



**U.S. Senate Committee on Commerce, Science & Transportation
October 29, 2025**

**Written Testimony
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Chairman Cruz, Ranking Member Cantwell, and Members of the Committee, thank you for the opportunity to speak with you. My name is Markham Erickson, and I serve as Vice President of Government Affairs and Public Policy at Google.

Google's mission – from its inception to today – has been to organize the world's information and make it universally accessible and useful. Founded in America, Google proudly advances this mission around the globe. And while our platforms continue to experience tremendous success worldwide, it is hard to imagine that our story could have begun anywhere else but here in the United States, where the commitment to freedom of expression is so profound.

Independent Policy Development and Enforcement

We take seriously the importance of protecting free expression and access to a range of viewpoints, while also maintaining and enforcing responsible policy frameworks. Terrorist content, child sexual abuse material, hate speech, and other harmful content have no place on our platforms. When it comes to the manner in which we moderate the content on our platforms, we are crystal clear: we develop and enforce our policies independently. We independently and voluntarily evaluate whether content violates our terms and policies, reach our own conclusions, and take enforcement action in accordance with these determinations.

Around the world, we hear from government agencies, legislators, non-governmental organizations, academics, and individual users who inform us of content that they believe we should remove, or, on the other hand, content that we have removed that they believe should remain available. This happens across the political spectrum and around the world, and it has for years. We have a responsibility to engage on these issues in the countries where we operate.

Sometimes, the results of our independent evaluations mean that we tell a government “no” and we decline to remove content as they request. For example, during the pandemic, officials in the Biden Administration pressed YouTube to remove certain COVID-19 content. Despite this outreach, we continued to develop and enforce our policies independently, rejecting suggestions that did not align with our policies. Today, we exercise this same independence

over our policies and products under the current Administration and with governments around the world.

Google's Interactions with Governments Around the World

Outside of the United States, we also have pushed back against requests to moderate content, even at great cost. Multiple governments have attempted to shut down user access to our services when we would not remove content that complied with our policies.

As one example, when Russian authorities ordered YouTube to remove political videos critical of the regime, we refused. The government threatened our employees and fined us. Kremlin-aligned media outlets sued us in Russia, demanding we provide a platform for them. After we refused, the Russian government imposed fines against us that forced us to leave the market. Today those fines exceed more than the world's GDP. We continued to fight back, bringing suit in the European Court of Human Rights and securing a ruling that Russia had violated freedom of expression. We have since filed successful court cases in the United Kingdom and the United States to stop the media outlets from enforcing these unjust fines against us outside Russia.

While Google has a proud track record of pushing back against or objecting to overly broad or otherwise inappropriate government demands for content removals, we recognize that communication with law enforcement and the government is a critical component of our efforts to keep people safe on our platforms and services. Google works with government officials, law enforcement entities, and legislators across the political spectrum in numerous ways to assess threats and to counter attempts to deceive, harm, or take advantage of users.

We have processes in place to swiftly refer threats of imminent harm—including those involving terrorism, mass shootings, violent events, or other urgent incidents—and specified illegal activity occurring on our platform to law enforcement. We also have procedures for our various internal product teams, as well as external sources, to escalate potential threats and criminal activity they see on our platforms, including child sexual exploitation. Google personnel assess escalated threats and refer matters to law enforcement whenever appropriate, consistent with due process and privacy protections.

In addition to these urgent referrals, we maintain regular communication channels with law enforcement, government entities, and industry partners as part of our efforts to keep people safe and understand and adapt to trends and new forms of abuse. We rely on information learned through such channels to ensure the integrity of our products. When appropriate, we share threat intelligence, provide criminal referrals, and hold follow-up briefings. More information on our threat intelligence work can be found [here](#) and [here](#).

Courts and government agencies around the world regularly ask Google to remove information from Google products for alleged violation of law. We review these legal demands

closely to determine if content should be removed because it violates our terms of service and content policies, or should be restricted within a specific country because it violates a local law. In order for us to evaluate a legal demand from a government entity, it must provide a clear explanation of how the content violates controlling laws or regulations or our policies.

We do not always remove content in response to a government's legal demand. Some legal demands may not be specific enough for us to know what the government wanted us to remove (for example, no URL is listed in the request) or lack sufficient explanation of why the government believes content violates a given law.

We also know that transparency regarding government interactions with companies is essential to foster public trust and uphold the principles of free expression. Google publishes data in our biannual [Transparency Report](#) on government content removal requests — part of our efforts to inform discussions about and shed light on these requests.

We welcome the Committee's consideration of legislation that would create more trust and transparency in how the U.S. government engages with industry, and we support in principle some of the legislative recommendations outlined in the Committee's recent report.

Opportunity and Innovation

As we make our independent choices about how we moderate content, we recognize that speech is more important than ever. Google responds to billions of search queries every day, and over 500 hours of content is uploaded on YouTube every single minute, reflecting a vast proliferation of viewpoints and a range of perspectives. This scale translates to thriving economic growth in the United States. As website publishers and YouTube creators find success, they build businesses, hire employees, and contribute to their communities across the country while creating content for billions of people.

We recognize that our products have an important role to play in facilitating and contributing to a healthy digital ecosystem and making information available to our billions of users. We find ourselves in an incredibly critical moment in the history of the Internet. The scientific innovations made possible by artificial intelligence are creating a generational technological shift. For instance, Google's AI advances in predicting protein structures have saved at least 400 million years of research and are helping three million scientists in 190 countries make progress in addressing diseases like malaria and cancer. Google is also using AI to forecast floods, detect wildfires, and provide tools to improve farming efficiency and boost crop yields. Our AI projects are driving positive change in areas including health, accessibility, science, and economic impact.

Selected examples of these [AI applications](#) to address society's biggest challenges include:

- **Fighting Cancer.** Artificial Intelligence holds the promise of revolutionizing humanity's fight against cancer and other diseases. At Google, we are particularly proud of our recent advancements, including:
 - Childhood leukemias and many other cancers have incredibly complex genetic signatures, requiring tailored treatments based on their specific mutations. DeepSomatic is an AI-powered tool that helps scientists and doctors spot genetic variants in cancer cells. Our partners at Children's Mercy in Kansas City used DeepSomatic to identify 10 new genetic variants in samples of childhood leukemia that had been missed by previous techniques. If they can pinpoint how and why a particular form of cancer is affecting a patient, they may be able to develop personalized cures. Remarkably, DeepSomatic can also generalize to cancers it hasn't seen before. For example, without any training on the brain cancer glioblastoma, DeepSomatic was able to pinpoint which genetic variants cause it. This suggests it could work even on rare or new types of cancer — a big milestone that marks 10 years of genomics research at Google. We are also working with clinicians, patients, and partners to build an AI system for mammography, which could help radiologists detect breast cancer more accurately, quickly, and consistently.
 - A major challenge in cancer immunotherapy is that many tumors are “cold” — invisible to the body's immune system. A key strategy to make them “hot” is to force them to display immune-triggering signals through a process called antigen presentation." Recently, in a collaboration with Yale University, Google DeepMind developed an AI model that was able to generate a new hypothesis about interventions that could boost antigen presentation--and laboratory testing revealed that the hypothesis was sound, "resulting in a roughly 50% increase in antigen presentation, which would make the tumor more visible to the immune system. With further preclinical and clinical validation, such hypotheses may be able to ultimately accelerate the path to new therapies.
- **Predicting Proteins Structures with AlphaFold.** For decades, scientists tried to find a method to reliably determine a protein's structure from its sequence of amino acids alone. These methods included nuclear magnetic resonance and X-ray crystallography, which relied on extensive trial and error, years of painstaking work, and multi-million-dollar specialized equipment. This grand scientific challenge is known as the protein-folding problem. In 2016, researchers at Google DeepMind began work on this problem. We built an AI system by teaching it through visual sequences and structures of around 100,000 known proteins. Now, this system can predict the shape

of all 200 million known proteins, almost instantly, down to atomic accuracy. We call this system AlphaFold. Today, AlphaFold has revealed millions of intricate 3D protein structures, and is helping scientists understand how life's molecules interact. For this breakthrough, Co-founder and CEO of Google DeepMind and Isomorphic Labs Sir Demis Hassabis, and Google DeepMind Director Dr. John Jumper were co-awarded the 2024 Nobel Prize in Chemistry.

- **Facilitating Human Communication.** Google is committed to facilitating communication. For example, Google's [Project Relate](#) is an Android app that helps individuals with non-standard speech communicate more easily. By offering features like speech-to-text transcription and clear voice repetition, it enables users to express themselves and manage daily tasks effectively. Google also is committed to developing language inclusion technology. There are over 7,000 languages spoken around the world. To date, few of these languages have been well represented online. To capture the diversity of how we communicate globally, Google has [built an AI model](#) to help people connect and better understand the world around them.
- **Advancing Earth Sciences.** Google is using AI to advance earth sciences in a variety of ways such as:
 - **Flood Forecasting.** Floods are the most common type of natural disaster and nearly 1.5 billion people, or some 19 percent of the world population, are directly exposed to substantial risks from severe flood events worldwide. Our AI-powered [flood forecasting](#) platform can predict when and where riverine flooding will occur up to seven days in advance. This allowed us to provide flood forecasting in 80 countries in areas where 460 million people live. Where possible, we also provide forecasts in Google Search and Google Maps and via Android notifications.
 - **Agriculture and Farming.** Using Google Research's NeuralGCM and other advanced AI models, the University of Chicago's Human-Centered Weather Forecasts Initiative built a high-quality forecast that is more efficient, more flexible, and more accurate than traditional forecasts. In 2025, the program successfully delivered tailored, advanced forecasts to 38 million farmers in India – accurately predicting an unusually delayed monsoon season and allowing the farmers to proactively adjust their planting decisions accordingly.
 - **Wildfire tracking.** Our alerts, simulation models, and [wildfire risk forecasting](#) systems are helping provide accurate wildfire information to affected communities and fire authorities. In an exciting recent development, the first satellite for the [FireSat constellation](#) officially made contact with Earth. This

satellite is the first of more than 50 in a first-of-its-kind constellation designed to use AI to detect and track wildfires as small as a classroom (roughly 5x5 meters). Currently, many wildfire authorities depend on satellite imagery that is low-resolution or only updated a few times a day. FireSat will advance the science and practice of fighting wildfires by providing high-resolution imagery updated globally every 20 minutes, helping emergency responders catch wildfires before they become destructive.

- **Calling in Our Corals - SurfPerch.** Our AI model can expedite the process of finding solutions to preserve and restore coral reefs, developed in collaboration with Google researchers and enriched by contributions from citizen scientists on the [Calling in Our Corals](#).
- **Green Light.** Our AI tool measures driving trends at intersections and develops recommendations that city traffic engineers can use to [optimize the timing of traffic light changes](#) to reduce stop-and-go traffic.
- **Earth AI.** The hardest and most important questions in planetary science and crisis response are never about just one kind of geospatial information — they are about pulling it all together. In response, we are developing [Earth AI](#) in order to knit all of that information and predictive power together. Questions that are currently impossible to answer because they're too complex and draw on too many disparate geospatial resources will become possible to tackle. And this, in turn, will prompt new research — new collection of useful data about Earth, new kinds of sensors and new uses of AI to model sophisticated interconnected patterns across the planet.
- **Advancing Quantum Computing.** At Google Quantum AI, we believe quantum computers can help shape a brighter future and solve otherwise impossible problems in the fields of national security, drug discovery, industrial chemistry, energy, and more. We are optimistic that within five years we will see real-world applications that are possible only on quantum computers. Google Quantum AI announced the first-ever demonstration of verifiable quantum advantage, a significant step towards real world applications for quantum computing. We have run an algorithm, which we call Quantum Echoes, on our quantum computer that would take 13,000 times longer on one of the world's fastest supercomputers. This advance may help us better understand molecular structures, with potential implications for fields like drug discovery, medicine, and battery development. The United States leads the development of quantum computing, and Google has the most advanced, state-of-the-art quantum computing effort anywhere in the world. We proudly make our chips in the United States, at a dedicated

superconducting fabrication facility. All of our quantum computing technology is located in our U.S. quantum computing laboratories.

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The future is before us. And it is a future made possible by unique attributes of the United States of America and the freedoms we hold dear. These discoveries, this scientific progress, and the resulting economic growth in the United States is made possible by America's tradition of protecting the free and robust expression of ideas. We remain committed to doing our part to keep the digital ecosystem safe, reliable, and open to free expression; we rely on the trust of our users and we intend to keep earning it.