM (2018) 43 final]; *see also* Venky Anant, Lisa Donchak, James Kaplan & Henning Soller, *The Consumer-Data Opportunity and the Privacy Imperative*, MCKINSEY & CO. (Apr. 27, 2020), https://www.mckinsey.com/capabilities/risk-and-resilience/our-insights/the-consumer-data-opportunity-and-the-privacy-imperative [https://perma.cc/YQT5-AZEK] ("In total, Fortune Global 500 companies had spent $7.8 billion by 2018 preparing for GDPR.").

[176] COM (2018) 43 final, *supra* note 175, at 16.

[177] *See* Jeanette Herrle & Jesse Hirsh, *The Peril and Potential of the GDPR*, CIGI (July 9, 2019), https://www.cigionline.org/articles/peril-and-potential-gdpr [https://perma.cc/84RD-9AFB] ("A global conversation on data protection and privacy is expanding, and the impact on non-EU countries is in evident . . . : California's upcoming Consumer Privacy Act, India's soon-to-be-tabled Personal Data Protection Act and South Korea's updating of its Personal Information Protection Act are among the standouts globally."); EUR. COMM'N, TWO YEARS OF THE GDPR: QUESTIONS AND ANSWERS (June 24, 2020), https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_1166 [https://perma.cc/ZPK6-CDLZ] (reporting an increase in citizens' awareness of their data privacy rights). *But see* Herrle & Hirsh, *supra* ("[C]itizens' attitudes about and expectations of data governance are not keeping pace. Certainly, Europeans' awareness of data protection and data privacy has increased[,] . . . [as] 73 percent of Europeans have heard about at least one of their new rights. Unfortunately, only three in 10 Europeans are aware of all of their rights.").

[178] *See* Anant et al., *supra* note 175.

[179] *See, e.g.*, *Preparing for a New Era in Privacy Regulation with the Microsoft Cloud*, MICROSOFT BLOG (Apr. 16, 2018), https://www.microsoft.com/en-us/microsoft-365/blog/2018/04/16/preparing-for-a-new-era-in-privacy-regulation-with-the-microsoft-cloud/ [https://perma.cc/F49K-YYPW]; *Requests to Delist Content Under European Privacy Law*, GOOGLE TRANSPARENCY REPORT (May 29, 2014), https://transparencyreport.google.com/eu-privacy/overview [https://perma.cc/8DNE-ZBHN]. These numbers are accurate as of Aug. 15, 2022. Google updates the figures periodically.

users are likely to place more trust in their products and services.[180] Some tech companies, including Microsoft, have also endorsed this view.[181] According to Microsoft, in the absence of strong privacy rules, "it will likely become harder for U.S. companies to keep the trust of consumers worldwide."[182] This will place U.S. providers at a competitive disadvantage as foreign customers are increasingly likely to turn to non-U.S. companies who they trust to keep their data safe. As a result, Microsoft asserted that "strong data protection practices are not the antithesis of innovative data usage" and that "privacy and big data can and must go hand-in-hand."[183] Consistent with this view, Microsoft was an early supporter of the EU's GDPR and has called for Congress to enact "[s]trong, comprehensive privacy legislation" in the United States.[184] Of course, it is less costly for Microsoft to take a strong pro-privacy stand as its business model does not rely on targeted advertising. It will therefore be interesting to see if Microsoft's views on data privacy shift after its significant investment in OpenAI, which relies on extensive data gathering to train large language models, which risks conflicting with data privacy rules.[185] As a result, Microsoft now finds itself more exposed to regulatory constraints, testing its stance as a staunch advocate of data privacy rules.

The above discussion suggests that data privacy regulation generates both costs and benefits to tech companies by limiting certain types of innovation while encouraging other forms of innovation. While a regulation such as the GDPR can legitimately be criticized—including for its adverse distributional effect on small companies or its ineffective implementation—data privacy regulation does not have a one-directional effect on innovation that presents governments with a clear choice between regulation and innovation. Instead, data privacy regulation has spurred new innovations

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[180] Viviane Reding, *The European Data Protection Framework for the Twenty-First Century*, 2 INT'L DATA PRIV. L. 119, 129 (2012); W. Gregory Voss & Kimberly A. Houser, *Personal Data and the GDPR Providing a Competitive Advantage for U.S. Companies*, 56 AM. BUS. L.J. 287, 338 (2019).

[181] Julie Brill, *Microsoft's Commitment to GDPR, Privacy, and Putting Customers in Control of Their Own Data*, POLITICO (May 25, 2018, 9:00 AM), http://www.politico.eu/sponsored-content/microsofts-commitment-to-gdpr-privacy-and-putting-customers-in-control-of-their-own-data/ [https://perma.cc/3X8E-Y4UM].

[182] Letter from David A. Heiner, Vice President & Deputy Gen. Couns., Legal & Corp. Affs., Microsoft Corp., to John Morris, Nat'l Telecomms. & Info. Admin., U.S. Dep't of Com. (Aug. 5, 2014), https://www.ntia.doc.gov/files/ntia/microsoft.pdf [https://perma.cc/US74-JAQQ].

[183] *Id.*

[184] *Id*.

[185] Charles Duhigg, *The Inside Story of Microsoft's Partnership with OpenAI*, NEW YORKER (Dec. 1, 2023), https://www.newyorker.com/magazine/2023/12/11/the-inside-story-of-microsofts-partnership-with-openai [https://perma.cc/33E7-7E7Z].

in product development, many of which enhance social innovations and, arguably, also market innovations.

C. How Antitrust Regulation Affects Innovation

Antitrust law, correctly implemented, should contribute to greater innovation by reducing market concentration and fostering competition. However, some scholars have argued that a more concentrated market structure can sometimes have a positive effect on innovation. Prominent economists have debated this question, disagreeing on how much market power is optimal for creating or preserving firms' incentives for innovation. Joseph Schumpeter famously argued that the prospect of market power and the ensuing monopoly rents spur innovation.[186] Kenneth Arrow challenged this view, arguing instead that monopolists have less to gain from innovating and an interest in preserving the status quo.[187] According to Arrow, more competition increases firms' incentives to innovate.[188] Jean Tirole has similarly suggested that the monopolist is likely to hold back innovation because of the "replacement effect"—the idea that innovation would only replace a monopolist's existing rents.[189] Several commentators describe this long-standing debate as unresolved, but if there is a prevailing view today, it seems to be that neither an oligopolistic market structure nor highly competitive markets provide the most fertile environment for innovation, but that, on balance, competitive market structures foster innovation more than monopolistic markets.[190]

While the debate on the relationship between *competition* and innovation is long-standing, there is currently limited empirical literature on the relationship between the *regulation* of competition and innovation. Some scholars have suggested that antitrust laws contribute to innovation, whereas others have argued that they deter innovation.[191] There are several reasons to

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[186] Jonathan B. Baker, *Beyond Schumpeter vs. Arrow How Antitrust Fosters Innovation*, 74 ANTITRUST L.J. 575, 578 (2007). *See generally* JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY (1942).

[187] *See generally* KENNETH J. ARROW, ECONOMIC WELFARE AND THE ALLOCATION OF RESOURCES FOR INVENTION (1962). However, even Arrow acknowledged the benefit that large firms have in acting as their own insurance company, allowing them to pursue multiple projects at the same time—the benefit he still called "an imperfect solution." *Id.* at 616.

[188] *Id.* at 622.

[189] JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 392 (1997).

[190] MASSIMO MOTTA, COMPETITION POLICY: THEORY AND PRACTICE 57 (2004).

[191] *See, e.g.*, Dora Marinova, Michael McAleer & Daniel Slottje, *Antitrust Environment and Innovation*, 64 SCIENTOMETRICS 301, 309 (2005) ("[C]ivil antitrust filings by the DOJ have a statistically significant impact on the level of innovative activity."); Andrew Thomas Young & William F. Shughart II, *The Consequences of the US DOJ's Antitrust Activities A Macroeconomic Perspective*, 142 PUB.

expect that antitrust laws and their enforcement positively affect tech companies' incentives to innovate.[192] Antitrust laws encourage entry and rivalry, which creates incentives for firms to reduce costs, improve product quality, or develop new products to increase their profits and stay ahead of their rivals. Empirical evidence also suggests that companies that are shielded from international competition fall behind and lose their ability to compete due to a lack of rivalry that would have driven them to innovate.[193] Jonathan Baker has taken a firm stand in arguing that antitrust enforcement today promotes innovation, urging scholars to "move beyond the 'Schumpeter vs. Arrow' debate and to embrace antitrust as essential for fostering innovation."[194]

Economist and technologist James Bessen has argued that today's concentrated digital markets are not optimal for innovation. He notes how the information revolution initially contributed to greater dynamism and innovation across industries.[195] By the late 1990s, several industries experienced rapid cycles of disruption where new players were challenging the incumbents, allowing startups and smaller firms to thrive.[196] However, the rate of disruption has declined over the past two decades as a handful of "superstar" firms have entrenched their control over the key technologies.[197] This has impeded the growth prospects of smaller firms and slowed productivity growth.[198] Thus, while small firms are still created, they face impediments to growth, which has reduced overall productivity growth for the economy. This has an adverse effect on innovation because, according to Bessen, the level of innovation is greatest when knowledge diffuses, and a diverse set of individuals and companies engage in the marketplace.[199]

Others have advanced a different view. For example, Nicolas Petit and David J. Teece have called into question the relevance of market size and

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CHOICE 409, 419–20 (2010) ("Innovations in antitrust law enforcement apparently do not constrain market power in the economy, but do hamper productivity growth, at least temporarily.").

[192] Baker, *supra* note 186, at 593–95; Carl Shapiro, *Competition and Innovation Did Arrow Hit the Bull's Eye?*, *in* THE RATE & DIRECTION OF INVENTIVE ACTIVITY REVISITED (Josh Lerner & Scott Stern eds., 2012); George L. Priest, *Advancing Antitrust Law to Promote Innovation and Economic Growth*, *in* RULES FOR GROWTH: PROMOTING INNOVATION AND GROWTH THROUGH LEGAL REFORM 209 (Lacey Graverson, Sarah Gowen & Matt Rees eds., 2011).

[193] Michael E. Porter, *Competition and Antitrust Toward a Productivity-Based Approach to Evaluating Mergers and Joint Ventures*, 46 ANTITRUST BULL. 919, 932 (2001).

[194] Baker, *supra* note 186, at 602.

[195] JAMES BESSEN, THE NEW GOLIATHS 8 (2022).

[196] *Id.* at 9.

[197] *Id.* at 16.

[198] *Id.* at 17.

[199] *Id.* at 190.

market concentration for assessing competition and innovation.[200] According to them, this traditional debate focuses on static as opposed to dynamic models of monopoly and is ill-suited to analyze the dynamic competition that characterizes the tech industry.[201] The authors characterize today's digital economy as dynamic and featuring "unprecedented productivity growth, rapid innovation, and new firm entry."[202] They describe digital firms as diversified companies that compete across different markets, challenging each other's dominance.[203] This makes existing monopolists vulnerable to competition, which should alleviate concerns from antitrust regulators.[204] This description of a "vigorous[]" oligopolistic competition among the leading tech firms departs from the common narrative that focuses on tech companies' uncontested monopoly power.[205] This understanding of the market dynamics leads Petit and Teece to caution against strict antitrust rules designed to ban practices such as monopoly leveraging, which, according to them, would likely lead to reduced innovation.[206]

While disagreements over the optimal antitrust policy persist, a growing number of voices are calling for aggressive antitrust action, including breaking up monopolies such as Meta.[207] While some argue that Meta should not be punished for its success and innovations, others assert that breaking up Meta would incentivize rivals to enter into the market and innovate.[208] Excessive market concentration has also increased support to restrict mergers and acquisitions in the tech industry.[209] Currently, many

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[200] Nicolas Petit & David J. Teece, *Innovating Big Tech Firms and Competition Policy Favoring Dynamic over Static Competition*, 30 INDUS. & CORP. CHANGE 1168, 1173 (2021).

[201] *Id.* at 1170.

[202] *Id.* at 1169.

[203] *Id.*

[204] *Id.* at 1175.

[205] Petit & Teece, *supra* note 200, at 1169.

[206] *See id.* at 1170.

[207] Chris Hughes, *It's Time to Break Up Facebook*, N.Y. TIMES (May 9, 2019), https://www.nyt.com/2019/05/09/opinion/sunday/chris-hughes-facebook-zuckerberg.html [https://perma.cc/Z2C8-8ZBM]; Jack Kelly, *Senator Elizabeth Warren Says It's Time to Break Up Amazon, Google and Facebook'—And Facebook CEO Mark Zuckerberg Fights Back*, FORBES (Oct. 2, 2019, 10:43 AM), https://www.forbes.com/sites/jackkelly/2019/10/02/senator-elizabeth-warren-says-its-time-to-break-up-amazon-google-and-facebook-and-facebook-ceo-mark-zuckerberg-fights-back/?sh=f1c26cd67916 [https://perma.cc/7CX6-3C9C].

[208] Nilay Patel, *It's Time to Break Up Facebook*, VERGE (Sept. 4, 2018, 1:00 PM), https://www.theverge.com/2018/9/4/17816572/tim-wu-facebook-regulation-interview-curse-of-bigness-antitrust [https://perma.cc/MT66-EZK7].

[209] *See generally* Org. for Econ. Coop. & Dev. [OECD], *Start-Ups, Killer Acquisitions and Merger Control*, at 3, OECD Doc. DAF/COMP/WD(2020)23 (June 11, 2020), https://www.ftc.gov/system/files/attachments/us-submissions-oecd-2010-present-other-international-competition-fora/oecd-killer_acquisiitions_us_submission.pdf [https://perma.cc/5BKS-MDK8] (discussing U.S. methods for restricting tech mergers and acquisitions).

small tech companies are never able to challenge the incumbents, such as Meta, because these incumbents often acquire their rivals to fend off an emerging competitive threat—a phenomenon referred to as "killer acquisitions." These concerns motivate the U.S. FTC's ongoing suit against Meta.[210] The FTC is seeking to unwind the company's past acquisitions of Instagram and WhatsApp, which the FTC sees as having been motivated by Facebook's attempt to kill a nascent competitive threat to its business, thus diminishing rivalry-driven innovation in the market for social media. However, others caution that aggressive merger control may reduce innovation, particularly if startups fear that their chances of a successful exit through a future acquisition are diminished.[211]

The scholarly conversation on how antitrust regulation affects digital markets is intensifying in the wake of the EU's adoption of the DMA. While it will be years until the DMA's effect on competition and innovation can be empirically measured, its merits are already debated—including its predicted effect on innovation. The assumption behind the DMA is that digital markets today are too concentrated and hence anticompetitive.[212] The goal of the DMA is to enhance the contestability of the marketplace so that new firms can enter and compete in the marketplace.[213] This, according to the European Commission, will augment rivals' and new entrants' incentives to innovate and challenge the incumbents.[214] At the same time, new rivals' entry into the marketplace will likely incentivize existing tech giants to innovate as their position will now be challenged.[215] Arguably, while the DMA will introduce some trade-offs, including whether to prioritize innovation by incumbents or challengers, it has the potential to enhance the "diversity" of innovation that takes place.[216]

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[210] Press Release, Fed. Trade Comm'n, FTC Sues Facebook for Illegal Monopolization (Dec. 9, 2020), https://www.ftc.gov/news-events/press-releases/2020/12/ftc-sues-facebook-illegal-monopolization [https://perma.cc/74EJ-UB7J].

[211] Tom Relihan, *Will Regulating Big Tech Stifle Innovation?*, MIT MGMT. SLOAN SCH. (Sept. 27, 2018), https://mitsloan.mit.edu/ideas-made-to-matter/will-regulating-big-tech-stifle-innovation [https://perma.cc/LM3R-WMXC]; Andrew Edgecliffe-Johnson & Kiran Stacey, *Top US Business Lobbyist Lambasts Joe Biden's Antitrust Over-Reach*,*'* FIN. TIMES (Jan. 11, 2022), https://www.ft.com/content/6fd7d5c3-00b2-43fc-9308-7d96614c53bb [https://perma cc/5ULD-JRFG].

[212] *Impact Assessment Report Accompanying the Document Proposal for a Regulation of the European Parliament and of the Council on Contestable and Fair Markets in the Digital Sector (Digital Markets Act)*, paras. 7, 10, SWD (2020) 363 final (Dec. 15, 2020), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020SC0364 [https://perma.cc/43KG-JZAK].

[213] *Id.* para. 10.

[214] *Id.* para. 279.

[215] Pierre Larouche & Alexandre de Streel, *The European Digital Markets Act A Revolution Grounded on Traditions*, 12 J. EUR. COMPETITION L. & PRAC. 542, 551 (2021).

[216] *Id.* at 552.

The EU's critics have questioned whether the DMA will lead to greater innovation. An Amazon-commissioned study by Oxera Consulting argues that the DMA will reduce aggregate innovation.[217] The study argues that any increase in rivals' incentives to innovate would not offset the decrease in large platforms' incentives to innovate under the new regulation.[218] Many innovations depend on the market size, allowing large firms with a global scale to better recoup the fixed costs of their R&D expenditures.[219] New entrants also know that their potential ability to gain success in the marketplace will lead to greater regulation, which dampens their incentives to innovate and pursue such success.[220] As a result, the aggregate level of innovation will likely deteriorate following the DMA's entry into force. The authors of the study acknowledge that potential entrants often pursue disruptive innovations whereas incumbents have the incentive to pursue more incremental innovations. However, they conclude that both variants of innovations are beneficial and question the EU's choice of prioritizing only potentially disruptive innovations by rivals.[221]

This discussion suggests that antitrust law, too, may have a more nuanced relationship to innovation than often presumed. There are well-reasoned arguments that show how overly constraining antitrust laws may adversely affect innovation or that the existing tech giants challenge each other and thus sustain the culture of innovation. At the same time, there are strong arguments that more competition leads to greater innovation and that the excessive concentration that characterizes today's tech industry has limited innovation. In particular, that reduction in innovation manifests in how difficult—if not impossible—it is to challenge the incumbents and provide consumers with a diversity of innovations from multiple sources. It is therefore difficult to see how the EU's antitrust laws and enforcement actions—or regulations such as the DMA—would categorically suppress innovation and explain why the EU has not developed a thriving tech industry.

D. How AI Regulation Affects Innovation

Given the nascent stage of AI regulation, it is too early to draw any definitive conclusions about the actual impact of those regulations on innovation. Much of the discussion on the relationship between AI regulation and technological development is still speculative and focused on predicting

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[217] OXERA, *supra* note 83.

[218] *Id.* at 27.

[219] *Id.* at 4.

[220] *Id.* at 2.

[221] *Id.* at 2–3.

various outcomes based on still-evolving regulatory proposals. Despite this uncertainty, the relationship between AI regulation and innovation is already subject to debate. Some commentators suggest that AI regulation will harm technological progress, while others argue that the effect is likely to be positive.

Critical voices assert that government efforts to regulate AI with binding rules will likely adversely affect the development of AI applications. This prediction relies on a familiar assumption that any tech regulation, by its very nature, entails compliance costs, which can adversely affect innovation.[222] However, others suggest that these costs can be mitigated if regulators help, in particular, small companies with their compliance efforts. For example, the EU's AI Act envisions the establishment of so-called "regulatory sandboxes," which are specifically created, controlled environments within which businesses can test their innovations under regulators' supervision.[223] This practice is designed to alleviate regulatory risks before a new technology is introduced to the market, thus encouraging innovation.[224]

Even if compliance costs could be mitigated in some instances, AI regulation may still adversely affect technological development in other ways. One common criticism emphasizes regulators' inadequate understanding of particularly complex and fast-evolving AI systems.[225] This information asymmetry between regulators and market actors might slow down innovation as a result of poorly-conceived or hard-to-follow regulations, and is often cited as an argument favoring industry-led standards. Another concern is that the EU's stringent regulatory requirements may oblige tech companies to retrain their AI systems—initially developed for the global market—for the European market if those AI systems are viewed as inconsistent with EU regulations.[226] This may lower the quality of the AI applications made available in Europe, especially if those applications are trained on smaller datasets after all noncompliant

[222] ALESSIO TARTARO, ADAM LEON SMITH & PATRICIA SHAW, ASSESSING THE IMPACT OF REGULATIONS AND STANDARDS ON INNOVATION IN THE FIELD OF AI 3 (2023), https://arxiv.org/pdf/2302.04110 [https://perma.cc/U3G6-W3SN]; *see also* Chris Reed, *How Should We Regulate Artificial Intelligence?*, PHIL. TRANSACTIONS ROYAL SOC'Y A, Aug. 6, 2018, at 5 (discussing the risks regulations pose to innovation).

[223] TAMBIAMA MADIEGA & ANNE LOUISE VAN DE POL, EUR. PARLIAMENTARY RSCH. SERV., PE 733.544, INTELLIGENCE ACT AND REGULATORY SANDBOXES 2 (2022).

[224] *Id.* at 2–3.

[225] Tartaro et al., *supra* note 222, at 6.

[226] ANDREA RENDA ET AL., CEPS, ICF & WAVESTONE, STUDY TO SUPPORT AN IMPACT ASSESSMENT OF REGULATORY REQUIREMENTS FOR ARTIFICIAL INTELLIGENCE IN EUROPE 120 (2021).

data is removed.[227] However, it is not clear how AI developers will respond to the EU's AI Act. Some, but likely not all, developers may choose to tailor their global products to the EU standard to ensure that the same AI system can be sold across the global market, eliminating the concern regarding systems tailored specifically for the EU.[228]

While these arguments are plausible, there are also several reasons why increased regulation may, in fact, be helpful in accelerating the development and usefulness of AI applications. One such argument emphasizes the ability of AI regulation to contribute to greater social innovation, by directing AI development toward more ethical, accurate, and safe AI systems. Such systems would be welfare-enhancing in that they would mitigate concerns such as large-scale discrimination that occurs when AI is trained on biased datasets.[229] While regulation may initially hinder the development and adoption of AI, such regulation is ultimately welfare-enhancing in that it encourages firms to invest in more ethical and less error-prone AI applications, steering the industry toward more robust AI systems.[230] This can create a positive market response if more consumers adopt AI as a consequence of trusting novel technologies that meet regulatory standards.[231] This argument is consistent with the Porter hypothesis and illustrates how AI regulation may redirect technological innovation in ways that can contribute to both social and market innovation.

The EU itself has defended its proposed AI Act as enhancing, rather than undermining, AI development. According to the Commission, its AI Act can enhance innovation in two primary ways: First, common European rules reduce complexity and enhance legal certainty, which decreases regulatory risk and paves the way for greater investment in AI innovations.[232] In its impact assessment, the Commission notes that the alternative to the EU's AI Act is not the wholesale absence of regulation but rather fragmented AI regulation promulgated by individual EU member states.[233]

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[227] *Id.*

[228] *See* BRADFORD, *supra* note 5, at 338–39.

[229] Mariano-Florentino Cuéllar, Benjamin Cedric Larsen, Yong Suk Lee & Michael Webb, *How Does Information About AI Regulation Affect Managers' Choices?*, BROOKINGS (July 28, 2022), https://www.brookings.edu/articles/how-does-information-about-ai-regulation-affect-managers-choices/ [https://perma.cc/2KMG-GVSP].

[230] *See* Kathryn Mueller, *We Can't Regulate AI*, AI MYTHS (2020), https://www.aimyths.org/we-cant-regulate-ai [https://perma.cc/L4KJ-BZFC] (discussing the need for "regulation to ensure that the innovation that causes harms is nipped in the bud to allow truly useful innovations to flourish").

[231] Cuéllar et al., *supra* note 229.

[232] *Impact Assessment Accompanying the Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, at 33, SWD (2021) 84 final (Apr. 21, 2021).

[233] *Id.* at 26.

Such a balkanized regulatory landscape would compound greater uncertainty, complexity, and compliance costs—a particular concern for AI applications, which require large pools of data to be effective.[234] At worst, different national rules would require tailored AI systems to be developed for various member states within the EU.[235]

Second, the Commission has described how the proposed AI Act is designed to steer AI innovation toward ethical and safe applications, which are valued by consumers.[236] The Act limits certain invasive AI technologies, such as mass surveillance or manipulative algorithms designed to exploit individuals' vulnerabilities. These regulations advance a set of social goals that European lawmakers have identified as beneficial for individuals and societies. In the short run, however, these regulations may well force tech companies to forgo some commercial opportunities and hence forgo revenue—even while contributing toward social innovation.

Yet, it is possible that market benefits may ensue as well. For example, the EU has argued that its AI regulation will give a commercial advantage to tech companies whose AI applications adhere to high regulatory standards.[237] According to this view, compliance with stringent EU regulation can help firms obtain reputational gains and win over consumers, contributing to market innovations alongside social innovations. While there is genuine excitement about the possibilities around generative AI today, there is also a growing awareness of the severe risks AI presents. OpenAI's Sam Altman and other prominent AI technologists have even compared AI to nuclear war and warned about AI's potential to pose existential risks to humanity.[238] According to the Commission, these risks and the existing "[m]istrust in AI would slow down AI development . . . [i]f citizens observe that AI repeatedly endangers the safety of individuals or infringes their fundamental rights, they are unlikely to be willing to accept the use of AI technologies for themselves or by other users."[239] Some scholars have endorsed this view, noting how

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[234] *See id.* at 27.

[235] *Id*. at 26 (discussing the fragmentation concern and citing the German Data Ethics Commission proposal for a tiered system of regulation on AI based on five risk categories).

[236] *Id.* at 18.

[237] *See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Fostering a European Approach to Artificial Intelligence*, at 2–3, COM (2021) 205 final (Apr. 21, 2021).

[238] Cade Metz, *How Could A.I. Destroy Humanity?*, N.Y. TIMES (June 10, 2023), https://www.nytimes.com/2023/06/10/technology/ai-humanity.html [https://perma.cc/V36N-2VMK]; Tristan Bove, *Sam Altman and Other Technologists Warn that A.I. Poses a 'Risk of Extinction' on Par with Pandemics and Nuclear Warfare*, FORTUNE (May 30, 2023, 9:32 AM), https://fortune.com/2023/05/30/sam-altman-ai-risk-of-extinction-pandemics-nuclear-warfare/ [https://perma.cc/HKV9-APDK].

[239] Eur. Comm'n, *supra* note 232, at 24.

AI regulation enhances consumer confidence "through clear rules, legal certainty, higher trust, and greater social acceptance."[240]

Several tech companies have acknowledged that AI regulation can serve their business interests, lending support to the notion that social innovation can also translate into market innovation. In particular, they recognize that tech regulation can enhance consumer confidence in new products, thus generating useful market innovations.[241] Among these industry voices, the chief technology officer of OpenAI recently called for the regulation of AI, warning that "AI can be misused."[242] According to her, tech companies should not be left alone to ensure that the technology will be aligned with human values. The rapid advances in AI-driven large language models have unsettled many tech entrepreneurs and AI engineers, who recently called for a temporary moratorium on training such models, lending force to the argument that regulatory oversight is both necessary and desirable.[243]

III. ALTERNATIVE DRIVERS FOR INNOVATION AND TECHNOLOGICAL PROGRESS

The above Part suggests that the relationship between tech regulation and innovation is likely more intricate than what the public conversation and some scholars have suggested to date. As a result, any claims suggesting a causality between a country's digital regulation and the strength of its tech sector requires additional analysis. The below discussion addresses this issue by asking whether the claims of Europe's overregulation reflect, at least partially, a misattribution of the European tech sector's failings to Europe's digital regulation and whether the reasons for the EU's inability to match the United States' tech prowess may, in the end, be found elsewhere. If so, the perceived causal relationship between tech regulation and innovation may be illusory and explained by other variables that have little to do with tech regulation.

There are a few obvious reasons to question the claim that tech regulation is the primary culprit explaining the absence of large European tech companies. Looking back, Europe's digital economy was not heavily

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[240] Tartaro et al., *supra* note 222, at 5.

[241] *See* Brad Smith, *Facial Recognition Technology The Need for Public Regulation and Corporate Responsibility*, MICROSOFT BLOG (July 13, 2018), http://blogs.microsoft.com/on-the-issues/2018/07/13/facial-recognition-technology-the-need-for-public-regulation-and-corporate-responsibility/ [http://perma.cc/67NP-GNJ9].

[242] John Simons, *The Creator of ChatGPT Thinks AI Should Be Regulated*, TIME (Feb. 5, 2023, 9:00 AM), https://time.com/6252404/mira-murati-chatgpt-openai-interview/ [https://perma.cc/HA4R-EZRL].

[243] Chris Vallance, *Elon Musk Among Experts Urging a Halt to AI Training*, BBC (Mar. 30, 2023), https://www.bbc.com/news/technology-65110030 [https://perma.cc/W7MF-QAC2].

regulated before 2010, when the Commission opened its first antitrust investigation into Google.[244] The EU's 2000 e-Commerce Directive—the predecessor to the 2022 DSA—closely resembles § 230 of the CDA, shielding platforms from any general monitoring obligation.[245] The only other notable EU tech regulation in force before 2010 was the 1995 Data Protection Directive, which was less protective of fundamental rights than the EU's 2016 GDPR.[246] During the years when companies such as Google and Facebook were founded—1998 and 2004 respectively—comparable companies did not emerge in Europe notwithstanding the EU's more permissive regulatory framework.[247]

The EU's digital regulations are also hardly as draconian as some of their critics seem to suggest, which calls into question their ability to dampen innovation in a meaningful way. All EU regulations emanate from a contested legislative process that calls for a compromise across twenty-seven individual member states with differing individual interests. This process serves to moderate any extreme versions of proposed regulations.[248] What further balances EU tech regulations is that they always serve two goals, with European integration being one of them. For example, the GDPR is geared at both protecting the fundamental right to data privacy and also at facilitating the transfer of personal data across the EU.[249] The EU's digital regulations are not only enacted to protect some stated social objective but also aimed at fostering trade among EU member states, hence advancing

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[244] *See* Ernst Oliver Wilhelm, *A Brief History of the General Data Protection Regulation (1981-2016)*, IAPP (Feb. 2016), https://iapp.org/resources/article/a-brief-history-of-the-general-data-protection-regulation/ [https://perma.cc/AFH4-HDEL]; James Kanter & Eric Pfanner, *Europe Opens Antitrust Inquiry into Google*, N.Y. TIMES (Nov. 30, 2010), https://www.nytimes.com/2010/12/01/technology/01google.html [https://perma.cc/3LSM-3R33].

[245] *See* Directive 2000/31, of the European Parliament and of the Council of 8 June 2000 on Certain Legal Aspects of Information Society Services, in Particular Electronic Commerce, in the Internal Market, 2000 O.J. (L 178) 13; Scott Feira et al., *Section 230 of the Communications Decency Act of 1996 An Overview and Recent Developments*, COMPUT. INTERNET LAW., Oct. 2022, at 4–5.

[246] However, even before the GDPR was adopted, the European Court of Justice was moving towards a more rights-protective interpretation of the Data Protection Directive, in particular after the Lisbon Treaty made the Charter of Fundamental Rights binding. *See* Case C-131/12, Google Spain SL v. Agencia Española de Protección de Datos, ECLI:EU:C:2014:317 (May 13, 2014); Case C-362/14, Maximillian Schrems v. Data Prot. Comm'r, ECLI:EU:C:2015:650 (Oct. 6, 2015); *see also* Thomas Streinz, *The Evolution of European Data Law*, *in* THE EVOLUTION OF EU LAW 908 (3d ed. 2021) (discussing how the Lisbon Treaty recognized the need for "fundamental rights protection" of personal data).

[247] Alphabet Inc., Quarterly Report (Form 10-Q) (Apr. 23, 2018), https://www.sec.gov/Archives/edgar/data/1652044/000165204418000016/goog10-qq12018.htm [https://perma.cc/G54B-WQVY]; Facebook, Inc., Amended & Restated Certificate of Incorporation (Oct. 28, 2021), https://www.sec.gov/Archives/edgar/data/1326801/000132680121000071/a20211028-exhibit31.htm [https://perma.cc/DD46-Z5VH].

[248] *See* Bradford, *supra* note 71, at 55.

[249] *Id.* at 39.

European integration. This neoliberal foundation makes EU regulations inherently less stringent and more market driven. The EU's proposed new AI regulation illustrates this well, garnering criticism both from those who believe it goes too far and from those who do not think it goes far enough in protecting fundamental rights.[250]

Furthermore, the main target of the EU's digital regulation to date has been large U.S. tech companies, but few critics would suggest that the stringent EU regulations have discouraged those companies from innovating.[251] The EU has issued adverse antitrust decisions against Microsoft (2004), Intel (2009), and Google (2017, 2018, and 2019), extracted a settlement from Amazon (2022),[252] and is now challenging anticompetitive practices by Apple, Google, and Meta.[253] Other European regulations, ranging from data protection to content moderation, and from online copyright rules to digital taxation, have also mostly affected U.S. tech companies. While some have criticized these regulations as burdensome, it is difficult to see how they have held back the technological progress and innovative potential of these companies. Of course, it is possible that these companies would have innovated even more in the absence of the regulatory

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[250] For contrasting positions, see Eva Simon, Jonathan Day, Karolina Iwańska & Kerttu Willamo, *Packed with Loopholes Why the AI Act Fails to Protect Civic Space and the Rule of Law*, LIBERTIES (Apr. 4, 2024), https://www.liberties.eu/en/stories/ai-act-analysis/45023 [https://perma.cc/Y7ZL-YTET]; and Eglė Markevičiūtė, *The EU's AI Act Will Stifle Innovation and Won't Become a Global Standard*, CONSUMER CHOICE CTR. (Feb. 6, 2024), https://consumerchoicecenter.org/the-eus-ai-act-will-stifle-innovation-and-wont-become-a-global-standard/ [https://perma.cc/A39G-Z6ZB].

[251] Martin Coulter, *US Lawmakers Warn Biden to Probe EU Targeting of Tech Firms -Letter*, REUTERS (Dec. 18, 2023, 2:54 PM), https://www.reuters.com/technology/us-lawmakers-urge-biden-probe-eu-targeting-tech-firms-letter-2023-12-18/ [https://perma.cc/5FFA-7JT4].

[252] Commission Decision of 24 May 2004 Relating to a Proceeding Pursuant to Article 82 of the EC Treaty and Article 54 of the EEA Agreement Against Microsoft Corporation, 2007 O.J. (L 32); James Kanter, *Europe Fines Intel $1.45 Billion in Antitrust* Case, N.Y. TIMES (May 13, 2009), https://www.nytimes.com/2009/05/14/business/global/14compete.html [https://perma.cc/9ZPM-M3G3]; European Commission Press Release IP/17/1784, Antitrust: Commission Fines Google €2.42 Billion for Abusing Dominance as Search Engine by Giving Illegal Advantage to Own Comparison Shopping Service (June 27, 2017), https://ec.europa.eu/commission/presscorner/detail/en/IP_17_1784 [https://perma.cc/HXY9-FZHN]; Eur. Commission Press Release IP/18/4581, Antitrust: Commission Fines Google €4.34 Billion for Illegal Practices Regarding Android Mobile Devices to Strengthen Dominance of Google's Search Engine (July 18, 2018), https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4581 [https://perma.cc/ZHF5-QR2A]; European Commission Press Release IP/19/1770, Antitrust: Commission Fines Google €1.49 Billion for Abusive Practices in Online Advertising (Mar. 20, 2019), https://ec.europa.eu/commission/presscorner/detail/en/IP_19_1770 [https://perma.cc/NFX5-QUHL]; European Commission Press Release IP/22/7777, Antitrust: Commission Accepts Commitments by Amazon Barring It from Using Marketplace Seller Data, and Ensuring Equal Access to Buy Box and Prime (Dec. 20, 2022), https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7777 [https://perma.cc/6M7H-Q2BU].

[253] Tom Gerken & Zoe Kleinman, *Apple, Meta and Google to be Investigated by the EU*, BBC (Mar. 25, 2024), https://www.bbc.com/news/technology-68655093 [https://perma.cc/XK7T-YZEB].

constraints they faced in the EU. But that does not seem to be a common concern. If anything, the prevailing perception is that the EU has fallen short in effectively reining in the U.S. tech giants.[254]

If the EU's tech regulation cannot be blamed for the dearth of globally successful European tech companies, the obvious question is what, then, explains the EU's inability to nurture companies such as Google or Apple. This Part offers four reasons that, taken together, likely explain the existing innovation gap between the United States and the EU—or at least significantly contribute to the emergence and persistence of that gap. These four reasons relate to the following features of the EU's tech ecosystem: (1) the absence of a digital single market; (2) the lack of deep and integrated European capital markets; (3) punitive bankruptcy laws and cultural attitudes that deter risk-taking; and (4) the absence of a proactive immigration policy that would allow Europe to harness global talent. These same factors can be identified as inherent strengths of the United States' tech ecosystem. Of course, these four factors are likely not the only reasons that explain the differences in the EU's and United States' tech ecosystems, nor is their relative contribution to tech sector performance easy to measure. However, they should illustrate how any argument equating the United States' tech success to its lax digital regulation—or equating the EU's struggle to generate tech champions to its stringent regulations—remains either too simplistic or plainly inaccurate.

A. Absence of a Digital Single Market Limits Scaling of Innovations

One significant impediment faced by European tech companies is that they do not benefit from a fully integrated digital single market (DSM) that would allow them to seamlessly operate across the EU.[255] Scaling is key to growth and competitiveness, yet such a growth strategy is harder to pursue when companies are operating across numerous national markets with different languages, cultures, and government regulations. A 2019 study conducted by the McKinsey Global Institute highlighted this challenge,

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[254] *See* Conor Dougherty, *Inside Yelp's Six-Year Grudge Against Google*, N.Y. TIMES (July 1, 2017), https://www.nytimes.com/2017/07/01/technology/yelp-google-european-union-antitrust.html [https://perma.cc/RN8P-6XJA]; Nitasha Tiku, *Don't Expect Big Changes from Europe's Record Google Fine*, WIRED (July 18, 2018, 3:35 PM), https://www.wired.com/story/dont-expect-big-changes-from-europes-record-google-fine/ [https://perma.cc/4L3E-7CPR]; Murgia & Espinoza, *supra* note 160; EUR. CT. OF AUDITORS, THE COMMISSION'S EU MERGER CONTROL AND ANTITRUST PROCEEDINGS: A NEED TO SCALE UP MARKET OVERSIGHT 40 (2020), https://op.europa.eu/webpub/eca/special-reports/eu-competition-24-2020/en/ [https://perma.cc/DE5J-PZAA].

[255] *Single Market Barriers Mean a Huge Loss to the Collective Public Good for Europe*, EESC (July 18, 2022), https://www.eesc.europa.eu/en/news-media/news/single-market-barriers-mean-huge-loss-collective-public-good-europe [https://perma.cc/RA5J-KYF6].

noting that "[f]ragmentation seems to put Europe at a structural disadvantage" when considering the innovation deficit between Europe on one hand and the United States and China on the other.[256] In contrast, American and Chinese companies benefit from more homogeneous home markets, which make it relatively easier for their companies to scale domestically. That domestic scaling also paves the way for these companies' subsequent global expansion. The fragmented DSM is a particular challenge for small- and medium-size enterprises (SME), which presents a challenge for the EU's tech sector. Around 96% of the over 10,000 potentially high-growth platforms established in the EU are SMEs.[257] For them, the costs of fragmentation are often prohibitively high as they cannot draw on economies of scale to grow beyond a certain size.

Several reasons contribute to the fragmentation of the European single market for digital services. The EU is a heterogeneous consumer market that comprises twenty-four official languages. There are notable political and cultural differences across the EU member states, in addition to differences in per capita GDP and levels of technological maturity. All these factors shape consumer demand and create barriers for intra-EU trade. For example, it was naturally easier for Amazon to start as an online bookseller in the United States, where the demand for English-language books was high across the country. In Europe, the publishing market is more fragmented because of linguistic diversity, creating obstacles for scaling across the continent. Video-on-demand (VOD) services have also been difficult to scale in Europe because audience demand varies across member states.[258] Spanish viewers are interested in different content than Belgian viewers, whereas the demand for various titles is likely to vary less between audiences in Michigan and Virginia.[259] As a result, providers of VOD services in Europe often must offer wholly different content in different member states, which hinders their ability to market their services at scale.[260]

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[256] *See* JACQUES BUGHIN, ECKART WINDHAGEN, SVEN SMIT, JAN MISCHKE, PAL ERIK SJATIL & BERNHARD GÜRICH, MCKINSEY GLOB. INST., INNOVATION IN EUROPE: CHANGING THE GAME TO REGAIN A COMPETITIVE EDGE 14 (2019), https://www.mckinsey.com/~/media/mckinsey/featured%20insights/innovation/reviving%20innovation%20in%20europe/mgi-innovation-in-europe-discussion-paper-oct2019-vf.ashx [https://perma.cc/7K3N-576K].

[257] *Impact Assessment Accompanying the Document Proposal for a Regulation of the European Parliament and of the Council on a Single Market for Digital Services (Digital Services Act) and Amending Directive 2000/31/EC*, para. 73, SWD (2020) 348 final (Dec. 15, 2020).

[258] SOPHIE DE VINCK, HERITIANA RANAIVOSON & BEN VAN ROMPUY, EUR. COMM'N, FRAGMENTATION OF THE SINGLE MARKET FOR ON-LINE VIDEO-ON-DEMAND SERVICES: POINT OF VIEW OF CONTENT PROVIDERS 33 (2014), https://digital-strategy.ec.europa.eu/en/library/fragmentation-single-market-line-video-demand-services-point-view-content-providers [https://perma.cc/832E-EJ8E].

[259] *See id.*

[260] *See id.*

There is little that can be done to remove existing linguistic and cultural barriers through EU policymaking. However, there are also legal barriers that undermine digital trade within the EU, and those are a function of policy choices. Today, tech companies must often navigate a diverse set of national laws across Europe, which adds costs, complexity, and uncertainty to their business operations.[261] For example, France recently adopted onerous requirements on software updates and warranties, adding costs and complexity for any software provider willing to offer products to customers in France.[262] When faced with such country-specific legal requirements, tech companies may need to offer different product varieties in different parts of Europe, which adds to their operating costs. Various other laws, including differences in national value-added tax (VAT) systems, add to tech companies' compliance burdens. According to a 2019 survey of European entrepreneurs, over 60% of European businesses find VAT procedures to be a "significant" or "very significant" obstacle to doing business in the single market.[263] While the EU has sought to simplify VAT compliance for companies operating across the EU member states,[264] companies still face separate VAT registration requirements in all EU countries where they store inventory.[265]

Even when regulations are harmonized at the EU level, implementation often differs across the twenty-seven jurisdictions. Such differences in implementation increase operational burdens for companies and lead to the fragmentation of the single market. The Audiovisual Media Services Directive (AVMSD) is a good illustration of this issue. AVMSD was designed to harmonize national legislation on audiovisual media, including

[261] See, for example, France's onerous requirements around software and warranties, which undermine the EU's deregulatory efforts and risk fragmenting the single market. *Single Market Barriers Continue Limiting the EU's Potential for the Twin Transition Examples in Key Sectors*, DIGIT. EUR. (Mar. 3, 2022) [hereinafter *Single Market Barriers*], https://www.digitaleurope.org/resources/single-market-barriers-continue-limiting-the-eus-potential-for-the-twin-transition/ [https://perma.cc/X8PG-VZVT].

[262] Claude-Étienne Armingaud, Camille J. Scarparo & Louise Bégué, *France New Requirements Concerning the Sale of Digital Goods*, K&L GATES (July 21, 2022), https://www.klgates.com/France-New-Requirements-Concerning-the-Sale-of-Digital-Goods-7-21-2022 [https://perma.cc/Z3NM-SRDS].

[263] EUROCHAMBRES, BUSINESS SURVEY—THE STATE OF THE SINGLE MARKET: BARRIERS AND SOLUTIONS 12 (2019), https://www.eurochambres.eu/wp-content/uploads/2020/08/Business-Survey-The-state-of-the-Single-Market-Barriers-and-Solutions-DECEMBER-2019.pdf [https://perma.cc/KZ48-M78J].

[264] European Commission Press Release IP/21/3098, VAT: New E-Commerce Rules in the EU Will Simplify Life for Traders and Introduce More Transparency for Consumers (June 28, 2021), https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3098 [https://perma.cc/YL8E-3JXW].

[265] *Single Market Barriers*, *supra* note 261.

television broadcasting and VOD services.[266] One of its policy goals is to facilitate the sale of audiovisual goods and services across the EU by only subjecting the provider to the laws of the EU member state where the provider is established.[267] However, in practice, several member states have undermined this principle, creating additional regulatory requirements that add costs and can even require tailored products for different markets.[268] Member states have also introduced high investment obligations, levies, and different reporting obligations for VOD services, further hindering the cross-border expansion of those services.[269] These and other differences have led the European Audiovisual Observatory—a public service organization established under the Council of Europe—to conclude that the current regulatory environment in this industry provides a labyrinth of obstacles to cross-border scaling in Europe.[270]

The AVMSD is hardly a lone example of legal fragmentation that persists despite the EU-level efforts to pursue harmonization. The EU's 2019 Directive on Copyright in the Digital Single Market has also fallen short of its goal to foster a single market for online copyright.[271] Member states have been slow and inconsistent in transposing the Directive into national law, deepening regulatory divergence and undermining the cohesion of the DSM.[272] In response to these threats to the unity of European standards and the risks to the DSM, the European Commission recently referred eleven EU member states to the Court of Justice of the European Union for their failure to fully transpose EU copyright rules into national law, illustrating the hurdles that persist in the EU's efforts to complete the DSM.[273]

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[266] Directive 2010/13, of the European Parliament and of the Council of 10 March 2010 on the Coordination of Certain Provisions Laid Down by Law, Regulation, or Administrative Action in Member States Concerning the Provision of Audiovisual Media Services (Audio Media Services Directive), 2010 O.J. (L 95).

[267] *Id.* at 13.

[268] See, for example, measures taken by Germany and France. *Single Market Barriers*, *supra* note 261.

[269] *Id.*

[270] FRANCISCO JAVIER CABRERA BLÁZQUEZ, MAJA CAPPELLO, JULIO TALAVERA MILLA & SOPHIE VALAIS, EUR. AUDIOVISUAL OBSERVATORY, INVESTING IN EUROPEAN WORKS: THE OBLIGATIONS ON VOD PROVIDERS, foreword (2022), https://rm.coe.int/iris-plus-2022en2-financial-obligations-for-vod-services/1680a6889c [https://perma.cc/PR9S-W9QM].

[271] Mathilde Adjutor, *Copyright Rules Contradictory National Implementation Threatens the Single Market*, DISRUPTIVE COMPETITION PROJECT (Oct. 28, 2022), https://project-disco.org/european-union/102822-copyright-rules-contradictory-national-implementation-threatens-the-single-market/ [https://perma.cc/4EN5-DG2G].

[272] *Id.*

[273] European Commission Press Release IP/23/704, The European Commission Referred 11 Member States to the Court of Justice of the European Union for Failing to Fully Transpose EU Copyright Rules

These examples demonstrate how tech companies' ability to grow in Europe is compromised when the EU market is effectively balkanized along member-state lines. Whereas American tech companies have benefited from being able to scale much more rapidly across a fully integrated domestic market, European tech founders are constrained by the small size of their local market and the difficulty of expanding to other parts of Europe. Patrick Borre, cofounder of ticketing platform Billetto, noted how "[i]f you're based in Denmark, for example, your entire local market is only half the size of London, so you quickly hit a ceiling."[274] He indicated that "achieving initial scale [in Europe] is much more difficult than in the US" because "every European country has its own distinct environment you must learn about and navigate."[275] This fragmented home for European startups has forced them to internationalize earlier than their American counterparts, which were able to build scale domestically at first. According to a 2020 study, "about 70 percent of European unicorns had to establish a global or partly global geographical footprint," whereas only "50 percent of US unicorns" had to do the same.[276]

European lawmakers acknowledge that the fragmented DSM hampers the European technology sector's growth. In many other sectors of the economy, European companies benefit from a single European market as EU laws have harmonized national regulations and thereby facilitated intra-EU trade.[277] However, the efforts to create a digital single market remain incomplete as legislation in this sector has not kept up with other EU-wide harmonization efforts. In 2010, the Commission recognized that, as a result of this fragmentation, "[t]oo few of our innovative SMEs grow into large, globally successful companies."[278] However, most barriers to growth and innovation have remained in place since 2010, despite the EU's persistent

into National Law (Feb. 15, 2023), https://digital-strategy.ec.europa.eu/en/news/european-commission-referred-11-member-states-court-justice-european-union-failing-fully-transpose [http://perma.cc/7QY4-XSSY].

[274] Kjartan Rist, *Europe Is Building World-Class Tech Companies–But Can It Close the Gap with the US?*, FORBES (May 27, 2022, 7:00 AM), https://www.forbes.com/sites/kjartanrist/2022/05/27/europe-is-building-world-class-tech-companies--but-can-it-close-the-gap-with-the-us/?sh=435338701983 [https://perma.cc/7S6E-42JD].

[275] *Id.*

[276] Kim Baroudy, Jonatan Janmark, Abhi Satyavarapu, Tobias Strålin & Zeno Ziemke, *Europe's Start-Up Ecosystem Heating Up, but Still Facing Challenges*, MCKINSEY & CO. (Oct. 11, 2020), https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/europes-start-up-ecosystem-heating-up-but-still-facing-challenges [https://perma.cc/WK2Y-KD3H].

[277] Eur. Comm'n, *2023 Annual Single Market Report Single Market at 30*, at 4, 11–12, SWD (2023) 26 final (Jan. 31, 2023).

[278] European Commission Memorandum MEMO/10/473, Turning Europe into a True Innovation Union (Oct. 6, 2010), https://ec.europa.eu/commission/presscorner/detail/en/MEMO_10_473 [https://perma.cc/2HZX-KWLF].

efforts to pursue greater digital integration. In 2015, only 4% of all digital services consumed in the EU were sold cross-border.[279] In 2020, European Commission Executive Vice President Margrethe Vestager acknowledged that "[o]ne of the reasons why [the EU does not] have a Facebook and . . . a Tencent is that [the EU] never gave European businesses a full single market where they could scale up."[280] This suggests that EU leadership is aware of the challenge but has struggled to address it effectively to date.

The absence of a DSM holds European tech companies back in many industries, few of which have received particular attention in recent years. One 2021 study documents the difficulties in deploying AI in the healthcare industry, in part because there are no harmonized standards on data quality, health-related cybersecurity protocols, standardized electronic health records, or infrastructures for exchanging health data across Europe.[281] Health industries also differ across Europe due to varying cultural approaches and risk appetites for new technology, adding to the balkanization. These factors complicate tech companies' ability to scale AI applications across Europe's health care sectors.

Another example is the cloud computing and storage industry. In 2016, a study commissioned by the European Parliament estimated the cost of the incomplete DSM for cloud computing at "between €31.5 and €63 billion per year."[282] According to the European Cloud Partnership, one of the reasons Europe lags behind the United States is the lack of regulatory consistency, which adversely affects both cloud providers and cloud users.[283]

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[279] *See* EUR. COMM'N, WHY WE NEED A DIGITAL SINGLE MARKET (May 6, 2015), https://commission.europa.eu/document/download/87a26ac5-2cb5-465c-b04b-dec07dd18fe7_en?filename=dsm-factsheet_en.pdf [https://perma.cc/R647-ZBHF]; PAUL-JASPER DITTRICH, JACQUES DELORS INST., BALANCING AMBITION AND PRAGMATISM FOR THE DIGITAL SINGLE MARKET 3 (Sept. 7, 2017), https://institutdelors.eu/wp-content/uploads/2020/08/balancingambitionandpragmatismforthedigitalsinglemarket-dittrich-jdib-sept2017-4.pdf [https://perma.cc/4R9F-3N5E].

[280] Melissa Heikkilä, *Vestager Touts AI-Powered Vision for Europe's Tech Future*, POLITICO (Feb. 17, 2020, 12:01 AM), https://www.politico.eu/article/margrethe-vestager-touts-ai-artificial-intelligence-powered-vision-for-europe-tech-future/ [https://perma.cc/LV6E-8KZL].

[281] PRICEWATERHOUSECOOPERS, STUDY ON EHEALTH, INTEROPERABILITY OF HEALTH DATA AND ARTIFICIAL INTELLIGENCE FOR HEALTH AND CARE IN THE EUROPEAN UNION 23 (2021), https://op.europa.eu/en/publication-detail/-/publication/fb8d8ec2-55a0-11ed-92ed-01aa75ed71a1 [https://perma.cc/Y7KQ-9EQG].

[282] MORITZ IMMANUEL GODEL, ANNETTE HARMS, SIÔN JONES & IRIS MANTOVANI, EUR. PARLIAMENT, IP/A/IMCO/2015-06, REDUCING COSTS AND BARRIERS FOR BUSINESSES IN THE SINGLE MARKET 46 (2016), https://www.europarl.europa.eu/RegData/etudes/STUD/2016/578966/IPOL_STU(2016)578966_EN.pdf [https://perma.cc/523S-GSN9].

[283] EURO. CLOUD P'SHIP STEERING BD., ESTABLISHING A TRUSTED CLOUD EUROPE 8 (2014), https://op.europa.eu/en/publication-detail/-/publication/b5c80ddb-fa1a-465b-a8f3-3e6c90af4a3b [https://perma.cc/YP55-28F2].

The above discussion has shown how the fragmented DSM poses a major impediment for European tech companies' growth as they face multiple barriers to scaling beyond a certain size. But the discussion also casts European-level tech regulations in a new light. The problem for tech companies is not often regulatory *stringency* in Europe as much it is regulatory *complexity* due to the absence of common European rules. The alternative to the GDPR, AI Act, DMA, DSA, and other major European-level digital regulations is not a Europe without digital regulation; the alternative is a Europe with twenty-seven different digital regulations, adding to the complexity that is already hampering tech companies' growth strategies in Europe. As a result, laws such as the GDPR are more likely to facilitate than undermine innovation, by mitigating uncertainty and complexity. After all, an EU with twenty-seven disparate approaches toward data protection would, no doubt, present even greater barriers for data transfers across Europe.

B. Shallow and Fragmented Capital Markets Impede Innovation Funding

The DSM is not the only domain where European integration is falling short and hindering the growth potential of the EU's tech sector. Another major impediment is the absence of deep and integrated capital markets that would allow European companies to fund their innovations in Europe. In contrast to their American counterparts, startups in Europe have historically relied on banks in lieu of venture capital (VC) financing from institutional investors.[284] This is a direct result of underdeveloped and fragmented capital markets in Europe. But banks are known for being more risk-averse than VC investors, calling into question their suitability to invest in high-risk, high-reward startups in the technology space.[285]

According to a study by the McKinsey Global Institute, the underdevelopment of equity finance in Europe poses a major challenge for

[284] Craig S. Smith, *Europe's Venture Capital Scene Is Narrowing the Gap with the US Despite Global Investment Slowdown*, FORBES (Feb. 14, 2023, 12:14 PM), https://www.forbes.com/sites/craigsmith/2023/02/14/europes-venture-capital-scene-is-narrowing-the-gap-with-the-us-despite-global-investment-slowdown/?sh=712f12a4993b [https://perma.cc/6HXX-26DU]. The European version of financing "chok[es] capital supply and expos[es] the investment process to a host of frictions." Will Gornall & Ilya A. Strebulaev, The Economic Impact of Venture Capital: Evidence from Public Companies 21 (June 2021) (unpublished manuscript), https://ssrn.com/abstract=2681841 [https://perma.cc/P8B8-K2RL]; Laura Bottazzi, Marco Da Rin, Jan C. van Ours & Erik Berglöf, *Venture Capital in Europe and the Financing of Innovative Companies*, 17 ECON. POL'Y 229, 240 tbl.2 (2002) (showing how, in the period from 1991 to 2000, institutional investors provided between 56% and 76% of all venture capital in the United States, compared to only 13% to 34% in Europe. Meanwhile, banks provided between 32% and 48% of financing in Europe, while only making up 3% to 23% in the United States over the same period).

[285] Smith, *supra* note 284.

startups seeking funding.[286] Analyzing European AI startups, this study concluded that financing has a "significantly higher impact" on the density of AI startup networks than other factors such as the ability to build innovative business models. While European companies can often secure seed funding and succeed in early fundraising rounds, they struggle to raise capital in later rounds. The comparison to the United States is stark: When companies enter the later-stage D and E funding rounds, the percentage of total European VC funding as a proportion of U.S. VC funding falls by approximately 50%.[287] In the absence of large European VC funds that have the capital to support late-stage rounds, similar U.S. companies in comparable industries tend to raise significantly higher sums than their European rivals.[288] The financial analytics firm S&P Global has similarly highlighted how "the lack of finance for equity growth is among the biggest reasons for the dearth of big new innovators in the EU, especially in the digital and technological sectors."[289]

Many of today's leading tech giants, including Apple, Alphabet, and Meta, hail from Silicon Valley, where entrepreneurial talent meets deep pockets of risk capital. Risk-seeking VC investors—pursuing rare but, when successful, astronomical awards—have, no doubt, fueled these and other U.S. tech companies' innovations.[290] These investors have channeled both capital and talented employees into countless tech startups, incubating a fertile tech industry and establishing Silicon Valley's preeminence in the global digital economy.[291] The thriving VC market offers a powerful explanation for the success of American tech startups, revealing the benefits that ensue when three key inputs—capital, entrepreneurs, and financial intermediaries—come together in a single region such as Silicon Valley.[292] In this private ordering that benefits from "agglomeration economics," the government has played a trivial role.[293] Instead, VC firms are in the driver's

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[286] *See* BUGHIN ET AL., *supra* note 256, at 8.

[287] Baroudy et al., *supra* note 276, at 7.

[288] *See id.*

[289] Sylvain Broyer & David Henry Doyle, *The EU Capital Markets Union Turning the Tide*, S&P GLOB. (June 1, 2020), https://www.spglobal.com/en/research-insights/featured/special-editorial/the-eu-capital-markets-union-turning-the-tide [https://perma.cc/WTV7-KD7M].

[290] *See* SEBASTIAN MALLABY, THE POWER LAW: VENTURE CAPITAL AND THE MAKING OF THE NEW FUTURE 8 (2022).

[291] *Id.* at 13.

[292] Ronald J. Gilson, *Engineering a Venture Capital Market Lessons from the American Experience*, 55 STAN. L. REV. 1067, 1069 (2003).

[293] *See* Ronald J. Gilson, *The Legal Infrastructure of High Technology Industrial Districts Silicon Valley, Route 128, and Covenants Not to Compete*, 74 N.Y.U. L. REV. 575, 576 (1999).

seat as financial intermediaries, contributing not only capital but also invaluable expertise to startups.[294]

What sets the United States apart from the EU is not only the prominent role of VCs as financial intermediaries funding tech companies but also the type of investors that provide the capital that VC firms deploy. The American VC market has benefited from substantial capital provided by institutional investors such as universities and pension funds that—unlike their European counterparts—have been free to invest their plentiful coffers in risky startups.[295] In particular, the massive endowments of American universities have facilitated the continued growth of venture capital and startups in the United States. It is telling, for instance, that universities contributed about half of the capital raised by VC firm Greylock Partners in each of its partnerships from the 1970s onwards.[296] VC firms have eagerly welcomed university endowments as universities typically have longer investment horizons and greater ability to endure illiquidity. As a result, universities are less prone to withdraw funds even when stocks are underperforming.[297] European universities simply do not have the capital to invest on the same scale as their American counterparts. Most of them do not have any significant endowments—much less ones capable of being deployed to invest heavily in VC.[298]

Pension funds have similarly fueled VC growth in the United States. According to a 2017 survey of leading VC firms worldwide, public pension funds make up the biggest class of limited partners in VC funds, contributing 27% of committed capital.[299] VC markets have been open to pension funds since regulatory reforms in the late 1970s.[300] Those reforms expanded pension funds' ability to allocate capital to stocks as opposed to only "safe" investments, such as government bonds. By some estimates, these rule changes increased the money entrusted to VC funds tenfold in the early

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[294] *Id.* at 1071, 1088.

[295] Stephen Lowery, *VC Trends Europe Versus US*, SILICON VALLEY BANK (Mar. 25, 2019), https://www.svb.com/blogs/svb-fund-times/vc-trends-europe-versus-us/ [https://perma.cc/6593-3MDJ].

[296] TOM NICHOLAS, VC: AN AMERICAN HISTORY 311 (2019).

[297] *Id.*

[298] *See* Alex Usher, *University Endowments in a Global Context*, HIGHER EDUC. STRATEGY ASSOCS. (June 4, 2015), https://higheredstrategy.com/university-endowments-in-a-global-context/ [https://perma.cc/T7ZU-CPM2].

[299] PREQIN LTD., PREQIN SPECIAL REPORT: THE VENTURE CAPITAL TOP 100 (May 2017), https://docs.preqin.com/reports/Preqin-Special-Report-Venture-Capital-Top-100-Report.pdf [https://perma.cc/S2CT-9QJA]. When private sector pension funds are added to that statistic, pension funds, in general, represent 42% of the surveyed VC firms' committed capital.

[300] Gornall & Strebulaev, *supra* note 284, at 4; Max M. Schanzenbach & Robert H. Sitkoff, *Did Reform of Prudent Trust Investment Laws Change Trust Portfolio Allocation?*, 50 J.L. & ECON. 681, 681–82 (2007).

1980s as institutional investors—in particular, large pension funds—parked their money in VC.[301] However, this development has been mostly confined to the United States. In Europe, pension funds are largely restricted from investing in private and illiquid assets.[302] Even in the United Kingdom, which has the most developed capital markets in Europe, pension funds are still grappling with regulatory barriers when it comes to investing in tech startups.[303] Therefore, the absence (or near-absence) of a similarly robust and active base of institutional investors in Europe has contributed to the vast difference between the European and American capital markets in general, and the VC markets in particular.

Of course, in principle, EU startups could also grow with the help of foreign capital. Capital is mobile and investors should not care if their portfolios grow with foreign or domestic innovations. However, VC investment tends to favor local companies.[304] Many American VC firms, based in or near Silicon Valley, feel more comfortable making risky bets on companies whose funders they know and whose business operations they can closely monitor after making the investment. After all, VC investment is inherently risky, and the potential of any given startup is difficult to assess. Startups based in Silicon Valley benefit from closely-knit professional and social networks where top researchers, entrepreneurs, and investors frequently interact and rely on established relationships. American VCs cannot similarly draw on their local network and informational advantage if they invest in a startup in Berlin, Helsinki, or Lisbon. This local bias explains why the U.S.-based VC capital has disproportionately benefited tech startups based in Silicon Valley.[305]

However, in recent years, American VC firms have invested in European startups at a greater rate than before, tripling their funding of

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[301] Gornall & Strebulaev, *supra* note 284, at 20.

[302] *Id.* at 21.

[303] *See* Ulric Musset, *It's Time to Open Up UK Pension Funds to Venture Capital*, CARTA (Oct. 7, 2021), https://carta.com/uk/en/blog/open-uk-pension-funds-vc/ [https://perma.cc/HGF2-9K5V]; *£75bn Startup Pension Boost for UK Tech Companies*, HARPER JAMES (last updated July 21, 2023), https://harperjames.co.uk/news/pension-funds-will-be-able-to-invest-in-tech/ [https://perma.cc/756A-ZBLB].

[304] *See* Sarath Balachandran & Exequiel Hernandez, *Mi Casa Es Tu Casa Immigrant Entrepreneurs as Pathways to Foreign Venture Capital Investments*, 42 STRATEGIC MGMT. J. 2047, 2051 (2021) (discussing the local bias in VC investment but noting it might be changing by relying on immigrant networks).

[305] *See* Douglas J. Cumming & Na Dai, *Local Bias in Venture Capital Investments*, 17 J. EMPIRICAL FIN. 362, 362 (2010).

European ventures between 2020 and 2021.[306] Several prominent U.S.-based investment firms have also opened European offices, which may indicate the arrival of more American capital in the future. For instance, the storied Sequoia Capital—which had $85 billion in assets under management in 2022[307]—opened an office in London in early 2021.[308] These developments suggest that some Silicon Valley venture capitalists believe that the European tech ecosystem could be on the cusp of exponential growth.[309] They also give hope that even if European sources of capital remain limited for the continent's startups, American and other foreign capital may be able to offset some of those deficiencies. However, these hopes have dimmed somewhat since 2022 as American VCs have scaled back their investments in Europe post-pandemic as part of a global funding downturn.[310]

Even if U.S.-based VC funding was available for some promising European startups, few question the benefits that would ensue from more integrated and robust European capital markets. Historical differences in securities laws, investor protections, enforcement mechanisms, and market structures have resulted in a fragmented capital market across the EU that "has hampered market attractiveness, depth, and liquidity, which is driving up funding costs."[311] EU institutions have recognized the problem and have undertaken several initiatives aimed at improving the funding available for European startups and scale-ups. One landmark initiative is the Capital Markets Union (CMU), established in 2015.[312] The CMU's goal is to reduce fragmentation in financial markets by creating a single market for

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306 *See How Sturdy Are Europe's Tech Unicorns?*, ECONOMIST (July 4, 2022), https://www.economist.com/business/2022/07/04/how-sturdy-are-europes-tech-unicorns [https://perma.cc/FM75-V7VS].

307 *See* Natalie Sachmechi, *Sequoia Capital Opening Its First New York Office*, CRAIN'S N.Y. BUS. (July 28, 2022, 11:44 AM), https://www.crainsnewyork.com/real-estate/sequoia-capital-opening-its-first-new-york-office [https://perma.cc/74K4-A6U5].

308 *See* Sam Shead, *Prestigious Silicon Valley VC Firm Looks to Europe for Start-Up Success Stories*, CNBC (last updated Dec. 1, 2020, 11:05 AM), https://www.cnbc.com/2020/11/26/sequoia-capital-vc-firm-looks-to-europe-for-start-up-success-stories.html [https://perma.cc/2GPG-Q4VZ].

309 *See* Sebastian Mallaby, *Venture Capital's New Race for Europe*, FIN. TIMES (Feb. 4, 2022), https://www.ft.com/content/6fc9455a-75fc-4952-a4ff-203e5579aefa [https://perma.cc/KYD4-RW4Q].

310 Kjartan Rist, *As VC Funding Slows to a Crawl, Where Now for Europe's Startups?*, FORBES (May 15, 2023, 6:50 AM), https://www.forbes.com/sites/kjartanrist/2023/05/15/as-vc-funding-slows-to-a-crawl-where-now-for-europes-startups/?sh=72ecc36034b8 [https://perma.cc/W39P-H6BX]; Lomas, *supra* note 168.

311 LIEVE MOSTREY, APOSTOLOS THOMADAKIS, KAREL LANNOO & NIAMH MOLONEY, EUR. CAP. MKTS. INST., TIME TO RE-ENERGIZE THE EU'S CAPITAL MARKETS 3 (2022), https://www.ecmi.eu/sites/default/files/for_publication_time_to_re-energise_the_eus_capital_markets.pdf [https://perma.cc/4UJN-YAE9].

312 *See What Is the Capital Markets Union?*, EUR. COMM'N, https://ec.europa.eu/info/business-economy-euro/growth-and-investment/capital-markets-union/what-capital-markets-union_en#overview [https://perma.cc/VG6C-YPAS].

capital in the EU. Deep and integrated European capital markets would help diversify financing sources, facilitate cross-border capital flows, and improve businesses' access to finance. The Commission has stated that the completion of the CMU will strengthen the EU's global competitiveness. Key leadership from the European Central Bank has similarly called for deeply integrated European capital markets. According to these individuals, progress toward the CMU would "support growth and innovation" as capital markets are "better at financing innovation and new sources of growth."[313] However, the implementation of the CMU has been slow.[314] In practice, European capital markets remain far from integrated, hampering European tech companies' ability to access the amount of funding available to their American counterparts.

The EU is not just trailing the United States in terms of private funding. The U.S. government has also played a more productive role than the EU in funding domestic tech innovations. While the private VC market provides the foundation for funding tech companies, governments can also contribute to a country's tech ecosystem by providing critical seed capital or otherwise facilitating technological innovations. The U.S. government has taken on a pivotal role in fostering many of the most foundational innovations that underpin today's digital economy.[315] The state-backed innovation strategy is often tied to national-security-related tech development, which the U.S. government has always had a strong incentive to support. Some of this investment can be traced back to the Cold War, when the U.S. government invested heavily in its arms race and space race against the Soviets. It also has roots in the United States' efforts to prevail in the economic competition against Japan in the 1980s. These battles called for massive state investments in technology, leading the United States to disburse large research grants to universities and offer lucrative military contracts to private tech companies. Governmental interests thus often called for public investment in private innovation.

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[313] *See* Luis de Guindos, Fabio Panetta & Isabel Schnabel, *Europe Needs a Fully Fledged Capital Markets Union – Now More Than Ever*, ECB BLOG (Sept. 2, 2020), https://www.ecb.europa.eu/press/blog/date/2020/html/ecb.blog200902~c168038cbc.en.html [https://perma.cc/LE68-NQD5].

[314] *See generally* EUR. CT. OF AUDITORS, CAPITAL MARKETS UNION – SLOW START TOWARDS AN AMBITIOUS GOAL (2020), https://www.eca.europa.eu/Lists/ECADocuments/SR20_25/SR_CMU_EN.pdf [https://perma.cc/XE4M-X5ZT].

[315] *See generally* MARGARET O'MARA, THE CODE: SILICON VALLEY AND THE REMAKING OF AMERICA (2019) (exploring the history of Silicon Valley and Big Tech in America); MARIANA MAZZUCATO, THE ENTREPRENEURIAL STATE: DEBUNKING PUBLIC VS. PRIVATE SECTOR MYTHS (2013) (arguing that the United States' economic success is a result of publicly funded investments in innovation and technology (rather than a result of the small-state, free market doctrine that often receives credit)).

Several path-breaking technologies have their origins in a U.S. government agency called Defense Advanced Research Project Agency (DARPA), which operates under the U.S. Department of Defense.[316] For example, DARPA financed the ARPANET, which was the predecessor of the internet.[317] E-mail was similarly developed as a result of DARPA-funded research projects at the Massachusetts Institute of Technology (MIT) and Stanford University.[318] Even the Apple iPhone is not a poster child of pure private entrepreneurship but rather a beneficiary of DARPA funding.[319] The iPhone's personal assistant "Siri," which relies on voice-recognition technology, was developed as a spinoff from a DARPA-backed artificial intelligence project.[320] In contrast, the EU does not have any joint defense fund that would be able to back European innovations at the same scale as DARPA, adding to the existing innovation gap.[321] Now that EU member states are bolstering their defense capabilities in the wake of Russia's invasion of Ukraine, there is an opening for a renewed conversation about common European defense capabilities, including joint investment in military technologies. As the U.S. example shows, a European equivalent of the American DARPA could yield substantial benefits for the broader innovation ecosystem in the EU. But comparing the American and European tech ecosystems as they stand right now, the relative dearth of both public and private funding in the EU offers a powerful reason for why today's tech companies emanate from the United States and not from the EU.

C. Punitive Bankruptcy Laws and the Culture of Risk-Aversion Discourage Entrepreneurship

Another potential reason for the absence of European tech giants is Europe's legal and cultural barriers to risk-taking and entrepreneurship. Punitive bankruptcy laws across the EU have made failure so costly that European entrepreneurs often shy away from the kind of risk-taking required for ambitious technological ventures. In a report studying insolvency regimes across countries, the Organisation for Economic Cooperation and

316 *Defense Advanced Research Projects Agency (DARPA)*, USA.GOV, https://www.usa.gov/agencies/defense-advanced-research-projects-agency [https://perma.cc/LHE3-RXKB].

317 *Paving the Way to the Modern Internet*, DEF. ADVANCED RSCH. PROJECTS AGENCY, https://www.darpa.mil/about-us/timeline/modern-internet [https://perma.cc/TS2H-DNK4].

318 Amy Lynne Bomse, *The Dependence of Cyberspace*, 50 DUKE L.J. 1717, 1721 (2001).

319 Mariana Mazzucato, *Taxpayers Helped Apple, but Apple Won't Help Them*, HARV. BUS. REV. (Mar. 8, 2013), https://hbr.org/2013/03/taxpayers-helped-apple-but-app [https://perma.cc/XF87-CKPH].

320 *Id.*

321 *Stronger European Defence*, EUR. COMM'N, https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/stronger-european-defence_en [https://perma.cc/EF4V-6BPE].

Development (OECD) described how "insolvency regimes that do not unduly penalise entrepreneurial failure can spur firm creation, draw more talented individuals into entrepreneurship and incentivize radical innovation over conservative business strategies."[322] Several studies suggest that lenient bankruptcy laws—often seen as those that protect the rights of debtors at the expense of creditors—have a positive effect on entrepreneurship and innovation,[323] even though other studies have identified instances in which debtor-friendly bankruptcy regimes may also have a negative effect on entrepreneurship.[324]

The United States and Europe differ in their approach to business failure, which is reflected in their respective bankruptcy laws. Across several dimensions, U.S. personal insolvency regimes are less punitive for the entrepreneur in case of failure, lowering barriers to entrepreneurship and risk-taking.[325] In its report, the OECD found that the personal costs of entrepreneurship, which were primarily measured by the time to discharge—that is, the number of years until bankrupt entrepreneurs are discharged from their debts—and the number of exemptions given to entrepreneurs—that is, the debtors' assets that are carved out from insolvency—were the lowest in the United States, Canada, and Turkey, and the highest in the Czech Republic, Sweden, Portugal, and several other European countries.[326]

Personal insolvency law is relevant in that it impacts individuals' incentives to engage in entrepreneurship in the first place, while also affecting their ability to return to the marketplace after a business failure. Entrepreneurs are typically only able to turn to VC when their innovation is at a more advanced stage. Until then, the entrepreneur often needs to rely on

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[322] Müge Adalet McGowan & Dan Andrews, *Design of Insolvency Regimes Across Countries* 10 (OECD Econ. Dep't Working Papers, Paper No. 1504, 2018), https://doi.org/10.1787/d44dc56f-en [https://perma.cc/MF9P-4BJB].

[323] Viral V. Acharya & Krishnamurthy Subramanian, *Bankruptcy Codes and Innovation*, 22 REV. FIN. STUD. 4949, 4950, 4951, 4953 (2009). *See generally* Seung-Hyun Lee, Yasuhiro Yamakawa, Mike W. Peng & Jay B. Barney, *How Do Bankruptcy Laws Affect Entrepreneurship Development Around the World?*, 26 J. BUS. VENTURING 505 (2011) (amassing a cross-country database of twenty-nine countries, finding that lenient, entrepreneur-friendly bankruptcy laws are significantly correlated with the level of entrepreneurship development as measured by the rate of new-firm entry); Błażej Prusak, Sylwia Morawska, Michał Łukowski & Przemysław Banasik, *The Impact of Bankruptcy Regimes on Entrepreneurship and Innovation. Is There Any Relationship?*, 18 INT'L ENTREPRENEURSHIP & MGMT. 473 (2022) (finding that countries with both an efficient legal system and debtor-friendly bankruptcy laws saw a higher level of risk acceptance among entrepreneurs).

[324] *See* Geraldo Cerqueiro & María Fabiana Penas, *How Does Personal Bankruptcy Law Affect Start-Ups?*, 30 REV. FIN. STUD. 2523, 2538–52 (2016); David M. Primo & Wm Scott Green, *Bankruptcy Law and Entrepreneurship*, 1 ENTREPRENEURSHIP RSCH. J. 1, 3 (2011) ("[T]ighter bankruptcy laws may not have the significant (negative) impact on innovative entrepreneurship feared by many.").

[325] *See* McGowan & Andrews, *supra* note 322, at 16 fig.2, 17 tbl.1.

[326] *Id.* at 19 fig.3.

her own funds, personal credit, or investment from family and friends, potentially overextending her personal finances. If fundraising efforts subsequently fail, the entrepreneur may face personal insolvency.[327] John Armour has shown that a harsher personal bankruptcy regime has both an ex ante and ex post adverse effect on entrepreneurship and thus dampens the aggregate demand for VC finance.[328] His cross-national study involving the United States and ten European jurisdictions shows that personal insolvency laws are generally more severe in Europe and that those punitive insolvency regimes discourage individuals from engaging in risky entrepreneurship in the first place.[329] In addition, such laws make it more difficult for failed entrepreneurs to return to the marketplace after insolvency.[330] More recent studies confirm these findings, suggesting that lenient personal bankruptcy laws, indeed, foster entrepreneurship.[331]

Like personal insolvency law, corporate insolvency law can also influence incentives for entrepreneurship. One way to measure if the corporate bankruptcy regime is creditor- or debtor-friendly is whether it facilitates restructuring of the firm in case of a bankruptcy. On this score, U.S. bankruptcy laws are generally considered more debtor-friendly in that they are designed to facilitate reorganization, which can salvage the failed company and allow the business to operate while it seeks to restructure its debts.[332] These features of the U.S. regime encourage entrepreneurship and risk-taking at the outset.[333] In contrast, the reorganization of a failed business is generally more difficult in Europe, although differences do exist across member states.[334] Without an agreed-upon reorganization plan, the debtor is

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[327] John Armour, *Personal Insolvency Law and the Demand for Venture Capital*, 5 EUR. BUS. ORG. L. REV. 87, 96 (2004).

[328] *Id.* at 95–97.

[329] *Id.* at 103–05.

[330] *See* John Armour & Douglas J. Cumming, *The Legislative Road to Silicon Valley*, 58 OXFORD ECON. PAPERS 596, 602 (2006).

[331] *See, e.g.*, Prusak et al., *supra* note 323, at 479; *see also* Douglas Cumming, Randall Morck, Zhao Rong & Minjie Zhang, *Personal Bankruptcy Law and Innovation Around the World* (Nat'l Bureau of Econ. Rsch., Working Paper No. 32826, 2024), https://www.nber.org/papers/w32826 [https://perma.cc/FNC9-ZGWX]. However, some studies focusing on individual countires have found no relationship. *See, e.g.*, Ali Sadeghi & Ewald Kibler, *Do Bankruptcy Laws Matter for Entrepreneurship? A Synthetic Control Method Analysis of a Bankruptcy Reform in Finland*, J. BUS. VENTURING INSIGHTS, Oct. 21, 2022, at 1 (analyzing Finland).

[332] *See, e.g.*, 11 U.S.C. § 362.

[333] Sadeghi & Kibler, *supra* note 331, at 2.

[334] *See* Francesco Guarascio, *EU Proposes U.S.-Style Rules to Give Failing Firms Second Chance*, REUTERS (Nov. 22, 2016, 10:01 AM), https://www.reuters.com/article/uk-eu-business-bankruptcy-idUKKBN13H1SW [https://perma.cc/8XTP-G6NZ]; José Garrido, Chanda DeLong, Amira Rasekh & Anjum Rosha, *Restructuring and Insolvency in Europe Policy Options in the Implementation*

doomed to liquidation, adding to the risks faced by European tech startups and other entrepreneurs. This explains, in part, why the various European insolvency regimes contribute to lower entrepreneurial activity in the EU as compared to the United States.

There are several reasons why the United States has chosen a more lenient bankruptcy regime, some of which stem from historical developments. The growth of the U.S. railroad industry in the nineteenth century, when American society spread westward across the continent, required immense amounts of credit.[335] If a railroad company went bankrupt, it would have been inefficient for creditors to force the railroad owner to strip up its steel tracks and sell them to repay debts. As such, bankruptcy law was forced to become debtor-friendly to ensure the train lines—the arteries of American industry at the time—remained in place. Even today, U.S. insolvency laws reflect the view that debtor-friendly bankruptcy laws are positively correlated with greater rates of innovation and economic growth.[336] Without the opportunity to receive a "fresh start," entrepreneurs would not innovate.[337]

Europeans do not share the American view on credit, risk-taking, and business failure.[338] However, EU leaders are increasingly aware that their approach toward insolvency can deter risk-taking, and thereby entrepreneurship.[339] Without a possibility for a fresh start, Europeans cannot afford to take the risk of default and are less likely to start a business in the first place. To alleviate this problem, EU institutions have sought to pursue greater harmonization of national insolvency laws across member states, stressing that insolvency from "entrepreneurship does not necessarily have

of the EU Directive 34 (Int'l Monetary Fund, Working Paper No. 21/152, 2021), https://www.imf.org/en/Publications/WP/Issues/2021/05/27/Restructuring-and-Insolvency-in-Europe-Policy-Options-in-the-Implementation-of-the-EU-50235 [https://perma.cc/2BT7-QSRY].

335 Todd J. Zywicki, *The Past, Present, and Future of Bankruptcy Law in America*, 101 MICH. L. REV. 2016, 2017–20 (2003).

336 Armour, *supra* note 327, at 10 (noting how debtor-friendly laws have positively contributed to U.S. VC entrepreneurship).

337 Florian Ederer & Gustavo Manso, *Incentives for Innovation Bankruptcy, Corporate Governance, and Compensation Systems*, *in* HANDBOOK ON LAW, INNOVATION AND GROWTH 8 (Robert E. Litan ed., 2011).

338 Thomas Fuller, *The Workplace Risk-Takers Are a Rare Breed in EU*, N.Y. TIMES (Jan. 19, 2005), https://www.nytimes.com/2005/01/19/business/worldbusiness/the-workplace-risktakers-are-a-rare-breed-in-eu.html [https://perma.cc/U9FP-9BYN]; Isabel Grilo & Jesus-Maria Irigoyen, *Entrepreneurship in the EU To Wish and Not to Be*, 26 SMALL BUS. ECON. 305, 310 (2006).

339 Katrina Bishop, *EU Needs Risk-Takers to Compete with US EU's Kroes*, CNBC (Oct. 20, 2014, 10:16 AM), https://www.cnbc.com/2014/10/20/eu-needs-risk-takers-to-compete-with-us-eus-kroes.html [https://perma.cc/4TGQ-TTN7].

to turn into a 'life sentence.'"[340] In 2016, the European Commission proposed a Directive aimed at reducing the costs of failure for entrepreneurs, endorsing the "principle of second chance."[341] The Directive, which bears similarities to Chapter 11 of the U.S. Bankruptcy Code, was formally adopted in 2019.[342] This, and other legislative efforts to date, have nevertheless been slow to harmonize and modernize EU bankruptcy laws across member states, prolonging the problem faced by European tech entrepreneurs.[343]

Yet unforgiving bankruptcy laws are only part of the story behind European entrepreneurs' risk-aversion. Cultural factors also play a role. Business failure carries a greater stigma in Europe, hampering risk-taking and consequently holding back innovation.[344] In Europe, "failure is regarded as a personal tragedy," whereas in Silicon Valley failure is seen as a badge of honor or rite of passage, leading to the mantra of "[f]ail fast, fail often."[345] This more forgiving American approach towards failure includes giving a second chance to individuals whose prior ventures have failed, recognizing that failure and success are often intertwined in the innovative startup ecosystem.[346]

Some stories of spectacular business failures in the United States, followed by even more spectacular successes, have contributed to the mindset that a failure is not fatal and can offer lessons and even breed new success. It is remarkable that one of the most successful U.S. tech entrepreneurs, Steve Jobs, was fired from Apple in 1985—the company he founded in 1976.[347] In retrospect, Jobs described his firing from Apple as "the

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[340] *See* CARLA STAMEGNA, EUR. PARLIAMENTARY RSCH. SERV., PE 623.548, NEW EU INSOLVENCY RULES GIVE TROUBLED BUSINESSES A CHANCE TO START ANEW (June 2018) [hereinafter STAMEGNA, NEW EU INSOLVENCY RULES], https://www.europarl.europa.eu/RegData/etudes/BRIE/2018/623548/EPRS_BRI(2018)623548_EN.pdf [https://perma.cc/PY4N-JD5U].

[341] *See* Council of the EU Press Release 369/19, Giving Entrepreneurs a Second Chance: New Rules on Business Insolvency Adopted (June 6, 2019), https://www.consilium.europa.eu/en/press/press-releases/2019/06/06/giving-entrepreneurs-a-second-chance-new-rules-on-business-insolvency-adopted/ [https://perma.cc/WP2N-YT9H].

[342] *See id.*; STAMEGNA, NEW EU INSOLVENCY RULES, *supra* note 340.

[343] *See* Emilie Ghio, Gert-Jan Boon, David Ehmke, Jennifer Gant, Line Langkjaer, & Eugenio Vaccari, *Harmonizing Insolvency Law in the EU New Thoughts on Old Ideas in the Wake of the COVID-19 Pandemic*, 30 INT'L INSOLVENCY REV. 427, 431–33 (2021); Council Regulation 2015/848, 2015 O.J. (L 141); *Commission Proposal for a Directive of the European Parliament and of the Council Harmonising Certain Aspects of Insolvency Law*, COM (2022) 702 final (July 12, 2022).

[344] Armour, *supra* note 327, at 100–01.

[345] James B. Stewart, *A Fearless Culture Fuels U.S. Tech Giants*, N.Y. TIMES (June 18, 2015), https://www.nytimes.com/2015/06/19/business/the-american-way-of-tech-and-europes.html [https://perma.cc/9LN2-LU5X]; *see* Baroudy et al., *supra* note 276.

[346] Elizabeth Pollman, *Startup Governance*, 168 U. PENN. L. REV. 155, 161 (2019).

[347] Walter Isaacson, *The Real Leadership Lessons of Steve Jobs*, HARV. BUS. REV. (Apr. 2012), https://hbr.org/2012/04/the-real-leadership-lessons-of-steve-jobs [https://perma.cc/37WU-64FQ].

best thing that could have ever happened to me," explaining how "[t]he heaviness of being successful was replaced by the lightness of being a beginner again, less sure about everything. It freed me to enter one of the most creative periods of my life."[348] After being let go by the Apple Board, Jobs went on to create NeXT and became chairman of Pixar before returning to Apple in 1997—this time to save the company from the verge of bankruptcy and to lead Apple to tremendous success.[349]

In contrast, Europeans do not share the American approach towards failure. They tend to be more risk-averse, dampening the continent's entrepreneurial spirit and holding back European companies' innovativeness.[350] Instead of celebrating—or even merely accepting—failure, Europeans value stability, which cultivates a mentality that is antithetical to disruptive innovation.[351] Several studies point to this conclusion. For example, one study by EOS Gallup Europe shows that 49% of Europeans, compared to 37% of Americans, believe a business should not be set up if there is a risk of failure.[352] Europeans are also less drawn to entrepreneurship more broadly. An analysis of media coverage of entrepreneurship shows that only 17% of press coverage in Germany portrays entrepreneurship in a positive light, while 39% of media coverage in the United States presents entrepreneurship positively.[353]

Europeans' risk aversion is similarly evident in their investment patterns. One study measuring attitudes towards financial risk across fifteen countries found that people living in Austria, Germany, and the Netherlands are the most risk-averse, while those living in the United States are the least risk-averse.[354] This leads to differential investment patterns, with most European retail investors believing that investments in shares, mutual funds,

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[348] *Steve Jobs Apple Founder's Moving Speech on Why Being Fired from Tech Giant Was the Best Thing to Happen*, INDEPENDENT (Feb. 24, 2016, 3:37 PM), https://www.independent.co.uk/news/people/steve-jobs-apple-founder-s-moving-speech-on-why-being-fired-from-tech-giant-was-the-best-thing-to-happen-a6893196.html [https://perma.cc/ARC5-GRSU].

[349] *See* Matt Weinberger, *Steve Jobs Would Have Been 65 on Monday Here's How the Late Apple CEO Saved the Company from Disaster and Set It on the Path to a $1 Trillion Valuation. (AAPL)*, BUS. INSIDER (Feb. 24, 2020, 6:30 PM), https://www.businessinsider.com/steve-jobs-apple-photos-2017-1 [https://perma.cc/3UD7-KU3T].

[350] Stewart, *supra* note 345; *see* PETER ESTER, ACCELERATORS IN SILICON VALLEY: BUILDING SUCCESSFUL STARTUPS 142 (2017).

[351] *See* ESTER, *supra* note 350, at 142; Stewart, *supra* note 345.

[352] *Europeans More Reluctant than Americans to Take Risks in Business Creation, Says Report*, EUR. COMM'N (July 12, 2002), https://cordis.europa.eu/article/id/18673-europeans-more-reluctant-than-americans-to-take-risks-in-business-creation-says-report.

[353] Baroudy et al., *supra* note 276.

[354] Maria Ferreira, *Cross-Country Differences in Risk Attitudes Towards Financial Investment*, VOXEU (Sept. 21, 2018), https://voxeu.org/article/cross-country-differences-risk-attitudes-towards-financial-investment [https://perma.cc/H8ZF-T45N].

and bonds are very risky, while comparable American investors perceived significantly less risk in the same investments.[355] Similarly, a study sponsored by the European Central Bank found that the ownership and relative magnitude of risky assets in the United States is far higher than in Europe.[356] This European culture of risk-aversion may also explain the more limited availability of later-stage VC funding for European startups.[357] Europeans are often too risk-averse to start a tech company—but possibly also too risk-averse to fund that tech company.

D. Inability to Harness Global Talent Contributes to Skills Deficit

Finally, the innovation deficit in Europe can be partly attributed to the EU's inability to attract the world's best innovative talent through a proactive migration policy. In comparison, the U.S. technology sector relies heavily on its ability to attract immigrants. A look at the founders of the most successful U.S. tech companies reveals a powerful story of the role of immigration behind these tech companies. Steve Jobs of Apple was the son of a Syrian immigrant; Jeff Bezos of Amazon is a second-generation Cuban immigrant; Eduardo Saverin, the co-founder of Facebook, is Brazilian; Sergey Brin, the co-founder of Google, was born in Russia; and Elon Musk of Tesla was born in South Africa.[358] These individuals are not rare exceptions: A 2018 study by the National Foundation for American Policy reveals that 55% of America's billion-dollar companies have an immigrant founder, and, if the children of immigrants are included, the statistic rises to 64%.[359]

Overall, studies have documented that immigrants are more entrepreneurial than the general U.S. population. A recent study focusing on immigration and entrepreneurship across industries found that immigrants are 80% more likely to found a firm compared to U.S.-born citizens.[360] Another study by the Center for American Entrepreneurship revealed that 43% of the 2017 Fortune 500 companies were founded by an

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[355] *Id.*

[356] Karim Bekhtiar, Pirmin Fessler & Peter Lindner, *Risky Assets in Europe and the US Risk Vulnerability, Risk Aversion and Economic Environment* 16 (Eur. Cent. Bank Working Paper Series, Paper No. 2270, 2019), https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2270~9c72a27c18.en.pdf [https://perma.cc/R5EC-6EDQ].

[357] *See* Baroudy et al., *supra* note 276.

[358] *Immigrant Founders of the 2017 Fortune 500*, CTR. FOR AM. ENTREPRENEURSHIP (Dec. 2017), https://startupsusa.org/fortune500/ [https://perma.cc/DX9Q-LKNE].

[359] *See* STUART ANDERSON, NAT'L FOUND. FOR AM. POL'Y, IMMIGRANTS AND BILLION-DOLLAR COMPANIES 1 (Oct. 2018), https://www.immigrationresearch.org/system/files/2018-billion-dollar-startups.nfap-Policy-Brief.2018.pdf [https://perma.cc/J6QJ-5C7P].

[360] Pierre Azoulay, Benjamin F. Jones, Daniel Kim & Javier Miranda, *Immigration and Entrepreneurship in the United States*, 4 AM. ECON. REV. 71, 81 (2022).

immigrant or the child of an immigrant.[361] Among the top thirty-five firms, that share rises to 57%.[362] These are high numbers considering that immigrants made up only 14% of the U.S. population as of December 2022.[363] The impact of foreign talent has also been strong in the technology sector, particularly among companies that trace their roots to Silicon Valley. One study found that 25% of engineering and technology companies established between 1995 and 2005 nationwide had at least one immigrant founder.[364] In comparison, during the same period, 52% of startups founded in Silicon Valley had at least one immigrant founder.[365] Immigrant talent also disproportionately fuels many tech companies focusing on emerging technologies, including AI. For example, *Forbes*' annual list of the fifty most promising North American AI startups features a large number of AI companies founded by immigrants; the inaugural 2019 list estimated that 66% of those companies have at least one first-generation immigrant founder.[366]

These statistics would be difficult to replicate in Europe, given both its current immigration policies and a culture in which diversity and immigration have not been interwoven into the fabric of society. There are, of course, some examples of immigrant founders of prominent European tech startups—including Nikolay Storonsky and Vlad Yatsenko of Revolut[367] and Adrian Durham of FNZ, both in the fintech sector.[368] At the same

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[361] *Immigrant Founders of the 2017 Fortune 500*, *supra* note 358.

[362] *Id*.

[363] Miriam Jordan & Robert Gebeloff, *Amid Slowdown, Immigration Is Driving U.S. Population Growth*, N.Y. TIMES (Feb. 5, 2022), https://www.nytimes.com/2022/02/05/us/immigration-census-population.html [https://perma.cc/4YG5-J35V].

[364] VIVEK WADHWA, ANNALEE SAXENIAN, BEN RISSING & GARY GEREFFI, DUKE UNIV. & UNIV. OF CAL. BERKELEY, AMERICA'S NEW IMMIGRANT ENTREPRENEURS 4 (Jan. 4, 2007), https://people.ischool.berkeley.edu/~anno/Papers/Americas_new_immigrant_entrepreneurs_I.pdf [https://perma.cc/GZD5-XTNH]. This particular study classified various industries under the umbrella of "engineering and technology": bioscience, computers/communications, defense/aerospace, environmental, innovation/manufacturing-related services, semiconductors, and software.

[365] *Id*. at 5.

[366] TINA HUANG, ZACHARY ARNOLD & REMCO ZWETSLOOT, MOST OF AMERICA'S "MOST PROMISING" AI STARTUPS HAVE IMMIGRANT FOUNDERS 4 (Oct. 2020), https://cset.georgetown.edu/publication/most-of-americas-most-promising-ai-startups-have-immigrant-founders/ [https://perma.cc/GFL4-JHS5].

[367] *See* John Hyatt, *Russian-Born Billionaire Behind Revolut Fintech App Publishes Anti-War Letter*, FORBES (Mar. 4, 2022, 6:26 PM), https://www.forbes.com/sites/johnhyatt/2022/03/01/revoluts-russian-anti-war-billionaire-founder-promises-to-match-donations-to-red-cross-ukraine/?sh=2b3eae4078e4 [https://perma.cc/8CXH-PPDQ]; *Vlad Yatsenko*, FORBES (Apr. 4, 2022), https://www.forbes.com/profile/vlad-yatsenko/?sh=70c448235b86 [https://perma.cc/GDJ9-G9BK].

[368] Rob Stock, *FNZ Was Founded by Kiwi Adrian Durham in 2003. Now It's Worth $3.35 Billion*, STUFF (Oct. 9, 2018, 3:57 PM), https://www.stuff.co.nz/business/money/107727511/fnz-was-founded-by-kiwi-adrian-durham-in-2003-now-its-worth-335-billion [https://perma.cc/A64V-8NYV].

time, it is difficult to obtain directly comparable data on the prevalence of immigrant founders in European tech companies. Some studies, however, do contain information on ethnic background among tech entrepreneurs. While ethnicity is an imperfect proxy for immigrant identity, these studies directionally suggest that the EU is faring considerably worse than the United States in leveraging immigrant talent to fuel tech innovation. For example, one study found that fewer than 13% of European unicorns have at least one founder who is from a minority ethnic background.[369]

Given the absence of extensive data on the immigration status of European tech founders, another way to measure foreign talent and innovation is to focus on inventors and patents, with the caveat that studies typically focus on a few EU member states and not the entire EU. One study suggests that around 11% of inventors aged 25–64 filing patent applications in Sweden were foreign-born.[370] In Germany, 11% of total patents from 1994 to 2018 could be traced to inventors with a migrant background.[371] In comparison, another study found that almost 30% of leading inventors in the United States are foreign-born.[372] The United States also boasts a far higher share of "resident inventors" compared to the EU. A study by the World Intellectual Property Organization found that while 7% of resident U.S. inventors from 1991 to 2010 were foreign nationals, less than 2.9% of resident inventors were foreign nationals in each of the twelve European countries assessed.[373] This same study concluded that the United States is successful in attracting highly productive inventors from countries, and that skilled immigrants prefer the United States.[374]

Immigration contributes to a country's innovation base in various ways. For one, it adds greater diversity to the talent pool, which is widely accepted as a powerful driver of innovation.[375] Europe tends to be less diverse than the

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[369] *State of DEI*, STATE OF EUR. TECH, https://stateofeuropeantech.com/reading-tracks/state-of-diversity [https://perma.cc/E77L-BMBG].

[370] Yannu Zheng & Olof Ejermo, *How Do the Foreign-Born Perform in Inventive Activity? Evidence from Sweden*, 28 J. POPULATION ECON. 659, 670 (2015).

[371] Oliver Koppel & Enno Kohlisch, *Migration and Innovation*, SOC. EUR. (Jun. 1, 2021), https://socialeurope.eu/migration-and-innovation [https://perma.cc/HZS3-4PF3].

[372] Yeonji No & John P Walsh, *The Importance of Foreign-Born Talent for U.S. Innovation*, 28 NATURE BIOTECHNOLOGY 289, 290 (2010).

[373] Stefano Breschi, Francesco Lissoni & Gianluca Tarasconi, *Inventor Data for Research on Migration and Innovation A Survey and a Pilot* 23 tbl.3 (World Intell. Prop. Org., Econ. Rsch. Working Paper No. 17, 2014), https://www.wipo.int/edocs/pubdocs/en/wipo_pub_econstat_wp_17.pdf [https://perma.cc/25QJ-MV5D].

[374] *Id.* at 26.

[375] *See, e.g.*, Sylvia Ann Hewlett, Melinda Marshall & Laura Sherbin, *How Diversity Can Drive Innovation*, HARV. BUS. REV. (Dec. 2013), https://hbr.org/2013/12/how-diversity-can-drive-innovation

United States, a limitation which remains true among corporations, including tech startups.[376] Immigration also increases the number of skilled workers available for the local economy. These highly skilled workers serve as major catalysts for expanding knowledge, business ventures, and other innovative initiatives.[377] European companies draw on a smaller skilled-labor workforce, in part because of the presence of fewer skilled immigrants in Europe. According to a 2019 study, only 25% of immigrants to Europe are highly educated, compared to 36% of immigrants who migrate to other OECD countries.[378] These numbers track closely to the difference between the entry of new immigrants into strongly growing occupations in the United States and the EU, including in the STEM field.[379]

The EU is not only struggling to attract migrants to its tech sector but is also losing European talent to the United States. There are numerous examples of European tech entrepreneurs relocating to the United States to start a business or to grow it there, contributing to a significant brain drain that deepens the U.S.–EU technology gap. Some examples of talent migration away from the EU to the United States include payment platform Stripe (valued at $95 billion) whose founders John and Patrick Collison grew up in Ireland but left their home country to attend college in the United States before founding Stripe in San Francisco in 2010.[380] Daniel Dines and Marius Tîrcă, the founders of business automation platform UiPath (valued at $7.6 billion), founded their company in Bucharest, Romania in 2005 before

[https://perma.cc/893G-YQE3]; Stuart R. Levine, *Diversity Confirmed to Boost Innovation and Financial Results*, FORBES (Apr. 14, 2022, 7:03 AM), https://www.forbes.com/sites/forbesinsights/2020/01/15/diversity-confirmed-to-boost-innovation-and-financial-results/?sh=24477ec9c4a6 [http://perma.cc/C3F2-9FK2]; Beth Stackpole, *Location Matters as Companies Get Their Innovation Mojo Back*, MIT MGMT. SLOAN SCH. (Sept. 14, 2021), https://mitsloan.mit.edu/ideas-made-to-matter/location-matters-companies-get-their-innovation-mojo-back [https://perma.cc/TW46-8LWT].

376 *See* ATOMICO & SLUSH, THE STATE OF EUROPEAN TECH 2021, at 151–52 (2021).

377 Martin Kahance & Klaus F. Zimmermann, *Migration in an Enlarged EU A Challenging Solution?* 25 (Eur. Comm'n, Econ. Paper No. 363, 2009) (citing Etienne Wasmer, Peter Fredriksson, Ana Lamo, Julián Messina & Giovanni Peri, *The Macroeconomics of Education*, *in* EDUCATION AND TRAINING IN EUROPE (Giorgio Brunello, Pietro Garibaldi & Etienne Wasmer eds., 2007)), https://ec.europa.eu/economy_finance/publications/pages/publication14287_en.pdf [https://perma.cc/98PP-CJZJ].

378 BUGHIN ET AL., *supra* note 256, at 21.

379 *See* OECD, IS MIGRATION GOOD FOR THE ECONOMY? 2 (May 2014), https://www.gfmd.org/sites/g/files/tmzbdl1801/files/documents/gfmd_turkey2014-2015_tm2_contribution_oecd2.pdf [https://perma.cc/P3H8-RYDC] (detailing how immigrants comprise just 15% of entries into strongly growing occupations compared to 22% within the United States).

380 Alex Konrad, *The Collison Brothers Built Stripe into a $95 Billion Unicorn with Eye-Popping Financials. Inside Their Plan to Stay on Top*, FORBES (May 26, 2022, 6:30 AM), https://www.forbes.com/sites/alexkonrad/2022/05/26/stripe-exclusive-interview-collison-brothers-95-billion-plan-to-stay-on-top/?sh=7909f9d95a1b [https://perma.cc/89M8-SYES].

moving its headquarters to New York in 2017.[381] The cofounder and CEO Ali Ghodsi of Databricks—a data analytics and AI platform (valued at $28 billion)—left Sweden in 2009 to attend UC Berkeley as a visiting scholar.[382] Ghodsi's plan was to stay in the United States for a year, but he ended up cofounding Databricks in San Francisco in 2013 and never returned to Sweden.[383]

There are various ways to measure the extent of the brain drain from the EU to the United States beyond these individual anecdotes. One recent study shows that while top-tier AI researchers overwhelmingly work in U.S. institutions—42% of the talent pool in 2022 was U.S.-based while 12% was Europe-based—this U.S.-based talent is only partially homegrown.[384] Over half of the top-tier AI researchers in the United States are immigrants or foreign nationals, and includes researchers who earned their undergraduate degree in Europe. This suggests that the world's top AI researchers, including top European AI researchers, are migrating to the United States and rarely the other way around.

These and other studies confirm that the EU is losing talent to the United States, limiting the pool from which tech companies can hire in the EU while further increasing the talent pool available for U.S. tech companies.[385] There are several reasons why researchers and tech entrepreneurs often prefer the United States to the EU. One reason is the attractiveness of U.S. universities that can act as a gateway to the U.S. labor market.[386] The United States' world-class universities are a major draw for foreign talent. According to the 2021 Times Higher Education World University Rankings, only six universities in the EU are listed among the top fifty universities in the world, with the highest ranked number thirty-two. In

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[381] Elena Vrabie, *UiPath Writes European History with the Third Biggest New York Software IPO*, RECURSIVE (Apr. 23, 2021), https://therecursive.com/uipath-writes-european-history-with-the-third-biggest-new-york-software-ipo/ [https://perma.cc/P9LZ-L958].

[382] *Getting Around "Moore's Wall" Databricks CEO Ali Ghodsi Strives to Make AI More Accessible to the Fortune 2000*, DATABRICKS (Aug. 22, 2017), https://www.databricks.com/blog/2017/08/22/getting-around-moores-wall-databricks-ceo-ali-ghodsi-strives-to-make-ai-more-accessible-to-the-fortune-2000.html [https://perma.cc/J3D3-2VUQ].

[383] *Id.*; Kenrick Cai, *Accidental Billionaires How Seven Academics Who Didn't Want to Make a Cent Are Now Worth Billions*, FORBES (May 27, 2021, 6:30 AM), https://www.forbes.com/sites/kenrickcai/2021/05/26/accidental-billionaires-databricks-ceo-ali-ghodsi-seven-berkeley-academics/?sh=7677be377008 [https://perma.cc/6JJF-8SWX].

[384] *See The Global AI Talent Tracker 2.0*, MACROPOLO, https://macropolo.org/digital-projects/the-global-ai-talent-tracker/ [https://perma.cc/VH9H-6EAL].

[385] *See generally* Jawaria Khan, *European Academic Brain Drain A Meta-Synthesis*, 56 EUR. J. EDUC. 265 (2021) (discussing the broader brain drain issue in Europe).

[386] *See* INST. OF INT'L EDUC., A QUICK LOOK AT GLOBAL MOBILITY TRENDS (2020), https://iie.widen.net/s/g2bqxwkwqv/project-atlas-infographics-2020 [https://perma.cc/C54X-9483] (showing high numbers of study-abroad students in the United States).

contrast, the same list features twenty-three U.S. universities.[387] Strikingly, in the 2016–2017 school year, 54% of master's degrees and 44% of doctorate degrees in STEM fields issued by U.S. universities were earned by foreign students.[388] Many foreign students stay in the United States after graduating, subsequently contributing to the U.S. talent base in the labor market. A 2018 report by the National Science Foundation revealed that 70% of foreign-born, noncitizen science and engineering doctoral students in the United States remain in the country after graduating.[389] The *Forbes* list of the fifty most promising North American AI startups similarly points to U.S. universities as an important entryway for highly skilled immigrants. Of those highly successful first-generation immigrant AI startup founders, 72% came to the United States to pursue higher education.[390]

European universities also have weaker links to startup ecosystems compared to those in the United States, making them less attractive destinations for aspiring tech entrepreneurs. Academic entrepreneurship is culturally discouraged in Europe.[391] It is also less financially rewarding to launch a business on a European university campus. European universities frequently demand an equity share of 25% upon the founding of a company; some institutions asking for as much as 50%. In comparison, the technology transfer offices at American institutions such as MIT or Stanford rarely demand more than 10%. The European universities also often engage in highly bureaucratic negotiations over intellectual property rights with founders.[392] These reasons, in part, explain the scarcity of tech companies emanating from university campuses in the EU. According to one study, only 4 of the 116 VC-backed European unicorns are university spinouts.[393] This closer collaboration between universities and the private sector in the United

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[387] *World University Rankings 2022*, TIMES HIGHER EDUC., http://www.timeshighereducation.com/world-university-rankings/2022/world-ranking#!/page/0/length/25/sort_by/rank/sort_order/asc/cols/stats [https://perma.cc/7H6K-GH7V].

[388] BORIS GRANOVSKIY & JILL H. WILSON, CONG. RSCH. SERV., IF11347, FOREIGN STEM STUDENTS IN THE UNITED STATES (Nov. 1, 2019), https://crsreports.congress.gov/product/pdf/IF/IF11347 [https://perma.cc/92WV-NDFX].

[389] *See* MICHAEL G. FINN & LEIGH ANN PENNINGTON, STAY RATES OF FOREIGN DOCTORATE RECIPIENTS FROM U.S. UNIVERSITIES, 2013, at 3, 4 tbl.4 (Jan. 2018), https://orise.orau.gov/stem/reports/stay-rates-foreign-doctorate-recipients-2013.pdf [https://perma.cc/7S45-R4X5].

[390] HUANG ET AL., *supra* note 366, at 4.

[391] Nathan Benaich, *Universities in the UK and Europe Have a Start-Up Problem*, FIN. TIMES (May 10, 2021), https://www.ft.com/content/fd038300-f09a-4afc-9f7d-c0e3d6965243 [https://perma.cc/376L-UR96]. However, some suggest that this attitude may be changing. *See Tech Investors Can't Get Enough of Europe's Fizzing Startup Scene*, ECONOMIST (Nov. 22, 2021), https://www.economist.com/business/tech-investors-cant-get-enough-of-europes-fizzing-startup-scene/21806435 [https://perma.cc/F7DB-3QAG].

[392] Benaich, *supra* note 391.

[393] *Id.*

States also explains, in part, why the United States has excelled in translating scientific research into commercial applications.[394]

In addition to the United States' renowned and entrepreneurship-friendly universities, foreign talent prefers the United States because of the robust financial rewards available. A 2017 study by European VC firm Index Ventures found that most of the studied EU countries' stock-option rules lagged behind those in the United States.[395] The same study reveals that startup employees in the United States receive up to 20% of stock options available at a firm, which is double the amount of employee stock options available at EU startups.[396] There are several reasons for this U.S.–EU compensation gap, one being fragmented tax legislation governing stock options across EU member states. Many EU countries have laws that discourage the awarding and holding of stock options. These include German tax laws that impose a tax liability from the moment that the stock options are granted.[397] European tech startups are aware of this limitation. In 2019, over 700 chief executives from European startups, joined by European VC investors, signed an open letter to European policymakers, urging them to overhaul regulations governing employee stock options so that EU tech firms can more effectively attract talent and thereby better compete with Silicon Valley.[398] There is also some evidence that European companies are now moving toward adopting more generous stock options policies to attract and retain talent, but it is unclear how much any such shift will contribute toward closing the U.S.–EU innovation gap.[399]

European leaders are also aware that the EU has attracted less foreign talent than the United States and some other countries, such as Australia and Canada. Those countries have put in place immigration policies that are "consciously tailored to attract and retain international talent."[400] At the same time, many EU countries have strict immigration laws that make it difficult

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394 *See* O'MARA, *supra* note 315.

395 *See Rewarding Talent The Founder's Guide to Stock Options*, INDEX VENTURES: REWARDING TALENT, https://www.indexventures.com/rewardingtalent/handbook [https://perma.cc/T98D-KNU4].

396 Katia Moskvitch, *Europe's Stock Options Muddle Is Handing America a Big Advantage*, WIRED (Nov. 28, 2018, 1:00 AM), https://www.wired.co.uk/article/europe-startups-open-letter-governments [https://perma.cc/CBK9-NP6G].

397 Iain Martin, *European Startups Start to Close the Gap with Silicon Valley on Staff Equity*, FORBES (Dec. 2, 2021, 1:46 AM), https://www.forbes.com/sites/iainmartin/2021/12/02/european-startups-start-to-close-the-gap-with-silicon-valley-on-staff-equity/?sh=1755994c14d3 [http://perma.cc/43YA-VH38].

398 *See Not Optional—Europe Must Attract More Talent to Startups*, NOT OPTIONAL, https://www.notoptional.eu/en/letter [https://perma.cc/DLC4-AQWY].

399 Martin, *supra* note 397. According to a recent study, European startups are now handing 15–17% of equity to employees, up from roughly 10% around 2017.

400 Khan, *supra* note 385, at 274–75.

to attract talent to Europe.[401] These laws reflect, in part, the political influence of populist movements that maintain hostile attitudes toward migrants in general.[402] Despite these headwinds, the EU has sought to create a path for highly skilled migrants to enter the European labor market. However, there is no unified visa scheme for non-EU nationals that allows an individual to enter the EU and move freely across the twenty-seven member states. The EU has its rival to the American H-1B visa—known as the Blue Card—designed to bring highly skilled workers to Europe and vest them with the right to move freely in the Schengen area. However, the Blue Card system has suffered from high salary thresholds and fragmentation across member states in interpreting the rules underlying the system.[403] In 2021, the EU sought to revamp the Blue Card program to better attract highly skilled workers by adjusting salary thresholds, qualification requirements, and offering more generous family reunification policies.[404] However, there is much more the EU needs to do to attract and retain the best minds and thereby ensure that its tech sector has access to the human capital that, in the end, is at the foundation for every successful tech company.

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The above discussion has identified variables other than tech regulation that go a long way in explaining why today's tech giants hail from the United States and not from the EU. The U.S. tech companies have benefited from a large and integrated home market that has allowed them to scale better than their European counterparts. They have had access to a deeper pool of risk capital that has funded their innovations. U.S. firms have also been more willing to take risks and pursue more disruptive innovations without the burdens imposed by punitive bankruptcy laws and a culture that does not tolerate business failure. Finally, U.S. tech firms have unparalleled access to global talent, which has allowed them to draw on a diverse and large pool of human capital that contributes to greater dynamism and innovation.

It also seems that, contrary to tech regulations such as antitrust and data privacy, the four variables outlined above all have a more straightforward relationship to innovation. It is hard to argue that a fragmented single market is anything but an impediment to the scaling of tech companies. In the same

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401 *Id.*

402 Joanna Plucinska & Saim Saeed, *Europe Struggles to Attract Tech Talent Even as US Closes Doors*, POLITICO (July 14, 2017, 10:00 AM), https://www.politico.eu/article/why-europe-still-lacks-silicon-valleys-sex-appeal/ [https://perma.cc/292N-7TYN].

403 *Id.*

404 European Commission Press Release IP/21/2522, EU Blue Card: Commission Welcomes Political Agreement on New Rules for Highly Skilled Migrant Workers (May 17, 2021), https://ec.europa.eu/commission/presscorner/detail/es/ip_21_2522 [https://perma.cc/7RC2-WLDV].

way, access to deep pools of capital tends to support innovation, as does entrepreneurship-friendly bankruptcy laws that encourage risk-taking and give tech entrepreneurs a second chance if they fail. Diversity and access to talent from around the world is also a boon to tech companies that depend on human capital.

Of course, some arguments can be advanced to the contrary. For example, some studies have suggested that the more constraining fundraising environment in Europe results in the EU's startups having a lower "burn rate," which may serve them well during periods when funding is less readily available.[405] Similarly, American bankruptcy laws can, of course, be criticized as encouraging reckless risk-taking, which—coupled with a risk-seeking VC industry—can lead to spectacular failures as shown by the sudden fall from grace of companies such as the healthcare company Theranos or the cryptocurrency exchange FTX Trading.[406] However, in general, the factors identified above do not cut both ways; rather, they can clearly be seen as hindering innovation in Europe due to their absence and nurturing innovation in the United States thanks to their presence.

These factors are not presented as a comprehensive explanation of the U.S.–EU technology gap, and there are likely other reasons that play a part as well. These include more flexible labor markets in the United States compared to the EU, which helps reallocate and reskill labor in the face of economic downturn or technological disruption.[407] For example, in the wake of the advances in generative AI, U.S. tech firms moved quickly to reallocate resources toward AI development, abandoning existing projects and laying off thousands of workers in the process.[408] Inflexible labor laws in Europe make it more difficult for tech companies to reduce employee costs and pursue necessary restructuring, making them less agile compared to their American counterparts.[409] The hurdles in terminating employment contracts are likely to make EU startups more cautious in offering their employees generous salaries and stock options, which accentuates existing talent

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405 *Are EU Startups Built to Last?*, INT'L FIN. (Apr. 20, 2023), https://internationalfinance.com/are-eu-startups-built-to-last/ [https://perma.cc/G9V4-XH7T].

406 Robert Burgess & Chris Hughes, *FTX Benefited from Venture Capitalists' Suspension of Disbelief*, BLOOMBERG (Dec. 5, 2022, 6:00 AM), https://www.bloomberg.com/opinion/articles/2022-12-05/venture-capital-was-complicit-in-the-collapse-of-ftx [https://perma.cc/MT5J-94Y8].

407 SMIT ET AL., *supra* note 14, at 97.

408 Yann Coatanlem, *Why Europe Is a Laggard in Tech*, FIN. TIMES (Feb. 26, 2024), https://www.ft.com/content/d4fda2ec-91cd-4a13-a058-e6718ec38dd1?shareType=nongift [https://perma.cc/P6NN-GC4J].

409 Murat Tasci & Mary Zenker, *Labor Market Rigidity, Unemployment, and the Great Recession*, FED. RSRV. BANK CLEVELAND (June 29, 2011), https://www.clevelandfed.org/publications/economic-commentary/2011/ec-201111-labor-market-rigidity-unemployment-and-the-great-recession [https://perma.cc/8MJR-RMGU].

acquisition problems.[410] Talent also moves without restrictions in Silicon Valley as California does not enforce noncompete clauses,[411] which facilitates knowledge spillovers across tech firms and sustains the culture of dynamic innovation.[412] In contrast, several EU member states recognize noncompete clauses, which hinder labor mobility in Europe.[413] Compared to their European counterparts, U.S. startups also typically grow as part of a more established tech ecosystem—such as Silicon Valley—where the clustering of research, talent, and capital leads to knowledge spillovers and other benefits.[414] However, all of these other variables point to the same conclusion: the perceived causal relationship between stringent tech regulation and the weak performance of a tech industry is just that—a perception, not a reality.

Of course, identifying these alternative explanations does not support an argument that *all* European tech regulation would enhance welfare and that digital regulations could never adversely affect innovation and slow down technological progress, as was shown in Part II. But it does challenge any simplistic and categorical argument that lays the blame of the EU's relative struggles in the global tech race on tech regulation alone. It similarly cautions against a blunt narrative that suggests that any tech regulation, enacted by the United States or another jurisdiction, would inevitably compromise technological and economic progress. This realization should clear the way for a more productive discussion of what optimal tech regulation looks like and what kinds of innovation such regulation ought to promote.

CONCLUSION

This Article has sought to dispel the common view that digital regulation is inherently detrimental to innovation and technological progress. It has argued that governments do not face an inevitable trade-off between protecting digital rights and pursuing economic growth. In doing so, this

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[410] Mark Minevich, *Can Europe Dominate in Innovation Despite US Big Tech Lead?*, FORBES (Dec. 3, 2021, 11:41 AM), https://www.forbes.com/sites/markminevich/2021/12/03/can-europe-dominate-in-innovation-despite-us-big-tech-lead/?sh=7db749211d75 [https://perma.cc/4EYB-NMQD].

[411] *See* CAL. BUS. & PROF. CODE § 16600(a) (West 2024) ("[E]very contract by which anyone is restrained from engaging in a lawful profession, trade, or business of any kind is to that extent void.").

[412] *See generally* Gilson, *supra* note 293, at 602–13 (discussing how the nonenforcement of noncompete clauses in California promotes employee mobility and knowledge transfer, contributing to Silicon Valley's innovative environment).

[413] Nuna Zekić, *Non-Compete Clauses and Worker Mobility in the EU*, GLOB. WORKPLACE L. & POL'Y (Nov. 30, 2022), https://global-workplace-law-and-policy.kluwerlawonline.com/2022/11/30/non-compete-clauses-and-worker-mobility-in-the-eu [https://perma.cc/DC8E-53EQ].

[414] William R. Kerr & Frederic Robert-Nicoud, *Tech Clusters*, 34 J. ECON. PERSP. 50, 51 (2020).

Article has challenged the simplistic argument that American tech companies are successful because they do not face burdensome digital regulations at home, whereas European tech companies are unsuccessful because they are burdened by costly European digital regulations. Instead, the discussion has shown that regulations affect tech companies' incentives to innovate in intricate ways, creating both costs and benefits for these companies.

Any conversation about technological innovations must correctly identify the causes that cultivate or impede those innovations. Digital regulation is not immaterial, but technological innovation is ultimately a product of fundamental forces such as long-term investments in education, carefully designed industrial policy, and incentives for investment and entrepreneurship. That Google was founded in the United States as opposed to Europe owes only so much to the fact that the United States has not extensively regulated data privacy or that it has maintained a liability shield on content moderation. Today's tech giants emerged in the United States predominantly because of factors such as thriving American capital markets and an entrepreneurial culture that is amenable to risk-taking. They have also benefited from access to diverse talent—which sustains the American culture of disruptive innovation—and taken advantage of a large home market, which is not fragmented by different laws, languages, cultures, consumer preferences, or different channels for marketing and distribution.[415] It is therefore one-dimensional to argue that digital regulation (or its absence) determines the fortunes of a country's tech industry. U.S. tech success owes more to a combination of factors that would remain untouched and unharmed even if the government adopted a federal privacy law or set limitations on online hate speech.

The primary objective of this Article is to redirect the scholarly inquiry toward a broad set of economic, legal, and cultural attributes that make up the digital economy. But the discussion also provides important lessons for governments, including for the EU and the United States. In dispelling the notion that tech regulation inevitably curtails technological innovation, the Article offers an implicit defense of the EU's ambitious digital regulatory agenda. At the same time, it urges the EU to rethink a variety of other laws and policies that have, to date, thwarted European technological progress. To close the technology gap between the EU and the United States, the EU does not need to repeal the GDPR or refrain from implementing the recently enacted AI regulation. Instead, the EU should channel its policy ambition toward completing the digital single market, creating a genuine capital

[415] SMIT ET AL., *supra* note 14, v.

markets union, harmonizing member states' bankruptcy regimes, and viewing immigration as an opportunity for Europe's technological progress and economic growth. There is no doubt that the EU has much ground to cover in catching up to the United States' technology sectors, but abandoning digital regulation is not what will get the EU there.

Of course, not all digital regulation is beneficial, but neither is all innovation. While many techno-optimists herald the revolutionary nature of digital technologies, others question whether today's leading tech companies are producing truly welfare-enhancing innovations that are leading to meaningful technological progress and economic growth or enhancing the human experience.[416] A growing number of technologists, investors, journalists, and politicians are criticizing tech companies' business models that rely on the exploitation of internet users' data, asking whether those digital services ought to be considered "innovations" that are worth shielding from regulation.[417] In reassessing tech regulation, the EU should therefore think more carefully about innovation, including what kind of innovation its tech regulation ought to advance. This includes the EU asking whether it even wants to nurture a "European Google" if doing so embraces a business

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[416] *See generally* ROBERT J. GORDON, THE RISE AND FALL OF AMERICAN GROWTH (2016) (challenging the overly optimistic arguments about the benefits of digitalization to productivity growth and arguing that historical economic growth is not repeatable in light of modern societal and human barriers); Greg Ip, *As Big Tech's Growth and Innovation Slow, Its Market Dominance Endures*, WALL ST. J. (Feb. 8, 2023, 2:27 PM), https://www.wsj.com/articles/as-big-techs-growth-and-innovation-slow-its-market-dominance-endures-11675871487 [https://perma.cc/Y6G4-7W3U]; LEE VINSEL & ANDREW L. RUSSELL, THE INNOVATION DELUSION: HOW OUR OBSESSION WITH THE NEW HAS DISRUPTED THE WORK THAT MATTERS MOST (2020) (arguing that modern innovations' negative impact on societal welfare and safety has actually hindered economic growth).

[417] Pascal-Emmanuel Gobry, *Facebook Investor Wants Flying Cars, Not 140 Characters*, BUS. INSIDER (July 30, 2011, 9:38 AM), https://www.businessinsider.com/founders-fund-the-future-2011-7 [https://perma.cc/X6V6-UPUP]) ("We wanted flying cars, instead we got 140 characters."); *2020 Letter*, DAN WANG (Jan. 1, 2021), https://danwang.co/ [https://perma.cc/TTY2-CJVC] ("I've never stopped lamenting the marketing trick that California pulled off to situate consumer internet as the highest form of technology, as if Tencent and Facebook are the surest signs that we live a technologically-accelerating civilization."); Josh Hawley, Opinion, *Big Tech's Innovations' that Aren't*, WALL ST. J. (Aug. 28, 2019, 7:01 PM), https://www.wsj.com/articles/big-techs-innovations-that-arent-11567033288 [https://perma.cc/2QG6-UHR8] (pointing out the distance between the American innovations of the past era—such as sending a man to the moon fifty years ago—and today's innovations, which, according to Hawley, consist of exploitation of people rather than innovating new and better products); Press Release, Elizabeth Warren, Sen., U.S. Senate, Warren Delivers Remarks at Freedom from Facebook and Google: Break Up Big Tech (May 27, 2021), https://www.warren.senate.gov/newsroom/press-releases/warren-delivers-remarks-at-freedom-from-facebook-and-google-break-up-big-tech [https://perma.cc/HM2L-C9QG] ("Today's Big Tech companies have grown so giant and so powerful that they threaten our economy, our society, and our very democracy. They have bulldozed competition, used private information for profit, and tilted the playing field against everyone else."); Ip, *supra* note 416 (describing how U.S. tech companies used to be "big, fast-growing, and ferociously innovative" but how today, "they are mostly just big").

model that is based on extracting user data in ways that contradict the EU's steadfast commitment to protect European citizens from such exploitation.

This Article offers lessons for the United States or any other government considering greater government oversight of its tech industry. If the policymakers and various stakeholders in the United States understand that the country's technological progress and culture of innovation are not tied to its lax regulatory approach, they are likely to feel more comfortable pursuing regulatory reforms that the American people have increasingly come to support. This Article has argued that any adjustment in the United States toward the European regulatory regime—or the widespread emulation of that regime across the world more generally—would not, as a rule, set the United States back in terms of innovation. Protecting internet users' data privacy, regulating tech giants' anticompetitive behavior, calling for more platform accountability over harmful online content, or insisting on ethical AI development would not dismantle the dynamic capital markets in the United States, repeal its entrepreneurship-friendly bankruptcy laws, or discourage global tech talent from migrating to the country.

In addition to seeking to guide the regulatory choices in the EU and the United States, this Article provides a roadmap for other governments that frequently emulate leading economies in designing their regulatory regimes. A closer examination of the American and European legal regimes and tech ecosystems suggests that when it comes to regulating the digital economy, these countries may be well served by adopting some of the rights-protective regulatory policies promoted by the EU. However, when it comes to capital markets, insolvency laws, the entrepreneurial culture of risk-taking, and attracting global innovative talent, these countries should rather turn to the United States. These two regulatory regimes should not be viewed as alternatives, but instead as complementary digital ecosystems whose best features foreign governments can emulate and pursue in tandem. There is no need for governments to set up a false choice between tech regulation and tech innovation when it is possible for them to have both.

Police secretly monitored New Orleans with facial recognition cameras

washingtonpost.com/business/2025/05/19/live-facial-recognition-police-new-orleans

Douglas MacMillan, Aaron Schaffer May 19, 2025

Exclusive

Following records requests from The Post, officials paused the first known, widespread live facial recognition program used by police in the United States.

18 min

A Project NOLA security camera keeps watch over the corner of Conti and Burgundy streets in New Orleans on May 8. (Edmund D. Fountain/For The Washington Post)

By Douglas MacMillan
and
Aaron Schaffer

NEW ORLEANS — For two years, New Orleans police secretly relied on facial recognition technology to scan city streets in search of suspects, a surveillance method without a known precedent in any major American city that may violate municipal guardrails around use of the technology, an investigation by The Washington Post has found.

Police increasingly use facial recognition software to identify unknown culprits from still images, usually taken by surveillance cameras at or near the scene of a crime. New Orleans police took this technology a step further, utilizing a private network of more than 200 facial recognition cameras to watch over the streets, constantly monitoring for wanted suspects and automatically pinging officers' mobile phones through an app to convey the names and currentlocations of possible matches.

This appears out of step with a 2022 city council ordinance, which limited police to using facial recognition only for searches of specific suspects in their investigations of violent crimes and never as a more generalized "surveillance tool" for tracking people in public places. Each time police want to scan a face, the ordinance requires them to send a still image to trained examiners at a state facility and later provide details about these scans in reports to the city council — guardrails meant to protect the public's privacy and prevent software errors from leading to wrongful arrests.

Since early 2023, the network of facial recognition cameras hasplayed a role in dozens of arrests, including at least four people who were only charged with nonviolent crimes, according to police reports, court records and social media postsby Project NOLA, a crime preventionnonprofit company that buys and manages many of the cameras. Officers did not disclose their reliance on facial recognition matches in police reports for most of the arrests for which the policeprovideddetailed records, and none of the cases were included in the department's mandatory reports to the city council on its use of the technology. Project NOLA has no formal contract with the city, but has been working directly with police officers.

"This is the facial recognition technology nightmare scenario that we have been worried about," said Nathan Freed Wessler, a deputy director with the ACLU's Speech, Privacy, and Technology Project, who has closely tracked the use of AI technologies by police. "This is the government giving itself the power to track anyone — for that matter, everyone — as we go about our lives walking around in public."

New Orleans Police Superintendent Anne Kirkpatrick during an interview this month. (Edmund D. Fountain/For The Washington Post)

Anne Kirkpatrick, who heads the New Orleans Police Department, paused the program in early April, she said in an interview, after a captain identified the alerts as a potential problem during a review. In an April 8 email reviewed by The Post, Kirkpatrick told Project NOLA that the automated alerts must be turned off until she is “sure that the use of the app meets all the requirements of the law and policies.” The Post began requesting public records about the alerts in February.

The police department “does not own, rely on, manage, or condone the use by members of the department of any artificial intelligence systems associated with the vast network of Project Nola crime cameras,” Reese Harper, a spokesman for the agency, said in an emailed statement.

Police across the country rely on facial recognition software, which uses artificial intelligence to quickly map the physical features of a face in one image and compare it to the faces in huge databases of images — usually drawn from mug shots, driver’s licenses or photos on social media — looking for possible matches. New Orleans’s use of automated facial recognition has not been previously reported and is the first known widespread effort by police in a major U.S. city to use AI to identify people in live camera feeds for the purpose of making immediate arrests, Wessler said.

The Post has reported that some police agencies use AI-powered facial recognition software in violation of local laws, discarding traditional investigative standards and putting innocent people at risk. Police at timesarrested suspects based onAI matches without independent evidence connecting them to the crime, raising the chances of a false arrest. Often, policefailed to inform defendants about their use of facial recognition software, denying them the opportunity to contest the results of a technology that has been shown to be less reliable for people of color, women and older people.

One of the few places where live facial recognition is known to be in wide use is London, where police park vans outside of high-traffic areas and use facial recognition-equipped cameras to scan the faces of passersby, and confront people deemed a match to those on a watch list. While the city says the program has never led to a false arrest since launching in 2016, Big Brother Watch, a London-based civil liberties group, argues that the practice treats everyone as a potential suspect, putting the onus on the people who were falsely matched to prove their innocence.

The surveillance program in New Orleans relied on Project NOLA, a private group run by a former police officer who assembled a network of cameras outside of businesses in crime-heavy areasincluding the city's French Quarter district.

Project NOLA configured the cameras to search for people on a list of wanted suspects. When the software determined it had found a match, it sent real-time alerts via an app some officers installed on their mobile phones. The officers would then quickly research the subject, go to the location and attempt to make arrests.

Police did not set up the program nor can they directly search for specific people, or add or remove people from the camera system's watch list,according to Bryan Lagarde, Project NOLA's founder.

Little about this arrangement resembles the process described in the city council ordinance from three years ago, which imagined detectives using facial recognition software only as part of methodical investigations with careful oversight. Each time police want to scan a face, the ordinance requires them to send a still image to a state-run "fusion center" in Baton Rouge, where various law enforcement agencies collaborate on investigations. There, examiners trained in identifying faces use AI software to compare the image with a database of photos and only return a "match" if at least two examiners agree.

Investigators have complained that process takes too long and often doesn't result in any matches, according to a federally mandated audit of the department in 2023. It has only proved useful in a single case that led to an arrest since October 2022, according to records police provided to the city council.

By contrast, Project NOLA claims its facial recognition cameras played a role in at least 34 arrests since they were activated in early 2023, according to the group's Facebook posts — a number that cannot be verified because the city does not track such data and the nonprofit does not publish a full accounting of its cases. Without a list of the cases, it's impossible to know whether any of the people were misidentified or what additional steps the officers took to confirm their involvement in the crimes.

Kirkpatrick said her agency has launched a formal review into how many officers used the real-time alerts, how many people were arrested as a result, how often the matches appear to have been wrong and whether these uses violated the city ordinance.

"We're going to do what the ordinance says and the policies say, and if we find that we're outside of those things, we're going to stop it, correct it and get within the boundaries of the ordinance," she said.

There are no federal regulations around the use of AI by local law enforcement. Four states — Maryland, Montana, Vermont and Virginia — as well as at least 19 cities in nine other states explicitly bar their own police from using facial recognition for live, automated or real-time identification or tracking, according to the Security Industry Association, a trade group.

Lawmakers in these places cited concerns in public meetings that the technology could infringe on people's constitutional rights or lead police to make mistakes when they rush to arrest a potential suspect before taking steps to confirm their connection to the crime, as many people look alike. At least eight Americans have been wrongfully arrested due to facial recognition, The Post and others have reported.

The unsanctioned surveillance program in New Orleans highlights the challenge of regulating a technology that is widely available, at a time when some police see AI as an invaluable crime fighting tool. Even in some places where officials have banned facial recognition, including Austin and San Francisco, officers skirted the bans by covertly asking officers from neighboring towns to run AI searches on their behalf, The Post reported last year.

Violent crime rates in New Orleans, like much of the country, are at historic lows, according to Jeff Asher, a consultant who tracks crime statistics in the region. But city officials have seized on recent instances of violent crime to argue that police need the most powerful tools at their disposal.

> Cool shot from a Project NOLA Drone of a Project NOLA Mobile Camera Trailer helping to secure UNO's annual Parade this...
>
> Posted by ProjectNOLA on Tuesday, February 25, 2025

Last month, an independent report commissioned after the New Year's Day attack that left 14 people dead on Bourbon Street found the New Orleans police to be understaffed and underprepared. The report, overseen by former New York City police commissioner William Bratton, advised New Orleans to explore adopting several new tools, including drones, threat prediction systems and upgrades to the city's real-time crime center — but did not recommend adding any form of facial recognition.

Kirkpatrick, the city's top police official, and Jason Williams, its top prosecutor, both said they are in discussions with the city council to revise the facial recognition ordinance. Kirkpatrick says she supports the idea of the city legally operating its own live facial recognition program, without the involvement of Project NOLA and with certain boundaries, such as prohibiting use of the technology to identify people at a protest.

"Can you have the technology without violating and surveilling?" she asked. "Yes, you can. And that's what we're advocating for."

Few people have as much visibility into the everyday lives of New Orleans residents as Lagarde, a former patrol officer and investigator who started his own video surveillance business in the late 1990s before launching Project NOLA in 2009.

Funded by donations and reliant on businesses that agree to host the cameras on their buildings or connect existing surveillance cameras toits centralized network,Lagarde saidProject NOLA has access to 5,000 crime cameras across New Orleans, most of which are not equipped with facial recognition. The cameras all feed into a single control room in a leased office space on the University of New Orleans campus, Lagarde said in an interview at the facility. Some camera feeds are also monitored by federal, state and local law enforcement agencies, he said.

Project NOLA made $806,724 in revenue in 2023, tax filings show. Much of it came from "cloud fees" the group charges local governments outside of New Orleans — from Monticello, Florida, to Frederick, Colorado — which install Project NOLA cameras across their own towns and rely onLagarde's assistance monitoring crime. He's experimented with facial recognition in Mississippi, he said, but his "first instance of doing citywide facial recognition is New Orleans." New Orleans does not pay Project NOLA.

For more than a decade,Lagarde used standard cameras outside businesses to monitor crime and offer surveillance clips for officers to use in their investigations. Lagarde's cameras became so widespread that police began calling him when they spotted a Project NOLA camera hovering near a crime scene they were investigating, according to police incident reports, interviews with police and emails obtained through a public records request.

Lagarde began adding facial recognition cameras to his network in early 2023, after an $87,000 bequest from a local woman. Lagarde used the money to buy a batch of cameras capable of detecting people from about 700 feet away and automatically matching them to

the facial features, physical characteristics and even the clothing of people in a database of names and faces he has compiled.

Lagarde says he built his database partly from mug shots from local law enforcement agencies.It includes more than 30,000 “local suspected and known criminals,” Project NOLA wrote on Facebook in 2023. Lagarde can quickly identify anyone in the database the moment they step in front of a Project NOLA camera, he said. He can also enter a name or image to pull up all the video clips of that person Project NOLA captured within the last 30 days, after which Lagarde says videos get automatically deleted“for privacy reasons.”

Project NOLA found enthusiastic partners in local business owners, some of who were fed up with what they saw as the city’s inability to curb crime in the French Quarter — the engine of its tourism economy that’s also a hub for drug dealers and thieves who prey on tourists, said Tim Blake, the owner of Three Legged Dog, a bar that was one of the first places to host one of Project NOLA’s facial recognition cameras.

“Project NOLA would not exist if the government had done its job,” Blake said.

While Lagarde sometimes appears alongside city officials at news conferences announcing prominent arrests, he is not a New Orleans government employee or contractor. Therefore, Lagarde and the organization are not required to share information about facial recognition matches that could be critical evidence in the courtroom, said Danny Engelberg, the chief public defender for New Orleans.

“When you make this a private entity, all those guardrails that are supposed to be in place for law enforcement and prosecution are no longer there, and we don’t have the tools to do what we do, which is hold people accountable,” he said.

Lagarde says he tries to be transparent by posting about some of his successful matches on Facebook, though he acknowledges that he only posts a small fraction of them and says it would be “irresponsible” to post information about open investigations. Project NOLA, he added,is accountable to the businesses and private individuals who host the cameras and voluntarily opt to share their feeds with the network.

“It’s a system that can be turned off as easily as it’s been turned on,” he said. “Were we to ever violate public trust, people can individually turn these cameras off.”

Lagarde declined to say who makes the equipment he uses, saying he doesn’t want to endorse any company.

Several Project NOLA cameras in the French Quarter look nearly identical to ones on the website of Dahua, a Chinese camera maker, and product codes stamped on the backs of these devices correspond to an identical camera sold by Plainview, New York-based

equipment retailer ENS Security, which has acknowledged reselling Dahua cameras in the past. Project NOLA's website also contains a link to download an app where police officers can view and manage footage. The app, called DSS, is made by Dahua.

Congress banned federal agencies from using products or services made by Dahua and a list of other Chinese companies in 2018, citing concerns that the equipment could be used by President Xi Jinping's government to spy on Americans. Since 2020, the law has barred any agency or contractor that receives federal funds from using those funds on the banned products.

A Dahua spokesperson declined to comment on the New Orleans cameras and said the company stopped selling equipment in the U.S. last year.

The New Orleans Police Department has received tens of millions of dollars from the federal government in recent years and confirmed that someofficers have installed this DSS app on mobile phones and police workstations. Kirkpatrick said she was not aware of who made the app or cameras but would look into it.

Lagarde said Project NOLA uses "American-made, brand-name servers to operate our camera program."

Some city officials argue that police are not violating the city's facial recognition ordinance because they do not own the cameras or contract with Lagarde; they are merely receiving tips from an outside group that is performing facial recognition scans on its own.

"If Bryan Lagarde calls an officer and says 'I think a crime is occurring on the 1800 Block of Bienville,' that's no different than Miss Johnson looking out of her window and saying 'I think a crime is occurring on 1850 Bienville,'" Williams, the Orleans Parish district attorney, said in an interview.

But in many cases, police have gone to Lagarde to request footage or help identifying and locating suspects, according to police reports, Project NOLA social media posts and internal police emails.

> Good News! The NOPD recovered your stolen car and Project NOLA helped to ID the perps! This marks the 3rd stolen...
>
> Posted by ProjectNOLA on Thursday, July 13, 2023

In one case last year, a police detective investigating a snatched cellphone relied on Project NOLA to identify the perpetrator and track him down using facial recognition alerts, according to accounts of the investigation drawn partly from the police incident report and partly from Project NOLA's Facebook post.

The detective contacted Lagarde “to assist locating the perpetrator on Project NOLA cameras,” according to the police report, providing still shots taken from the city’s surveillance camera footage. Lagarde used Project NOLA’s clothing recognition tool to find previous video footage of a suspect. With the new, better images of his face, Project NOLA used facial recognition to learn his possible identity and share that with the detective.

The detective took that name and found photos of a man on social media whose appearance and tattoos matched the phone-snatcher. Police got a warrant for his arrest. Lagarde added that name and face to Project NOLA’s watch list, and a few days later, cameras automatically identified him in the French Quarter and alerted police, who found and arrested him. The man was charged with robbery but pleaded guilty to the lesser offense of theft, court records show.

The police report mentioned that Lagarde helped identify the suspect, but did not mention that he used facial recognition to do so or used live facial recognition and automated alerts to monitor for and locate him.

David Barnes, a New Orleans police sergeant overseeing legal research and planning, said officers are trained toalways find probable cause before making an arrest. He said Lagarde sometimes overstates in Facebook posts the role his technology played in some of the cases. He said the detective investigating the phone-snatching case was only asking Lagarde to find videos of the suspect, not the location of the suspect.

On a rainy May morning outside the Three Legged Dog, a Project NOLA camera swiveled about, blinking red and blue lights, and twitching side to side as it followed cars and people based on an automated program. The camera is no longer pinging the police on an app — at Kirkpatrick’s request.

“Like you and everybody else, I do not want to lose any cases of violent criminals based on policy violations or violations of our ordinances,” Kirkpatrick said in her email last month to Lagarde.

But the alerts still go to Project NOLA staff, who Lagarde said convey the location of wanted suspects to the police via phone calls, texts and emails.

Schaffer reported from Washington. Nate Jones and Jeremy Merrill contributed to this report.

What readers are saying

The comments on the use of facial recognition technology by police departments, particularly in New Orleans, reflect a range of concerns and opinions. Many commenters express apprehension about privacy violations, lack of transparency, and potential misuse of the technology,... Show more

This summary is AI-generated. AI can make mistakes and this summary is not a replacement for reading the comments.

NewsletterWednesdays

The Color of Money

Advice on how to save, spend and talk about your money for the short and long term from Michelle Singletary.

Commonwealth of Virginia

GENERAL ASSEMBLY
RICHMOND

May 15, 2025

Virginia Congressional Delegation
The Honorable Mark Warner, U.S. Senate
The Honorable Tim Kaine, U.S. Senate
The Honorable Bobby Scott, (VA-03)
The Honorable Rob Whittman, (VA-01)
The Honorable Morgan Griffith, (VA-09)
The Honorable Don Beyer, (VA-08)
The Honorable Gerald E. Connolly, (VA-11)
The Honorable Ben Cline, (VA-06)
The Honorable Jennifer McClellan, (VA-04)
The Honorable Jen Kiggans, (VA-02)
The Honorable Suhas Subramanyan (VA-10)
The Honorable Eugene Vindman, (VA-07)
The Honorable John McGuire, (VA-05)

RE: Opposition to 10-year Moratorium on state artificial intelligence regulation

Dear Members of the Virginia Congressional Delegation:

The Virginia General Assembly's Technology & Innovation Caucus educates legislators and the general public regarding artificial intelligence (AI), privacy, and new/emerging technologies. Over the last three years with bipartisan collaboration we've prioritized policies that advance innovation and competitiveness while balancing needed privacy and data protections. To date our focus has been solely on Virginia unless there are conditions outside of the Commonwealth that require our attention. This is one of those times.

Yesterday, the House Energy and Commerce Committee voted 29-24 to pass its budget reconciliation bill that included a wide range of provisions impacting technology. More specifically, it contained a proposed 10-year moratorium on states' AI efforts that represents an unprecedented overreach potentially threatening both federalist principles and public safety. The moratorium language states (with few exceptions) as follows:

> *"Subsection (c) states that no state or political subdivision may enforce any law or regulation regulating artificial intelligence models, artificial intelligence systems, or automated decision systems during the 10-year period beginning on the date of the enactment of this Act."*

While we agree and applaud the desire to have uniform federal guidance that enhances and enables innovation, it should be done in partnership with states. Virginia has been a tech industry leader, and our history has shown that regulation does not stifle innovation and competitiveness. We are skillful in our articulation and balancing of business and consumer interests. Similar opposition was made when Virginia became the second state to pass a data privacy act, and the proclaimed harms of such regulation did not come to pass. Rather it strengthened the Commonwealth and helped ensure better, more responsible, and successful business. In contrast, our nation has seen fully what happens without meaningful state (or federal) regulation of

technology. Years ago, when social media platforms came into the marketplace, we failed to grow our policy and regulation alongside the technology. Now, decades later, this has resulted in Virginia, industry, and the nation working together to resolve unexpected mental health challenges that have arisen in connection with usage of the platforms. That is what we do well -- work together and we should continue to do so during this critical time.

Respectfully, we urge Congress to oppose the 10-year moratorium on state enforcement of AI regulations and legislation. It is our position that this is not a binary decision. We must pave the way for businesses to thrive, innovation to flourish, and people to be protected in the Commonwealth. We can and should make these parallel priorities executed through joint efforts between the state and federal government playing a meaningful role together. **The proposed moratorium language is broad and sweeping and fails to consider the impact of state laws already enacted, the potential adverse impacts on Virginia's ability to ensure balanced data privacy, regulation of data centers, efforts to curtail crimes using deepfakes, and more within the Commonwealth.** States like Virginia have long been the place where we catch what falls between the gaps of federal law to protect and preserve commerce, competitiveness, and our residents.

Additionally, it is notable that the proposed moratorium language is disconnected from the section's opening provisions that relate solely to the innovation of federal IT systems, and automated processes, for example, and does not directly relate to the budgetary purpose of the bill. **It is arguable that this misalignment runs afoul of the U.S. Senate's well-established Byrd Rule which limits the number of extraneous provisions included in reconciliation legislation such as this.**

Finally, there may be Constitutional issues with the moratorium language. The 10th Amendment of the U.S. Constitution states that "[t]he powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." The moratorium proactively preempts state action even in the absence of federal action or guidance. Supporters of the moratorium claim that the decade-long moratorium is necessary and would fall under the federal government's interstate commerce authority. However, Virginia's history of successful technological advancement in the absence of federal legislation has not resulted in feared interstate commerce disruptions or violations which renders this argument less persuasive.

We again respectfully urge Congress to strike this language and find a better, more collaborative approach to meeting this moment and ushering in AI innovation.

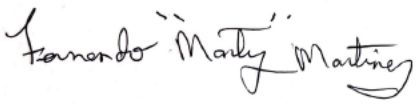
Sincerely,

Delegate Michelle L. Maldonado
Chair, Technology & Innovation Caucus

Senator Lashrecse D. Aird,
Vice Chair, Technology & Innovation Caucus

Irene Shin
Delegate, 8th House District

Atoosa Reaser
Delegate, 27th House District



Fernando "Marty" Martinez
Delegate, 29th House District

Sam Rasoul
Delegate, 38th House District

Katrina Callsen
Delegate, 54th House District

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Delegate, 58th House District

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Phil Hernandez
Delegate, 94th House District

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Ghazala F. Hashmi
Senator, 15th Senate District

Schuyler VanValkenburg
Senator, 16th Senate District

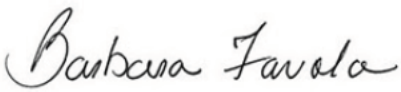
Angelia Williams Graves
Senator, 21st Senate District

Kannan Srinivasan
Senator, 32nd Senate District

Jennifer Carroll Foy
Senator, District 33

Saddam Salim
Senator, 37th Senate District

Adam Ebbin
Senator, 39th Senate District



Barbara Favola
Senator, 40th Senate District