

No. 21-1333

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IN THE  
**Supreme Court of the United States**

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REYNALDO GONZALEZ, *et al.*,

*Petitioners,*

*v.*

GOOGLE LLC,

*Respondent.*

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ON WRIT OF CERTIORARI TO THE UNITED STATES  
COURT OF APPEALS FOR THE NINTH CIRCUIT

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**BRIEF OF ECONOMISTS AS *AMICI CURIAE*  
IN SUPPORT OF RESPONDENT**

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**QUESTION PRESENTED**

Does 47 U.S.C. §230(c)(1) immunize interactive computer services when they make targeted recommendations of information provided by another information content provider, or only limit the liability of interactive computer services when they engage in traditional editorial functions (such as deciding whether to display or withdraw) with regard to such information?

**TABLE OF CONTENTS**

	<i>Page</i>
QUESTION PRESENTED .....	i
TABLE OF CONTENTS.....	ii
TABLE OF CITED AUTHORITIES .....	iii
INTEREST OF AMICI CURIAE.....	1
SUMMARY OF ARGUMENT.....	1
ARGUMENT.....	2
I. Targeted Content Sustains the Digital Economy.....	2
II. <i>Untargeted</i> Content Can Produce Biased Results and Targeting Can Mitigate the Bias.....	6
a. Bias Can Result from Lack of Targeting...	7
b. Targeting Can Mitigate Bias.....	9
III. Improvement in Targeting Methods Requires an Environment That Fosters Innovation.....	9
CONCLUSION .....	10

## TABLE OF CITED AUTHORITIES

	<i>Page</i>
<b>Other Authorities</b>	
Anja Lambrecht & Catherine Tucker, <i>Algorithm-Based Advertising: Unintended Effects and the Tricky Business of Mitigating Adverse Outcomes</i> , 31 NIM Mktg. Intel. Rev. 24, 29 (2021), <a href="http://bit.ly/3Wk1x43">http://bit.ly/3Wk1x43</a> . . . . .	9
Anja Lambrecht & Catherine Tucker, <i>Algorithmic Bias? An Empirical Study of Apparent Gender-Based Discrimination in the Display of STEM Career Ads</i> , 65 Mgmt. Sci. 2966 (2019), <a href="http://bit.ly/3VPI76P">http://bit.ly/3VPI76P</a> . . . . .	7, 8
Anja Lambrecht & Catherine Tucker, <i>When Does Retargeting Work? Information Specificity in Online Advertising</i> , 50 J. of Mktg. Res. 561 (2013), <a href="https://bit.ly/3V3dJp9">https://bit.ly/3V3dJp9</a> . . . . .	10
Avi Goldfarb & Catherine Tucker, <i>Digital Economics</i> , 57 J. of Econ. Lit. 3 (2019), <a href="https://bit.ly/3jeSF24">https://bit.ly/3jeSF24</a> . . . . .	4
Avi Goldfarb & Catherine Tucker, <i>Online Display Advertising: Targeting and Obtrusiveness</i> , 30 Mktg. Sci. 389 (2011), <a href="https://bit.ly/3FzaTCl">https://bit.ly/3FzaTCl</a> . . . . .	9, 10
Avi Goldfarb, <i>What is Different About Online Advertising?</i> , 44 Rev. of Indus. Org. 115 (2014), <a href="https://bit.ly/3FDtCgo">https://bit.ly/3FDtCgo</a> . . . . .	4

*Cited Authorities*

	<i>Page</i>
Erik Brynjolfsson & Avinash Collis, <i>How Should We Measure the Digital Economy</i> , Harv. Bus. Rev. (2019), <a href="http://bit.ly/3iJaZjH">http://bit.ly/3iJaZjH</a> . . . . .	6
Erik Brynjolfsson, Avinash Collis, & Felix Eggers, <i>Using Massive Online Choice Experiments to Measure Changes in Well-Being</i> , 116 Proceedings of the Nat'l Acad. of Scis. 7250 (2019), <a href="https://bit.ly/3IsqldL">https://bit.ly/3IsqldL</a> . . . . .	5
Statista, <i>Online advertising revenue in the United States from 2000 to 2021 (in billion U.S. Dollars)</i> , Statista Res., Aug. 16, 2022, <a href="https://bit.ly/3Zo0iUv">https://bit.ly/3Zo0iUv</a> . . . . .	3
U.S. Census Bureau, <i>North American Industry Classification System, 2017 NAICS Definition 51913, 519130, Internet Publishing and Broadcasting and Web Search Portals</i> , <a href="http://bit.ly/3CITiI0">http://bit.ly/3CITiI0</a> . . . . .	3
U.S. Census Bureau, <i>Service Annual Survey Latest Data (NAICS-basis): 2021, Table 4: Estimated Sources of Revenue for Employer Firms: 2013-2021</i> , <a href="https://bit.ly/3iimnD3">https://bit.ly/3iimnD3</a> . . . . .	3
YanLau, <i>A Brief Primer on the Economics of Targeted Advertising</i> , U.S. Fed. Trade Comm'n, Bureau of Econ. (2020), <a href="https://bit.ly/3HInIx5">https://bit.ly/3HInIx5</a> . . . . .	2, 4

## INTEREST OF AMICI CURIAE<sup>1</sup>

*Amici curiae* are Ph.D. economists with expertise in the economics of the digital economy. They are fellows of the Technology Policy Institute, a non-profit 501(c)(3) exempt private foundation organized under the laws of Washington, D.C., with no parent company, and no publicly held corporation owns 10% or more of its stock. *Amici* submit this brief to assist the Court in understanding the importance to the overall economy of targeted content, recommendation engines, and manual and automated content moderation. A list of *amici* is attached as an appendix to this brief.

## SUMMARY OF ARGUMENT

Online platforms have assumed a central role in the way people communicate with each other, transact commerce, and obtain news and other information. Individuals can retrieve relevant and useful information in seconds, make personal and professional connections, and access (at no financial cost to themselves) a range of valuable goods and services that otherwise would be costly or difficult to find. Companies and other organizations can find customers and other audiences that once remained elusive. Key to achieving these benefits is the ability of digital platforms to use algorithms to recommend particular content to a

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<sup>1</sup> Pursuant to Supreme Court Rule No. 37.6, no counsel for a party authored the brief in whole or in part and no counsel or party made a monetary contribution intended to fund the preparation or submission of the brief. No person other than the *amici*, its members or counsel made such a monetary contribution. Respondent, Google LLC, is one of over 20 general corporate donors of the Technology Policy Institute.

particular user based on that content’s likely relevance to that user – a process known as targeting.

The economic benefits of targeted content extend far beyond the revenues the platforms themselves generate from digital advertising. The targeting of search results, advertising, and other content to users fuels the overall digital economy and generates massive benefits for all consumers of information, goods, and services and for the firms that use the platforms to reach them.

In this brief, we present some economic considerations that the *amici* urge the Court to consider in its deliberations. Any decision in this case that could change the structure of the digital economy must consider the decision’s full economic consequences, including the effects on other firms and on consumer welfare resulting from online platforms’ targeting of relevant content to their users.

## ARGUMENT

### I. Targeted Content Sustains the Digital Economy

Online businesses such as digital platforms generally earn revenue by running ads and/or charging customers for digital goods and services. Yan Lau, *A Brief Primer on the Economics of Targeted Advertising*, U.S. Fed. Trade Comm’n, Bureau of Econ. (2020), <https://bit.ly/3HInIx5>. Targeted advertising revenues benefit the platforms, but also reflect and support benefits across the digital economy. The businesses that pay for the ads benefit by reaching more customers who are likely to buy their goods and services, and consumers who see the ads benefit from easier access to those goods and services.

Online advertising revenue totaled approximately \$200 billion in 2021, up from about \$30 billion just ten years earlier.<sup>2</sup> The figure below shows U.S. Census Bureau estimates of the revenues of business entities classified under North American Industry Classification System (NAICS) Code 51913 (Internet Publishing and Broadcasting and Web Search Portals).<sup>3</sup> The Census data show online advertising to be a growing and predominant share of revenues compared to other sources.

#### Sources of Revenue for NAICS 51913

(Internet Publishing and Broadcasting and Web Search Portals)

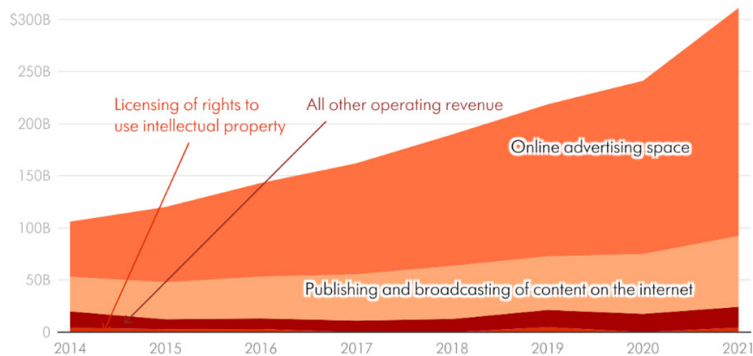


Chart: Technology Policy Institute • Source: U.S. Census 2021 Service Annual Survey Table 4



<sup>2</sup> Estimates vary, but generally center around \$200 billion, depending on industry definitions. Statista estimates \$190 billion for 2021. Statista, *Online advertising revenue in the United States from 2000 to 2021 (in billion U.S. Dollars)*, Statista Res., Aug. 16, 2022, <https://bit.ly/3Zo0iUv>. The U.S. Census Bureau estimates about \$218 billion. U.S. Census Bureau, *Service Annual Survey Latest Data (NAICS-basis): 2021, Table 4: Estimated Sources of Revenue for Employer Firms: 2013-2021* (Nov. 22, 2022), <https://bit.ly/3iimnD3>.

<sup>3</sup> U.S. Census Bureau, *North American Industry Classification System, 2017 NAICS Definition 51913, 519130, Internet Publishing and Broadcasting and Web Search Portals*, <http://bit.ly/3CITi10>.



The ability to deliver particular ads for specific goods or services to consumers who are more likely to find those ads relevant to their lives is a key innovation in digital advertising. The two-way communication between an end user and server creates consumer data that enables advertisers to target potentially interested consumers and track the efficacy of their ad campaigns better than they can with offline advertisements. Avi Goldfarb, *What is Different About Online Advertising?*, 44 Rev. of Indus. Org. 115 (2014), <https://bit.ly/3FDtCgo>.

The digital economy depends on algorithms that direct particular content to users based on its likely relevance to them. The “ad-supported business model [with targeted ads] sustains much of the online economy,” connecting consumers, websites, and firms that produce products and ads for those products. Lau, *supra*, at 2 (footnote omitted).

Though online ad revenues accrue to online platforms, the benefits of targeted advertising services are felt across the digital economy. Avi Goldfarb & Catherine Tucker, *Digital Economics*, 57 J. of Econ. Lit. 3 (2019), <https://bit.ly/3jeSF24>. Advertisements promote the businesses paying for those ads. Additionally, advertising revenues subsidize services that consumers and companies rely on, like search, email, and social media.

These services are valuable. One study, depicted in the figure below, for example, found that the median value consumers place on the ability to use search engines is more than \$17,500 per year and email more than \$8,400 per year, as measured by the amount they would need to be compensated in order to willingly forego using free search engine and email services – a figure known as “willingness

to accept.” Erik Brynjolfsson, Avinash Collis, & Felix Eggers, *Using Massive Online Choice Experiments to Measure Changes in Well-Being*, 116 Proceedings of the Nat’l Acad. of Scis. 7250 (2019), <https://bit.ly/3Isq1DL>.

#### Per Consumer Value of Select Internet Services, 2017

Willingness to accept estimates from online choice experiments

▨ 95% Confidence Interval

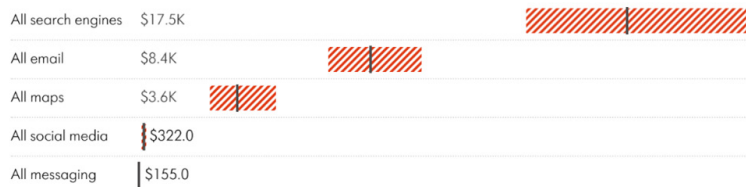


Chart: Technology Policy Institute • Source: Erik Brynjolfsson, Avinash Collis, and Felix Eggers (2019)



The concept of “consumer welfare” measures the difference between how much someone values a service and how much they pay for it, and thus differs from the more traditional economic measure of gross domestic product (GDP), which considers only what consumers actually pay. *Id.* (“We find that digital goods generate a large amount of consumer welfare that is currently not captured in GDP.”).

Some rough calculations based on the experimental research of Brynjolfsson, *et al.* show the magnitude of the consumer welfare generated by search engines powered by algorithms. If we consider just the U.S. working age population of nearly 207 million people, the “willingness to accept” estimates suggest that gross consumer welfare from search is about \$3.6 trillion per year.<sup>4</sup>

<sup>4</sup> This amount, \$3.6 trillion, is \$17,500 (the median per person annual value of search in derived by Brynjolfsson and his colleagues)

In short, the action of targeting advertising and content to online users supports not just online platforms, but also the entire digital economy and beyond.

## II. *Untargeted Content Can Produce Biased Results and Targeting Can Mitigate the Bias*

Though the underlying litigation here focuses on alleged harms caused by algorithmic recommendation of content, the Court should consider what the alternatives to targeted content would be and what effects might flow from those alternatives. One alternative is the removal of recommended targeting of content and advertisements (presumably through the use of random or mass distribution methods); in other words, *untargeted* content. To understand the impact of targeted versus untargeted content, scholars have examined differences in outcomes between these two types of displayed information.

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multiplied by 207 million working-aged people in the U.S. The actual estimate based on this research may be higher or lower depending on the shape of the demand curve, which is not available in the paper. This estimate seems particularly large when compared to total U.S. GDP, which was almost \$26 trillion in 2022. Several factors explain this. First, the \$3.6 trillion estimate is gross welfare, not net. Consumers also value the information they themselves provide, so net welfare would subtract that value. Second, the better comparison is not to GDP but to total gross welfare, which is not a figure that, to our knowledge, has been estimated. Total economic benefits will always exceed GDP because it includes not just measurable output, but also consumer benefits not measured. Finally, even the measured GDP for online services is believed to be much lower than their actual contribution due to prices frequently being zero. Erik Brynjolfsson & Avinash Collis, *How Should We Measure the Digital Economy?*, Harv. Bus. Rev. (2019), <http://bit.ly/3iJaZjH>.

### a. Bias Can Result from Lack of Targeting

Online content placed without regard to a targeted audience can lead to biased results. One field study examined gender bias in non-targeted ads for science and technology job opportunities displayed across 191 countries. Anja Lambrecht & Catherine Tucker, *Algorithmic Bias? An Empirical Study of Apparent Gender-Based Discrimination in the Display of STEM Career Ads*, 65 *Mgmt. Sci.* 2966 (2019), <http://bit.ly/3VPI76P>. The field test found that although the ads were not targeted at one gender or another, the science and technology job ads reached fewer women than men. *Id.* at 2966. That is, the ad campaign ended up biased towards men over women, even if no settings directed the ads to men over women. *Id.*

The explanation for the bias and method for mitigating it, however, was unexpected. The biased outcome of the gender-neutral ad campaign in this study was not the result of a belief – either by people or algorithm – that men were more suited to science and technology jobs. Instead, the discriminatory outcome was due to another optimization metric of the targeting – cost effectiveness. *Id.* at 2967 (“The key allocation mechanism that dictates the distribution of information is not a measure of the desirability of information dissemination, but instead is the return on investment on advertising across all industry sectors.”).

A singular focus on cost-effectiveness can lead to biased results because online advertisements are placed via auctions. “When a user loads a webpage, the ad platform typically conducts an advertising auction in

the background that determines which advertiser will show an ad to that user.” *Id.* at 2969. Advertisers set a budget and the auction software automatically optimizes the number of impressions,<sup>5</sup> taking into account the bids of other advertisers and the prices that they are willing to pay for each set of ads. *See id.* (“The outcome of the auction is usually determined by the maximum bid an advertiser places, relative to the bids placed by other advertisers.”) The pricing of bids by one advertiser can “spillover” to the decisions of another advertiser “even if they are advertising different products.” *Id.* at 2967.

According to the study by Lambrecht & Tucker, the marketing literature suggests that because women largely control household purchases, they are potentially more valuable targets for advertisers, making “female ‘eyeballs’ . . . more expensive than male eyeballs.” *Id.* Because the female demographic is most sought after by advertisers, there is typically more competition in the auction to show ads to women, so those ads are more expensive. Because men are less expensive to reach, a campaign with a limited budget aimed simply at maximizing in a cost-efficient manner the number of people who see the ad will end up reaching more men.

This study of science and technology job ads is a powerful demonstration that advertising campaigns that are not targeted can result in biased outcomes.

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<sup>5</sup> “‘Impressions’ refers to the number of times a particular ad was shown.” Lambrecht & Tucker, *Algorithmic Bias?*, at 2970.

## b. Targeting Can Mitigate Bias

Counterintuitively, more targeting, not less, can be a solution to this bias. For example, separate campaigns targeted to different demographic groups can solve these unintended outcomes by ensuring an advertiser reaches a more diverse range of consumers. In the case of the science and technology job listing bias discussed above, one simple solution would be to have one campaign aimed at men and another at women, with more resources directed at the women’s campaign to reflect the higher value of women’s views. However, such demographic targets may be prohibited by federal law, including equal employment and anti-discrimination rules. Anja Lambrecht & Catherine Tucker, *Algorithm-Based Advertising: Unintended Effects and the Tricky Business of Mitigating Adverse Outcomes*, 31 NIM Mktg. Intel. Rev. 24, 29 (2021), <http://bit.ly/3Wk1x43>.

## III. Improvement in Targeting Methods Requires an Environment That Fosters Innovation

While untargeted ads can produce biased results, it is also true that targeting does not always work as expected. For example, one large-scale field study found that the obtrusiveness<sup>6</sup> of a particular ad graphic and the matching of ads to website content separately increased ad effectiveness, but the two simultaneously reduced

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<sup>6</sup> “Obtrusive” ads strive “to be highly visible relative to . . . website content,” where “some Web campaigns deliberately tried to make their ad stand out from the content by using video, creating a pop-up, or having the ad take over the Web page.” Avi Goldfarb & Catherine Tucker, *Online Display Advertising: Targeting and Obtrusiveness*, 30 Mktg. Sci. 389 (2011), <https://bit.ly/3FzaTCI>.

effectiveness. Goldfarb & Tucker, *Online Display Advertising*, at 389.

Another study – a large field experiment that collected and analyzed data from a travel website – found that using data from a consumer’s web browsing behavior helped target ad content to the individual user, but, surprisingly, these “dynamic” ads were found to be “on average less effective than their generic equivalent.” Anja Lambrecht & Catherine Tucker, *When Does Retargeting Work? Information Specificity in Online Advertising*, 50 *J. of Mktg. Res.* 561 (2013), <https://bit.ly/3V3dJp9>. After adding additional data about the user’s changing product preferences, however, the website showed improved performance. *Id.*

The point here is that developers are constantly analyzing data to better understand how targeting technology works (and doesn’t work) so that targeting algorithms can be improved. They should be able to continue to do this work in a legal environment that fosters innovation that will help websites deliver and display content in ways that consumers prefer and that benefit the broader economy.

## CONCLUSION

The Court’s decision in this case could impact millions of firms that display targeted content and could have significant economic effects given the scope and scale of this technology in online advertising and product markets.

Targeted content supports the entire economy (not only the digital economy), generating benefits not just for

platforms, but also for consumers and other firms that supply goods, services, and information to the public. Any decision in this case therefore should take account of the full economic consequences.

In its deliberations in this case, the Court should carefully consider the impact of making significant changes to the structure of the digital ecosystem given the importance of recommendation algorithms to today's economy.

Respectfully submitted,

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January 19, 2023



## **APPENDIX**

**TABLE OF APPENDICES**

	<i>Page</i>
APPENDIX A — LIST OF <i>AMICI CURIAE</i> . . . . .	1a

APPENDIX A — LIST OF *AMICI CURIAE*

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<sup>1</sup> *Amici curiae* appear in their individual capacities; institutional affiliations are listed for identification purposes only.