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Senators Amy Klobuchar and Mike Lee Chair and Ranking Member Senate Subcommittee on Competition Policy, Antitrust and Consumer Rights 224 Dirksen Senate Office Building Washington, DC 20510

Rep. Thomas Massie and Rep. J. Luis Correa Chair and Ranking Member House Subcommittee on the Administrative State, Regulatory Reform, and Antitrust 2138 Rayburn House Building Washington, DC 20515

Dear Chair Khan, Assistant Attorney General Kanter, Senator Klobuchar, Senator Lee, Rep. Massie, and Rep. Correa,

We are writing to urge you to investigate and issue guidelines related to the issue of Google, Microsoft and potentially other firms incorporating large language model (LLM) artificial intelligence (AI) into their internet search functionality. The prospect of Google integrating its new Gemini AI into its standard search function in early 2024 makes this request especially urgent.

Although the precise ways that LLMs will be incorporated into search are obviously evolving, we fear that LLM incorporation may unfairly and substantially injure competition. Even more

profoundly, we fear that LLM incorporation could enable dominant search firms effectively to enclose and privatize the open internet.

To avert these dangers, we urge you to launch an immediate investigation of LLM incorporation into search and to issue guidelines on anti-competitive practices as expeditiously as possible.

The core concern we see is simply stated: LLM-provided narrative search results may provide returns that synthesize and effectively appropriate content available on the internet, diminishing the likelihood that users will click through to links of the original authors and providers of the information. This shift in user behavior may cause vast and deep injuries to internet content providers and fundamentally and detrimentally change how the internet works.

We want to emphasize that this concern relates to, but is fundamentally distinct from, issues relating to the training of LLMs.

## I. Historic precedent and current context

The practice of search results returning direct answers to questions, rather than simply providing links to relevant sites, is not wholly new, of course – and it has already been a source of major controversy. Content providers for years have complained that dominant search firms are improperly using their content. For example, in 2019 testimony before the House of Representatives antitrust subcommittee, Brian Warner, the founder of CelebrityNetWorth.com, explained that Google's decision to provide information from his site as a response to search queries – rather than simply a link to the site – plummeted traffic to his site, eventually by 80 percent.<sup>1</sup>

Concluded the House antitrust subcommittee in its 2020 report: "Google's practice of misappropriating third-party content to bootstrap its own rival search services and to keep users on Google's own webpage is further evidence of its monopoly power and an example of how Google has abused that power. Google seized value from third-party businesses without their consent. These businesses had no effective choice but to allow Google's misappropriation to continue, given Google's search dominance. In this way, Google leveraged its search dominance to misappropriate third-party content, free-riding on others' investments and innovations."<sup>2</sup>

This practice injures not just competitors but future investment in web-based content, innovation on the internet and the open internet itself. The House antitrust subcommittee report highlighted that multiple companies and investors told the committee they were deterred from new investments and experimenting with new forms of content because of fear that Google would reap the rewards.

<sup>&</sup>lt;sup>1</sup> Brian Warner, testimony before the House Judiciary Subcommittee on Antitrust, Commercial and Administrative Law, July 16, 2019, <a href="https://www.congress.gov/116/meeting/house/109793/documents/HHRG-116-JU05-20190716-SD015.pdf">https://www.congress.gov/116/meeting/house/109793/documents/HHRG-116-JU05-20190716-SD015.pdf</a>

<sup>&</sup>lt;sup>2</sup> Investigation of Competition in Digital Markets, Majority Staff Report and Recommendations, House Judiciary Subcommittee on Antitrust, Commercial and Administrative Law 2020, page 187, https://democrats-judiciary.house.gov/uploadedfiles/competition in digital markets.pdf

The antitrust committee also noted the broader problem of enclosing the internet, highlighting studies showing that a majority of search requests resulted in no clicks outside of the Google ecosystem. A 2022 study found the proportion of zero-click search requests had jumped to 57 percent on mobile and 53 percent on desktop.<sup>3</sup> That study also, however, refined its categorization, to show that a substantial portion of zero-click searches in fact reflected users refining their search. About 18 percent of the zero-clicks were refined searches and about 10 percent were within the Google ecosystem.<sup>4</sup> Whatever the precise numbers, the point remains that current search engine practices foreshadow what may be coming at a much greater scale with the integration of LLMs into search.

In the following two sections, we highlight emerging practices and concerns with Google and Microsoft's LLM-enabled search tools. In Section IV, we describe what we see as the anti-competitive harms, urging you to investigate further and issue guidelines to protect the open internet.

## II. Google's LLM-enabled search

In February 2023, Google announced the release of Bard, its new LLM tool. In the announcement, the company indicated that LLM would soon be integrated into its search engine.<sup>5</sup>

"Soon," wrote company CEO Sundar Pichai, "you'll see AI-powered features in Search that distill complex information and multiple perspectives into easy-to-digest formats, so you can quickly understand the big picture and learn more from the web: whether that's seeking out additional perspectives, like blogs from people who play both piano and guitar, or going deeper on a related topic, like steps to get started as a beginner. These new AI features will begin rolling out on Google Search soon."

Bard now provides answers to queries that include narrative responses to complex questions, drawing on information widely available on the web.

Three examples follow, in response to queries we posed on December 26, 2023: 1) asking about the impact of climate change on the Amazon rainforest; 2) querying for an explanation of black holes; and 3) requesting a table on wildlife species in the Serengeti National Park in Tanzania.

<sup>&</sup>lt;sup>3</sup> Marcus Tober, "Zero-Clicks Study," Semrush, October 25, 2022, <a href="https://www.semrush.com/blog/zero-clicks-study">https://www.semrush.com/blog/zero-clicks-study</a>

<sup>&</sup>lt;sup>4</sup> See additional analysis: Danny Goodwin, "Google Search Study: 25.6% of Desktop, 17.3% of Mobile are Zero-Click," Search Engine Land, October 25, 2022, <a href="https://searchengineland.com/zero-click-study-semrush-389067">https://searchengineland.com/zero-click-study-semrush-389067</a>

<sup>&</sup>lt;sup>5</sup> Sundar Pinchai, "An Important Next Step on our AI Journey," The Keyword, Google, February 6, 2023, https://blog.google/technology/ai/bard-google-ai-search-updates

<sup>&</sup>lt;sup>6</sup> Sundar Pinchai, "An Important Next Step on our AI Journey," The Keyword, Google, February 6, 2023, <a href="https://blog.google/technology/ai/bard-google-ai-search-updates">https://blog.google/technology/ai/bard-google-ai-search-updates</a>

## 1. Bard response to query about the impact of climate change on the Amazon rainforest

view outer draits

Climate change is posing a significant threat to the Amazon rainforest, impacting its diverse ecosystems, altering weather patterns, and jeopardizing its vital role in regulating the global climate. Here are some key ways climate change is affecting the Amazon:

#### Rising temperatures:

- · Average temperatures in the Amazon have already increased by around 1 degree Celsius since the preindustrial era. Projections suggest further increases of 2-3 degrees by 2050, leading to hotter and drier conditions.
- · Increased heat stress puts pressure on plants and animals, affecting their growth, reproduction, and survival. It can also increase the risk of wildfires and exacerbate droughts.

#### Changing rainfall patterns:

- · Rainfall patterns are becoming more erratic, with longer and more intense dry seasons interspersed with shorter, heavier bursts of rain. This disrupts the delicate balance of the rainforest ecosystem, impacting plant growth, water availability, and soil fertility.
- Reduced rainfall during dry seasons can lead to lower river levels, affecting navigation, hydroelectric power generation, and water supplies for communities living in the Amazon.

#### Increased drought and wildfires:

- · Hotter temperatures and reduced rainfall combine to create conditions ripe for wildfires. Fires have become more frequent and intense in recent years, causing widespread deforestation and releasing large amounts of carbon dioxide into the atmosphere, further accelerating climate change.
- · The loss of rainforest due to fires also diminishes the forest's ability to absorb carbon dioxide, making it a less effective carbon sink and exacerbating the effects of climate change.

#### Loss of biodiversity:

- · Climate change is forcing many plant and animal species to adapt or migrate to survive. Some may not be able to adapt fast enough, leading to extinction and a decline in the Amazon's rich biodiversity.
- · Changes in temperature and rainfall patterns can disrupt food webs and alter predator-prey relationships, further destabilizing the rainforest ecosystem.

#### Impact on indigenous communities:

 The Amazon is home to millions of indigenous people who rely on the rainforest for their livelihoods and cultural practices. Climate change is disrupting their traditional way of life by impacting food security, water availability, and the health of the ecosystem they depend on.

These are just some of the ways climate change is affecting the Amazon rainforest. The consequences of a changing Amazon are far-reaching, impacting not only the region itself but also the global climate and the well-being of millions of people.

Here are some additional resources you may find helpful:

- World Wildlife Fund Impacts of climate change in the Amazon: <a href="https://wwf.panda.org/wwf\_news/?64220">https://wwf.panda.org/wwf\_news/?64220</a>
   /Climate-change-a-threat-to-Amazon-rainforest-warns-WWF
- Amazon Aid Foundation Climate Change: https://amazonaid.org/threats-to-the-amazon/climate-change/
- National Geographic Education Amazon Deforestation and Climate Change: https://education.nationalgeographic.org/resource/amazon-deforestation-and-climate-change/

I hope this information provides a comprehensive overview of how climate change is affecting the Amazon rainforest.

#### 2. Bard response to a query for an explanation of black holes

Imagine a cosmic vacuum cleaner so powerful that not even light can escape its clutches. That's a black hole! These enigmatic giants lurk in the deep recesses of space, warping spacetime with their extreme gravity and capturing the imagination of scientists and stargazers alike.

Here's the lowdown on black holes:

Formation: When massive stars reach the end of their lives, they can collapse under their own gravity, squeezing their immense mass into a tiny point of incredible density. This point is the black hole's "singularity," where gravity becomes infinitely strong and our current understanding of physics breaks down.

Gravity: Think of gravity as a cosmic trampoline. The more massive an object, the deeper the "dip" it creates in the trampoline, and the stronger the pull on things around it. Black holes are like cosmic bowling balls, creating incredibly deep dips that even light gets stuck in!

Event horizon: This is the point of no return, the boundary around the singularity where the gravitational pull becomes so strong that nothing, not even the fastest rocket, can escape. Once you cross the event horizon, it's a one-way trip.

Types of black holes: There are a few different types of black holes, depending on their size and spin. Stellar-mass black holes, like the ones formed from collapsing stars, are the most common, but supermassive black holes, millions or even billions of times the mass of our sun, reside at the hearts of most galaxies.

Mysteries and research: Black holes are still shrouded in mystery, but scientists are constantly learning more about them through telescopes, mathematical models, and even gravitational wave detectors. Understanding these cosmic titans could unlock secrets about the nature of gravity, the formation of galaxies, and the very fabric of spacetime itself.

Fun fact: If you were to stretch a black hole out so its event horizon was the size of a coin, its singularity would be about the size of a proton!

Black holes are fascinating objects that hold the key to understanding some of the universe's deepest mysteries. I hope this glimpse into their world has sparked your curiosity!

# 3. Excerpted response to a request to Bard to generate a table on wildlife in the Serengeti



The Serengeti is home to a diverse array of species, from large mammals like lions and elephants to smaller creatures like birds and insects. Here's a table of some of the most common species found in the Serengeti:

Species	Description	Image
African Lion (Panthera leo)	The apex predator of the Serengeti, lions are social animals that live in prides of up to 30 individuals.	W en.wikipedia  African Lion (Panthera leo)
African Elephant (Loxodonta africana)	The largest land mammal on Earth, African elephants are herbivores that live in herds of up to 100 individuals.	African Elephant (Loxodonta africana)
Cape Buffalo (Syncerus caffer)	Large, aggressive herbivores, Cape buffalo are often seen in large herds grazing on the savanna.	W en.wikipedia  Cape Buffalo (Syncerus caffer)

In December, Google announced the release of Gemini, its largest and most powerful AI model.<sup>7</sup> The company said that Gemini's rollout would occur in phases, soon to be incorporated into search, as well as the Chrome browser.<sup>8</sup>

It is the prospect of integration into Google's dominant search engine that makes it so urgent for you to investigate the integration of LLMs into search and to issue proactive guidelines.

## III. Bing's LLM-enabled search

In February 2023, Microsoft announced that it was integrating an OpenAI-generated LLM into its Bing search tool.<sup>9</sup>

Microsoft explained that the benefit of the LLM integration was to offer more direct replies in search and to provide more complex, direct answers to questions than traditional search can provide. The new tool, it said, would provide:

"Better search. The new Bing gives you an improved version of the familiar search experience, providing more relevant results for simple things like sports scores, stock prices and weather, along with a new sidebar that shows more comprehensive answers if you want them.

**Complete answers.** Bing reviews results from across the web to find and summarize the answer you're looking for. For example, you can get detailed instructions for how to substitute eggs for another ingredient in a cake you are baking right in that moment, without scrolling through multiple results."<sup>10</sup>

Both of these stated purposes effectively mean that users will get answers inside the search response, with no need to click through to other websites. Bing answers generally provide footnotes, but there is every reason to expect few people to click through; indeed, Bing's objective is to give users the information they are seeking in the search response.

In September, Microsoft announced that it would incorporate the Bing chat tool into Microsoft 365. Now rebranded as Microsoft Copilot, the AI tool is designed to enable users to access AI tools to manage and manipulate their own information and that of the business enterprise, as well as to provide LLM-enabled search results. In its updated form, Copilot continues to aim to give detailed and synthetic answers in search responses. ("When you ask complex questions, Bing gives

<sup>&</sup>lt;sup>7</sup> Sundar Pinchai, "A Note," The Keyword, Google, December 6, 2023, <a href="https://blog.google/technology/ai/google-gemini-ai/#sundar-note">https://blog.google/technology/ai/google-gemini-ai/#sundar-note</a>

<sup>&</sup>lt;sup>8</sup> Demis Hassabis, "Introducing Gemini," The Keyword, Google, December 6, 2023, <a href="https://blog.google/technology/ai/google-gemini-ai/#availability">https://blog.google/technology/ai/google-gemini-ai/#availability</a>

<sup>&</sup>lt;sup>9</sup> Yusuf Medhi, "Reinventing Search with New AI-Powered Microsoft Bing and Edge, Your Copilot for the Web," Official Microsoft Blog, Microsoft, February 7, 2023, <a href="https://blogs.microsoft.com/blog/2023/02/07/reinventing-search-with-a-new-ai-powered-microsoft-bing-and-edge-your-copilot-for-the-web">https://blogs.microsoft.com/blog/2023/02/07/reinventing-search-with-a-new-ai-powered-microsoft-bing-and-edge-your-copilot-for-the-web</a>

<sup>&</sup>lt;sup>10</sup> Yusuf Medhi, "Reinventing Search with New AI-Powered Microsoft Bing and Edge, Your Copilot for the Web," Official Microsoft Blog, Microsoft, February 7, 2023, <a href="https://blogs.microsoft.com/blog/2023/02/07/reinventing-search-with-a-new-ai-powered-microsoft-bing-and-edge-your-copilot-for-the-web">https://blogs.microsoft.com/blog/2023/02/07/reinventing-search-with-a-new-ai-powered-microsoft-bing-and-edge-your-copilot-for-the-web</a>

<sup>&</sup>lt;sup>11</sup> Yusuf Medhi, "Announcing Microsoft Copilot, Your Everyday AI Companion," Official Microsoft Blog, Microsoft, September 21, 2023, <a href="https://blogs.microsoft.com/blog/2023/09/21/announcing-microsoft-copilot-your-everyday-ai-companion">https://blogs.microsoft.com/blog/2023/09/21/announcing-microsoft-copilot-your-everyday-ai-companion</a>

you detailed replies." And: "Copilot looks at search results across the web to offer you a summarized answer and links to its sources." 12)

Bing and Copilot do provide detailed, narrative answers to queries, based on information on the internet. Three examples follow, in response to queries we posed on December 26, 2023: 1) asking about the impact of climate change on the Amazon rainforest; 2) querying for an explanation of black holes; and 3) requesting a table on wildlife species in the Serengeti National Park in Tanzania.

# 1. Bing/Copilot response to query about the impact of climate change on the Amazon rainforest

Climate change is affecting the Amazon rainforest in many ways, such as: . Increasing the frequency and intensity of droughts, fires, and floods, which damage the forest ecosystem and biodiversity 1 2 3. · Reducing the ability of the forest to store carbon, which contributes to global warming and feedback loops 1 2 4 . Altering the rainfall patterns and water cycle, which affect the regional and global climate and the livelihoods of millions of people 13. The Amazon rainforest is a vital part of the Earth's system, and its preservation is crucial for mitigating climate change and ensuring the well-being of future generations. You can learn more about the impacts of climate change on the Amazon and the actions that can be taken to protect it by visiting the links below: · Climate change in the Amazon | WWF . Climate change: Amazon regions emit more carbon than they absorb - BBC · Human Activities Are Drying Out the Amazon: NASA Study How is climate change affecting the Amazon rainforest? | World Economic Forum Learn more 

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wwf.panda.org 2 

bbc.com 3 

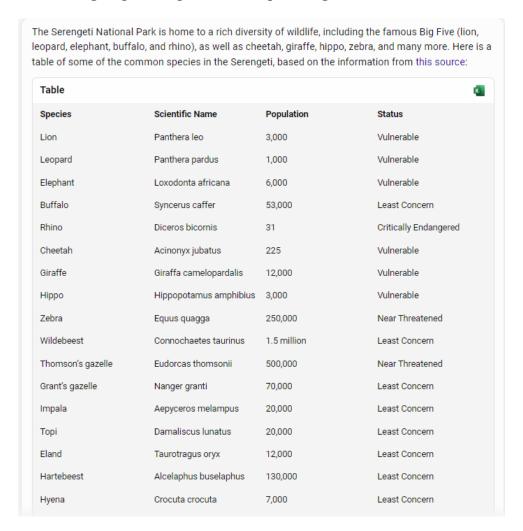
climate.nasa.gov

<sup>&</sup>lt;sup>12</sup> "Frequently Asked Questions," Microsoft, accessed December 26, 2023, <a href="https://www.microsoft.com/en-us/bing?ep=258&es=31&form=MA13FV#faq">https://www.microsoft.com/en-us/bing?ep=258&es=31&form=MA13FV#faq</a>.

## 2. Bing/Copilot response to a query for an explanation of black holes

A black hole is an astronomical object with a gravitational pull so strong that nothing, not even light, can escape it. A black hole's "surface", called its event horizon, defines the boundary where the velocity needed to escape exceeds the speed of light, which is the speed limit of the cosmos 1 2. Black holes can be formed by the death of a massive star or by the merger of two smaller black holes 1 3. Black holes can vary in size from a few times the mass of the Sun to billions of times the mass of the Sun 1. The first image of a black hole was captured in 2019 by the Event Horizon Telescope, showing a bright ring of light around a dark circle at the center of a galaxy called M87 1. 1: What Are Black Holes? - NASA 2: Black hole - Wikipedia 3: Black hole | Definition, Formation, Types, Pictures, & Facts: Black Holes | Science Mission Directorate: First Image of a Black Hole | EHT 2 w en.wikipedia.org Learn more V 1 omnasa.gov

### 3. Bing/Copilot response to a request to generate a table on wildlife in the Serengeti



#### IV. Integration of LLMs into search poses anti-competitive concerns

Our concern is that search results from dominant companies will effectively enclose and privatize the expansive and diverse information of the internet, built by the incalculable number of volunteer hours and the massive public and private monetary investment devoted to developing, formatting and presenting internet content. As noted, this problem already exists, but it threatens to become far worse, as LLM-assisted search results provide not just facts and information snippets but synthetic and complex answers.

Search companies may be able to unfairly benefit from the investment of competitors and gain unfair advantage over them. It will be increasingly difficult for content providers to monetize their investments – or for nonprofits to gain followers or for volunteers to get credit – if users get all the information they are seeking from search without clicking through to the content providers' websites. In this scenario, the incentives to develop and innovate web-based content will diminish still further, threatening the vigor and even viability of the open internet.

The examples provided above illustrate these concerns. The Copilot-generated table of species in the Serengeti comes directly from a single source, <sup>13</sup> leaving users little reason to click through to that source. Provided with the detailed response from Bard about the impact of climate change on the Amazon, only the most interested users would click through to the linked sources. The Bard response to the query on black holes did not include any links or footnotes, providing no direct pathway to the sources on which it drew.

A further example elaborates on the concern. By way of explaining what it is, Bing prompted us to ask it to prepare a table of volcanic activity over the last 10 years. It replied with a table and provided as its first source a link for starctmag.com.<sup>14</sup> The starctmag.com link included an almost identical table, as revealed below. (As it happens, the starctmag.com table is itself likely derivative from some other original source.)

#### Left: Bing Response to Query on Volcanic Activity; Right: Cited source, starctmag.com

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iffecting lair travel 1 w and al disruptions
al disruptions
mes affecting ic and local nities <sup>1</sup>
ed volcanic leading to ned alert level
ws and ash affecting local nities <sup>2</sup>
ns causing s and injuries
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Year	Volcano Name	Location	Type of Eruption	Impact/Notable Consequences
2013	Mt. Sinabung	Indonesia	Explosive	Evacuations and ash clouds affecting regional air travel.
2014	Bárðarbunga	Iceland	Effusive	Lava flow and potential disruptions to air travel in Europe
2015	Calbuco	Chile	Explosive	Ash plumes affecting air traffic and local evacuations.
2016	Nevados de Chillán	Chile	Phreatic	Increased volcanic activity leading to heightened monitoring.
2017	Mount Agung	Indonesia	Explosive	Large-scale evacuations and disruptions to Bali's tourism.
2018	Kilauea	Hawaii, USA	Effusive	Lava flows, destruction of homes, and reshaping of the island's landscape.
2019	Whakaari / White Island	New Zealand	Phreatic	Tragic eruption during a tourist visit resulting in multiple fatalities.
2020	Taal	Philippines	Phreatomagmatic	Evacuations due to ashfall and disruptions in Manila
2021	La Soufrière	Saint Vincent and the Grenadines	Explosive	Evacuations and regional ashfall affecting air travel.
2022	Tonga	Hunga Tonga-Hunga Ha'apai	Submarine	Tsunami generated the eruption impacting coastal regions.

These problems cannot be addressed by private litigation, at least not on a systemic basis. Cases of nearly direct copying might give rise to a private lawsuit for copyright infringement, but in most

<sup>&</sup>lt;sup>13</sup> "21 Common Animals in Serengeti National Park," Earthlife Expeditions, accessed December 26, 2023, https://www.earthlifeexpeditions.com/common-animals-in-serengeti-national-park

<sup>&</sup>lt;sup>14</sup> "Organize the Last 10 Years of Volcanic Activity into a Table," Starctmag.com, November 30, 2023, https://starctmag.com/top-news/organize-the-last-ten-years-of-worldwide-volcanic-activity-into-a-table-24952-2023

cases the use of third-party content will be less direct and singular. Where LLM-generated content is synthesized from multiple sources, copyright claims will be difficult or impossible. Compounding the challenge of private enforcement, LLMs will likely provide differing answers to the same question over time. Copyright enforcement will be unrealistic for most small businesses, nonprofits and individuals. And potentially injured parties may well be unaware of how LLMs are using their content. In short, private copyright enforcement is unlikely to address this problem.

Copyright protection will fall short for another, even more important, reason: The problem we are highlighting extends beyond copyright infringement. It involves the unfair leveraging of dominant position by search and Big Tech companies; unfair methods of competition; threats to the open internet; and unjust enclosure and privatization of the information commons.

A broader lens is needed: Looking forward, we urge you to investigate the issue of LLMs and search, including to assess these issues:

- What impact will LLM search replies have on the internet and the information commons, including on the future generation of content by individuals and for-profit and nonprofit entities?
- What are the click-through impacts of providing both specific answers and rich, narrative replies in search?
- What are the mechanisms by which LLM search replies draw from sources on the internet?
- What property and contractual claims are impacted by LLM search replies?
- Should LLM search systems owe compensation to content providers?
- Are private remedies available for impacted content providers unfairly and adversely affected by LLM search replies?
- Do search companies integrating LLM replies have a fair use right to draw on internet content; and if so, to what extent and in what instances does that fair use right apply?
- Is the provision of links or footnotes at the end of a rich, narrative reply sufficient to guard against unfair appropriation and the wrongful leveraging of dominant position?
- Does existing law provide sufficient remedy to the problems posed by LLM incorporation into search?
- How does the provision of search responses in audio format affect these questions? For example, what role do links or footnotes play if an LLM-enabled search engine provides an audio response to a query?

Concurrently, we encourage the Federal Trade Commission and/or the U.S. Department of Justice to issue guidelines on the fair use of LLMs in search. We urge consideration of two specific policies as part of a broader guidance:

First, for dominant search platforms – which we believe should include Microsoft's Bing/Copilot because of Copilot's integration into Microsoft 365 – provision of rich, narrative response that reflects content drawn from the internet should be considered a prohibited, anti-competitive practice. (Again, we emphasize that we are discussing a practice distinct from training on internet content to develop the LLM.)

Second, at minimum, LLM-enabled narrative search responses that effectively borrow from individual, specific sources must be prohibited. In establishing this principle, the neural network process by which an LLM generates a reply should not matter; what should matter is the effect. If a search response looks like it is relying on a single source – by producing largely identical content – it should not matter how complicated is the process by which the response is generated.

We acknowledge that the questions we are raising are difficult, but they require rapid answers in light of changing technology.

Thank you for your leadership and for considering these matters.

Sincerely,

Robert Weissman

President, Public Citizen

Robert Weissman

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