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**Before the
U.S. FEDERAL TRADE COMMISSION
Washington, D.C. 20580**

**Re: Solicitation for Public Comments on the Business Practices of
Cloud Computing Providers**

I. Introduction

Accountable Tech respectfully submits the following comment in response to the Federal Trade Commission's solicitation for input on the business practices of cloud computing providers. Accountable Tech is a nonpartisan, nonprofit organization that advocates for structural reforms to repair our information ecosystem and foster a healthier and more equitable democracy.

While we have not historically focused on technical infrastructure, our interest in this topic speaks to its sweeping downstream impacts on the information environment and the shape of our society writ-large. The consolidation of the cloud computing services market by a trio of dominant Big Tech firms – each of whom boasts a trillion-plus dollar valuation, owns massive troves of sensitive data and key touchpoints across the digital economy, and has repeatedly run afoul of both privacy and competition laws – should be cause for great concern to everyone.

This comment very briefly outlines some of the many threats posed by these market dynamics. These threats are compounded by the explosion of corporate interest and investment in advanced artificial intelligence (AI) – and will continue to grow without swift invention.

II. Background on the Cloud Computing Oligopoly

Cloud computing services are rapidly replacing traditional information technology (IT) services, and have become essential underpinnings across nearly every economic sector. The market is set to keep booming, with Gartner estimating that annual global spending on public cloud services will reach a whopping $725 billion in 2024[1] – a nearly three-fold increase since just 2020.[2]

While the cloud services ecosystem is complex and encompasses a variety of participants, it sits atop a foundation controlled largely by three dominant firms who, in turn, provision remote access to their raw computing resources on demand: Amazon (Amazon Web Services or AWS), Microsoft (Azure), and Google (Google Cloud Platform or GCP). These tech giants have invested unfathomable resources to build out the actual infrastructure of the cloud across millions of physical and virtual servers hosted in massive data centers around the globe.[3]

Each of these three so-called 'hyperscalers' also operates its own marketplace with hundreds of first- and third-party products and services that span every level of the cloud stack and integrate with their respective infrastructure. Much as in other digital markets, these firms have the ability and incentive to abuse their gatekeeping power. And they have already drawn scrutiny for a wide range of familiar tactics designed to lock-in customers and raise switching costs, thwart interoperability to kneecap rivals, unfairly preference their own products and business partners, use non-public business data to gain competitive insights, and more. For example:

- [House Antitrust Report on Digital Markets, 2022](): "The Subcommittee has identified several common techniques infrastructure providers use to initially lock-in customers,

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[1]
https://www.gartner.com/en/newsroom/press-releases/2023-04-19-gartner-forecasts-worldwide-public-cloud-end-user-spending-to-reach-nearly-600-billion-in-2023
[2]
https://www.gartner.com/en/newsroom/press-releases/2021-04-21-gartner-forecasts-worldwide-public-cloud-end-user-spending-to-grow-23-percent-in-2021
[3] https://www.ofcom.org.uk/__data/assets/pdf_file/0029/256457/cloud-services-market-study-interim-report.pdf

including contract terms, free tier offerings, and egress fees. The first is long-term contracts. In several responses to the Committee's requests for information, third parties explained they have contracts lasting from three to five years with the infrastructure providers… Many third-party software vendors compete with first-party products listed in the infrastructure provider's console… [Smaller] cloud vendors use the marketplaces of the dominant infrastructure providers to reach customers, which require fees and are subject to competition concerns that are similar to other marketplaces examined [in this] investigation. Market participants have raised concerns that cloud infrastructure providers can preference their own offerings, or offer these products with exceedingly steep discounts… Significantly, because the leading infrastructure providers have access to competitively significant data in the marketplace, they have insight into usage metrics regarding any managed service that runs on their infrastructure. Market participants told the Subcommittee that they have concerns that this data can be used by infrastructure providers to make decisions regarding which types of software to acquire or replicate to offer through their first-party console."

- [Ofcom Cloud Services Market Study – April 2023 Interim Report](): "The practices we are most concerned about are the charging of egress fees, restrictions on interoperability and the structure of committed spend discounts. These are likely to most severely affect customers with more complex requirements. We are most concerned about their impact in relation to AWS and Microsoft, given they have a strong position in the market and undertake all the practices we have identified in some form."

- [Insider, 10/5/21](): Oracle and Cloudflare are attacking Amazon over the notorious fees it charges to get data out of its cloud, setting up the next big battle in the cloud wars

- [Bloomberg, 4/11/22](): Microsoft Customers Decry Cloud Contracts That Sideline Rivals

- [Open Markets Institute, 9/9/22](): Amazon Exploits its Cloud Monopoly to Build Advertising Business

- [TechCrunch, 4/20/23](): Microsoft kickstarts settlement discussions with European cloud companies over antitrust complaints

- [Reuters, 5/19/23](): EU antitrust regulators quiz cloud rivals on Microsoft's request for customer data

III.   Hyperscalers' Toxic AI Arms Race Distorts Markets, Undermines Innovation

Because the cloud infrastructure services market is increasingly dominated by three Big Tech firms, the barriers for new entrants to the market are nearly insurmountable. This consolidation has already yielded harms to competition and consumers – but the recent AI hype cycle and ongoing arms race significantly raise the stakes.

The colossal amount of computational power required to train, test, and continually deploy the kinds of systems at the center of this boom[4] — namely generative AI systems, like large language models (LLMs) and image generators — is further entrenching the hyperscalers' position, while

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[4] https://www.washingtonpost.com/technology/2023/06/05/chatgpt-hidden-cost-gpu-compute/

setting off a toxic competition[5] for supremacy, regardless of the societal cost. And the costs are stacking up quickly.

Even analyzing the playing field from a narrow, pro-business lens reveals a distorted market in which promising upstarts are entirely reliant on the cloud infrastructure providers with the necessary resources to fuel their power-hungry computing systems. That is to say, even the most "innovative" of new companies must operate at the will of incumbent giants who have by-and-large ceased to innovate since becoming dominant.[6]

This takes multiple forms, with the most obvious being acquisitions. Google's parent company Alphabet has bought up at least 30 different AI companies[7], including industry darling DeepMind – which they recently panic-merged with Google Brain.[8] Amazon has snatched up more than a dozen cloud computing companies[9] and up-and-coming AI players specializing in everything from self-driving cars (Zoox) and security (Harvest.ai)[10] to facial recognition (Orbeus)[11] and audio discovery (Snackable.ai).[12] Microsoft's acquisitions have similarly ranged from various cloud companies[13] to would-be competitors in conversational AI, like Semantic Machines and XOXCO.[14] And each hyperscaler has also made significant data acquisitions[15] and talent grabs (so-called 'acqui-hiring' plays)[16] to reinforce their advantages across digital markets. As noted in a 2020 headline from Bloomberg: *Big Tech Swallows Most of the Hot AI Startups*.[17]

But the Big Tech dependencies and threats to free market competition and innovation stretch far beyond acquisitions. Perhaps no company in this space has become more famous, nor more emblematic of these fraught dynamics, than ChatGPT creator OpenAI.

OpenAI was chartered as a nonprofit antidote to shareholder-driven tech giants just a few years ago – a do-gooder innovator whose "primary fiduciary duty is to humanity." By 2019, as the company launched its for-profit arm, they acknowledged the tremendous barriers to entry they faced in a blog post:

> "We've experienced firsthand that the most dramatic AI systems use the most computational power in addition to algorithmic innovations, and decided to scale much faster than we'd planned when starting OpenAI. We'll need to invest billions of dollars in upcoming years into large-scale cloud compute, attracting and retaining talented people, and building AI supercomputers."[18]

CEO Sam Altman echoed this sentiment, telling WIRED, "The amount of money we needed to be successful in the mission is much more gigantic than I originally thought."[19] A couple months

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[5] https://ainowinstitute.org/publication/toxic-competition
[6] https://www.theatlantic.com/technology/archive/2020/01/why-silicon-valley-and-big-tech-dont-innovate-anymore/604969/
[7] https://www.washingtonpost.com/technology/interactive/2021/amazon-apple-facebook-google-acquisitions/#google
[8] https://arstechnica.com/gadgets/2023/04/googles-ai-panic-forces-merger-of-rival-divisions-deepmind-and-brain/
[9] https://www.washingtonpost.com/technology/interactive/2021/amazon-apple-facebook-google-acquisitions/#amazon
[10] https://techcrunch.com/2017/01/09/amazon-aws-harvest-ai/
[11] https://www.bloomberg.com/news/articles/2016-04-05/amazon-said-to-acquire-ai-based-image-analysis-startup-orbeus
[12] https://techcrunch.com/2023/05/05/amazon-quietly-acquired-audio-content-discovery-engine-snackable-ai-to-boost-its-podcast-projects/
[13] https://www.geekwire.com/2019/microsoft-makes-another-cloud-acquisition-swoops-file-migration-startup-mover/
[14] https://blogs.microsoft.com/blog/2018/11/14/microsoft-to-acquire-xoxco-bringing-together-leading-bot-development-communities-to-help-advance-conversational-ai/
[15] https://ainowinstitute.org/publication/toxic-competition#data-mergers
[16] https://techcrunch.com/2022/03/07/zoox-acqui-hires-team-from-robotic-strawberry-picking-startup-strio-ai/
[17] https://www.bloomberg.com/news/articles/2020-03-16/big-tech-swallows-most-of-the-hot-ai-startups
[18] https://openai.com/blog/openai-lp
[19] https://www.wired.com/story/company-wants-billions-make-ai-safe-humanity/

later, Microsoft announced that OpenAI had been inked to an exclusive partnership that would "further extend Microsoft Azure's capabilities" in which "OpenAI will port its services to run on Microsoft Azure" and "Microsoft will become OpenAI's preferred partner for commercializing new AI technologies."[20]

Flash forward, and OpenAI has effectively been co-opted by Microsoft, who has now invested some $13 billion and is entitled to 75% of OpenAI's profits until it recoups that money, and 49% after that, up to a potential $92 billion profit on its investments. The technology has been swiftly incorporated into many of Microsoft's core products and services, becoming a key selling point as they seek to establish themselves as the leaders in AI and throughout the entire cloud stack. And although Altman continues to tout OpenAI's independence, *"he concedes that if Microsoft were to cut his company off from its servers, its work would be effectively paralyzed."*[21]

While the Microsoft-OpenAI arrangement most clearly epitomizes the stranglehold dominant cloud infrastructure providers have over high-powered AI companies – and their desperation to bring those companies into their cloud computing ecosystems – these dynamics are widespread. For example, Google has now poured at least $300 million into the promising "AI safety and research company," Anthropic[22], which in turn announced that GCP would be its preferred cloud provider.[23]

That's just one of many major investments Google has made recently in AI startups, with an eye toward – among other things – cutting into Microsoft and Amazon's lead in the oligopolized cloud market.[24,25] The arms race amongst this triopoly poses serious anticompetitive threats upstream and downstream, short-term and long-term. It is almost certain to chill innovation as they further consolidate talent and resources, and subjugate nascent rivals – many of whom offer products that compete with theirs (i.e. Anthropic's Claude chatbot and Google's Bard) or could otherwise threaten their dominance – to their own corporate interests.

Given the gatekeeping roles this trio of trillion-dollar tech giants play, not only throughout the cloud stack, but across the entire modern economy – and the rap sheet that each has accrued for repeated abuses – we should all be concerned by the prospect of concentrating even more power in their hands. If we don't change course, this flywheel will continue to expand their massive advantages in consumer data and competitive intelligence, all of which can be leveraged across business lines for unfair gain in adjacent digital markets. As competitive constraints are eroded, consumers and market participants will continue to pay a steeper and steeper price in the form of privacy erosion and degradation in quality of services.

This market consolidation will pose even more urgent threats if it unfolds at the same time as critical infrastructure across the public and private sectors increasingly moves to the cloud – especially given the artificial barriers the dominant cloud computing providers have erected to discourage the adoption of multi-cloud models, which can bolster security. Without intervention to address these issues, we will end up in a circumstance in which the three hyperscalers serve as single points of failure[26], and a system-wide outage to any of them could be catastrophic – a concern recently flagged by the U.S. Treasury Department:

[20] https://news.microsoft.com/2019/07/22/openai-forms-exclusive-computing-partnership-with-microsoft-to-build-new-azure-ai-supercomputing-technologies/

[21] https://www.bloomberg.com/news/features/2023-06-15/microsoft-prepares-to-cash-in-on-openai-partnership-with-copilot

[22] https://www.anthropic.com/

[23] https://web.archive.org/web/20230204000714/https://www.anthropic.com/news/announcement

[24] https://www.theinformation.com/articles/google-invests-in-ai-startup-runway-to-wrest-cloud-business-from-aws

[25] https://www.ft.com/content/5b17d011-8e0b-4ba1-bdca-4fbfdba10363?shareType=nongift

[26] https://www.vice.com/en/article/bvnmvv/aws-is-the-internets-biggest-single-point-of-failure

"As discussed elsewhere in this report, there is evidence that the financial sector's adoption of cloud services is notable and growing, particularly with the three major CSPs: AWS, GCP, and Microsoft Azure. A large system failure or data breach at one of these CSPs could impact multiple financial institutions or U.S. consumers"[27]

IV.   Anticompetitive Harms Are the Tip of the Iceberg

Still, the immediate harms of this toxic competition run much deeper. When OpenAI rolled out ChatGPT to overwhelming fanfare, and their partners at Microsoft soon thereafter splashily announced they were integrating the technology into core products like its Bing search engine and Edge browser[28], it kicked the AI arms race into overdrive.

After years of conducting celebrated AI research, deliberative work on cutting-edge technology, and closed-door testing to ensure such products met their safety and ethics standards, Google hastily moved to launch its own ChatGPT competitor – Bard – over the stalwart objections of their own employees, who warned, among other things, that it appeared to be "a pathological liar" and posed serious risks to users.[29] All three hyperscalers have laid off teams devoted to responsible AI even as they've continued to rush out a near-constant stream of new automated tools that carry significant ethical risks.[30]

There is no shortage of literature underscoring the breadth, severity, and immediacy of the harms emanating from generative AI tools and other automated systems that have been deployed with limited safeguards amidst this rush. They include turbocharging persuasive propaganda and election manipulation, exacerbating bias and discrimination, further eroding privacy and autonomy, unleashing a deluge of sophisticated scams, and undermining and exploiting artists, journalists, and content creators, to name a few.[31,32]

While it may not be intuitive, these second-order societal damages are inextricably tied to consolidation in the cloud computing services market upon which AI relies, and the toxic competition of the three hyperscalers who are throwing caution to the wind in pursuit of victory. Their unqualified embrace of these high-risk automated systems – recklessly embedding them throughout the vast technological ecosystems and marketplaces they operate – has reverberated downstream, setting off a race to the bottom as companies scramble to incorporate half-baked AI tools into their own products and tout them in press releases and on earnings calls.

And this isn't even touching upon the other seismic impacts of the AI arms race on the workforce, the environment, education, and other pivotal issues. Current dynamics are incentivizing the same kind of *Move Fast And Break Things* approach that proved calamitous for the social media era and information ecosystem writ-large – but with potentially even starker consequences in the AI era.

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[27] https://home.treasury.gov/system/files/136/Treasury-Cloud-Report.pdf

[28] https://blogs.microsoft.com/blog/2023/02/07/reinventing-search-with-a-new-ai-powered-microsoft-bing-and-edge-your-copilot-for-the-web/

[29] https://www.bloomberg.com/news/features/2023-04-19/google-bard-ai-chatbot-raises-ethical-concerns-from-employees

[30] https://www.marketwatch.com/story/big-tech-cuts-ai-ethics-teams-even-as-development-ramps-up-3129fb60

[31] https://www.citizen.org/news/a-i-is-already-harming-democracy-competition-consumers-workers-climate-and-more/

[32] https://epic.org/wp-content/uploads/2023/05/EPIC-Generative-AI-White-Paper-May2023.pdf

Conclusion

Without intervention, the cloud computing services market will continue to grow rapidly in size and importance, while also further consolidating in the hands of dominant Big Tech firms who have consistently prioritized their own corporate power and profits over the public good.

These gatekeepers' ubiquity – both throughout the cloud stack, and in non-cloud markets – is particularly dangerous. They have the ability and incentive to abuse their power as marketplace operators to unfairly advantage not only the products and services they offer within those ecosystems, but also in adjacent digital markets, extracting and integrating valuable data inputs and competitive intelligence across their many business lines in a mutually reinforcing manner. Moreover, the AI arms race is only accelerating this flywheel, and exacerbating the societal carnage unleashed as it turns.

Given the urgency of the threats at hand, we applaud the Federal Trade Commission – not just for soliciting public input on this topic, but for continuing to use the totality of its authority to confront these harms, including by issuing clear reminders that there is no AI exemption from the laws on the books[33], and by pursuing appropriate remedies like algorithmic deletion when firms use ill-gotten data to train their automated systems.[34]

We look forward to the FTC continuing to use its full force to tackle these challenges, and sincerely hope that Congress will finally rise to the challenge and pass bipartisan legislation to rein in Big Tech before it's too late.

Respectfully submitted,

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[33] https://www.ftc.gov/system/files/ftc_gov/pdf/EEOC-CRT-FTC-CFPB-AI-Joint-Statement%28final%29.pdf

[34] https://www.ftc.gov/news-events/news/press-releases/2023/05/ftc-doj-charge-amazon-violating-childrens-privacy-law-keeping-kids-alexa-voice-recordings-forever