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ADVANCING RACIAL EQUITY THROUGH TECHNOLOGY POLICY

By Julia Rhodes Davis, Eliza McCullough, Sarah Treuhaft, and Rachel Gichinga

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Executive Summary

As leading technology companies have grown exponentially over the last decade, so too have concerns about their outsized impact on our economy and democracy. How to regulate these firms has emerged as a key policy question of our time.

Racial equity is not yet a significant part of the mainstream tech policy debate. This needs to change. How we set the rules for these companies will have significant consequences throughout society, particularly for low-income communities and communities of color. As we consider policy choices, we must ask: Will these new technology policies serve to erase racial inequities and set us on a course of inclusive prosperity? Or, will they serve to deepen existing inequities?

This report makes the case for centering racial equity in the technology policy debate and presents a policy agenda for doing so. Through original research commissioned from academic experts in the field, a literature review, a policy landscape analysis, and interviews with subject-matter experts, we examined the business model underlying the largest technology firms and its impacts on people and communities of color. We found that the interlocking components of its business model exacerbate racial inequities in access to quality jobs and business opportunities, information, goods and services, and in democratic participation. This report charts a policy path toward a tech sector and economy organized around equity: just and fair inclusion in a society in which all can participate, prosper, and reach their full potential, including the nearly 100 million people in the US living in or near poverty.

Defining the Business Model

Through our research, we found that five key components define the business models and drive the profit strategies of the largest technology companies: data-driven services and computational infrastructure, advertising, market dominance, regulatory influence, and invisible labor. The combination of these five components sets large tech firms apart and allows them to continuously consolidate power, which leads to the replication and amplification of existing racial inequities.

Racial Equity Implications

In a society riddled by individual, institutional, and structural racism, these business model elements—separately and combined—exacerbate and widen existing racial disparities in access to mobility-boosting opportunities as well as exposure to harms. Four key dimensions of racial equity are impacted:

- **Democratic participation**. Large tech companies' business model depends on collecting user data to generate advertising revenue, which allows advertisers to target demographic groups. This in turn enables targeted mis- and disinformation that spreads virally and impedes access to democratic processes for communities of color, as seen in the 2016 and 2020 US presidential elections.

- **Worker power, worker voice, and access to good jobs.** As an indirect result of large tech companies' labor practices, workers of color are pushed into lower-paid tech jobs, which leaves them subject to round-the-clock surveillance, poor working conditions, and an unstable labor market.

- **Equitable access to goods, services, and information.** The computational infrastructure, data-driven services, and advertising components of the dominant tech firms' business model leads to the exclusion of communities of color from digital goods and service provision as well as racial targeting in disinformation campaigns.

- **Ownership and entrepreneurship.** Dominant tech companies control the computational infrastructure and data-driven services that power digital marketplaces and can prioritize their own products and services as well as those of businesses that can afford steep advertising costs —all to the disadvantage of small businesses and entrepreneurs of color.

New Rules for a New Economy

Immediate policy action is needed to address the structural drivers that enable the largest technology companies to conduct business practices that disproportionately harm communities of color and amplify racial inequities in America. We call on the US Congress, the Executive Branch, and independent federal agencies to advance the following five policy priorities:

Center racial equity in all technology regulatory efforts. Current tech regulatory efforts remain race-blind, which allows the tech sector to continue to perpetuate racial equity harms. To advance a society in which all people can flourish, all technology policy and regulatory efforts must proactively prioritize racial equity.

Promote democratic governance of technology. The most dominant tech firms in our economy currently limit the economic and political decision-making power of people of color and low-income workers. To achieve a just and fair society, federal, state, and local governments must set policy that ensures the use of technology by government entities promotes equitable outcomes and does not impede democratic governance.

Build an equitable tech labor market. All workers, including gig, contract, and temporary workers who make up a large segment of the tech sector's invisible labor force, need strong labor protections. In an equitable tech labor market, all tech workers would be able to access high-quality jobs that provide family-sustaining wages and benefits, career advancement and skill development pathways, collective bargaining rights, protection from harassment and discrimination, and safeguards against surveillance and data extraction.

Ensure equitable access to goods, services, and information. The profit strategies that power the tech business model often impede access to goods, services, and information for people of color. Policy interventions should eliminate harm to marginalized communities, evaluate the benefits and risks of public utility classification of information platforms, ensure that data privacy protections are treated as a civil rights issue, and prioritize environmental protections for vulnerable communities from the impacts of computational infrastructure.

Eliminate disparities in ownership and entrepreneurship. Large tech firms neutralize the threat of competition through strategies that either absorb smaller businesses or eliminate their market viability. Without policies that target monopoly power and support competition, this foundational aspect of the underlying business model will continue to exacerbate the racial wealth gap. Policymakers must also proactively remove barriers and provide investments that increase racial equity and inclusion in the tech sector.

A regulatory agenda that centers racial equity will build not only a more equitable tech sector but also a more equitable economy in which everyone has access to the resources they need to thrive. While exclusion and racialized harms cost our society and economy, inclusion and equity bring cascading benefits for all.

The Challenge of Building an Equitable Tech-Driven Economy

Over the last decade, leading technology firms have grown to dominate our economy and mediate nearly every aspect of society. The "big five" (Amazon, Apple, Google, Meta [formerly Facebook], and Microsoft) are collectively valued at more than $8 trillion and are among the eight most valuable companies in the world.[1] While a quarter of the US workforce experienced unemployment at some point during the Covid-19 pandemic, these companies made record-breaking profits, and their products and services became even more essential to our everyday lives.[2]

As these firms have grown exponentially, so too have advocates' and policymakers' concerns about their outsized impact on our economy and democracy—impacts that include rising inequality, diminished competition, viral misinformation and disinformation, and wide-ranging harms caused by software algorithms. For decades, policymakers took a hands off approach to regulation, creating an environment of "permissionless innovation" in which new technologies and business models are permitted by default and any issues they cause can be addressed later.[3] Finally, the debate over how to regulate leading technology companies has now taken center stage.[4]

Racial equity is not yet a significant facet of the mainstream tech policy debate—and this needs to change. How we set the rules for these companies will have significant consequences throughout society. We must ask: Will these new technology policies serve to erase racial inequities and set us on a course of inclusive prosperity? Or, will they serve to deepen our existing inequities? Such inquiry is in line with the equity focus of the federal government as outlined in President Biden's Day One executive order on advancing racial equity.[5]

These questions are salient because systemic racism and inequities in the United States render communities of color particularly vulnerable to the potential harms of the tech business model for consumers, workers, and small-business owners. The digital divide also persists: Black and Latinx households are more likely than white households to depend on smartphones and to lack access to quality broadband internet and computers.[6] Meanwhile, people of color are significantly underrepresented in the tech sector as producers, owners, leaders, and suppliers. Although the lack of diversity in the largest tech companies—and in the tech sector overall—has received some public attention, much less has focused on the relationship between the business model driving these firms and communities of color. While many racial equity advocates have demanded inclusion for people of

[1] Farhad Manjoo, "The Rise of Big Tech May Just Be Starting," *New York Times*, February 16, 2022, https://www.nytimes.com/2022/02/16/opinion/big-tech-stock-market.html; "Largest Companies by Market Cap," https://companiesmarketcap.com

[2] Avie Schneider, "40.8 Million Out of Work in The Past 10 Weeks — 26% of Labor Force," *NPR*, May 28, 2020, https://www.npr.org/sections/coronavirus-live-updates/2020/05/28/863120102/40-8- million-out-of-work-in-the-past-10-weeks; Manjoo, "The Rise of Big Tech May Just Be Starting."

[3] Adam Thierer, *Permissionless Innovation: The Continuing Case for Comprehensive Technological Freedom* (Arlington, VA: Mercatus Center at George Mason University, 2016), https://www.mercatus.org/publications/technology-and-innovation/permissionless-innovation-continuing-case-comprehensive.

[4] Jeremie Greer and Solana Rice, *Anti-Monopoly Activism: Reclaiming Power through Racial Justice*, Liberation in a Generation, 2021, https://www.liberationinageneration.org/wp-content/ uploads/2021/03/Anti-Monopoly-Activism_032021.pdf; Yeshimabeit Milner and Amy Traub, *Data Capitalism and Algorithmic Racism*, Data for Black Lives, Demos, 2021, https://www.demos.org/sites/default/files/2021-05/Demos_%20D4BL_Data_Capitalism_ Algorithmic_Racism.pdf.

[5] "Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government," The White House, January 20, 2021, https://www.whitehouse.gov/ briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities- through-the-federal-government/.

[6] Sara Atske and Andrew Perrin, *Home Broadband Adoption, Computer Ownership Vary by Race, Ethnicity in the U.S.*, (Washington, DC: Pew Research Center, July 16, 2021), https://www.pewresearch.org/fact- tank/2021/07/16/home-broadband-adoption-computer-ownership-vary-by-race-ethnicity-in-the-u-s.

color in the tech sector and regulatory decision-making, their interests are often not well represented when policymakers pass key legislation or set new regulations.

This report makes the case for centering racial equity in the technology policy debate and presents a policy agenda for doing so. Through original research commissioned from academic experts in the field, a literature review, a policy landscape analysis, and interviews with subject-matter experts, we examined the business model underlying the largest technology firms and its impacts on people and communities of color. We found that the interlocking components of its business model—from data, cloud computing, and advertising to market dominance (or the ability of a firm to influence competition and market prices) and reliance on invisible labor—exacerbate racial inequities in access to quality jobs and business opportunities, information, goods, and services, and in democratic participation.

Policy decisions have allowed our largest tech companies to operate in a way that perpetuates our country's racial divides and social and economic inequities. But policy is also the way forward. We have the power to change how we guide the development of these companies.

This report charts a path toward a tech sector and economy organized around just inclusion in a society in which all can participate, prosper, and reach their full potential, including the nearly 100 million people in the US living in or near poverty. By understanding how the current business model causes negative impacts for racial equity, we can work to build new policies that not only do no harm but also work to build a more inclusive and equitable tech sector and society.

We are not the first to raise these issues. This report builds on the work of many organizations that have raised concerns about how the tech sector harms people of color and proposed solutions. Algorithmic Justice League, Athena Coalition, Change the Terms Coalition, Color of Change, Data 4 Black Lives, Data & Society Research Institute, EPIC, Free Press, Georgetown Center for Privacy and Technology, Just Futures Law, Liberation in a Generation, MediaJustice, Mijente and #NoTechForICE, MPower Change, Our Data Bodies, and The Leadership Conference on Civil and Human Rights, among many others, have long been at the forefront of this work. We hope this report underscores and builds upon their contributions.

The report unfolds in three sections.

- First we define the five key interlocking components of the business model underlying dominant technology firms.

- Second, we describe the ways in which the business model has particularly negative impacts on people and communities of color.

- Third, we identify five key policy priorities for a tech regulatory framework that advances racial equity.

Original Research Informing This Report

This report was informed by a series of research papers commissioned from academics and researchers working at the intersection of racial equity and the technology sector.

1. **Cierra Robson and Ruha Benjamin (Princeton University), "Silence No More: Addressing Anti-Competitive Opportunity Hoarding in the Tech Industry."**
Workplace discrimination stifles opportunities for Black and Indigenous communities and people of color with talent and competitiveness within the tech industry. Current laws against well-known anticompetitive practices that only protect against de jure racism are not enough to ensure racial equity.

2. **Fallon Wilson (#BlackTechFutures Research Institute), "Supporting Black Businesses Online with Federal Policies and Recommendations."**
Black-owned businesses face structural barriers to success in the tech sector. Policies to close the digital divide, facilitate support for Black businesses in new tech environments, and pass antimonopoly legislation are crucial to ensure racial equity in tech entrepreneurship.

3. **Jasmine McNealy (University of Florida), "A Power Analysis of Platforms: Expression, Equitable Governance, and Participation."**
Our current regulatory framework is not fit for the tech sector. The relatively small number of platforms we have to communicate with each other online hold a lot of power. Therefore, we conducted a power analysis that looks at who the key players are in this space, their relationships with each other, and the impacts of those relationships.

4. **Amina Kirk and Mae Watson Grote (Change Machine), "Data: Power or Pawn? Advancing Equity by Reimagining the Consumer-Data Relationship."**
Financial technology ("fintech") is used to exploit the power imbalances between users and institutions that collect data. Big Tech is a growing player in this arena and is exacerbating the sector's power imbalances in ways that harm people of color who navigate financial insecurity.

5. **Nicol Turner Lee (Brookings Institution), "It's Time for an Updated Civil Rights Regime Over Big Tech."**
Racism is at the center of the technologies that govern our private and public lives. We need an updated civil rights regime to address the multitude of racial inequities perpetuated by Big Tech as current civil rights laws are not fully equipped to adequately regulate this sector.

6. **Sarah Myers West (AI Now Institute), "Antitrust, Labor, and Racial Equity: Analysis of 2021 Congressional Antitrust Reforms."**
Currently proposed anti monopoly legislation is poised to improve conditions for tech industry workers, particularly tech workers of color. These bills can be strategically leveraged to promote the needs of low-wage tech workers and improve their labor conditions and pay by reducing Big Tech's market power.

7. **Shelly Steward (The Aspen Institute), "How Platform-Based Work Contributes to the Racial Wealth Gap."**
Platforms, many of which are owned and controlled by Big Tech, weaken the position of workers, particularly workers of color, by making them more disposable and invisible to their employers. Meanwhile, the employer remains shielded from responsibility. We need a range of labor reforms, including ending worker misclassification, establishing public portable benefits, and regulating data extraction.

8. **Ulises Ali Mejias (State University of New York at Oswego), "The People vs. the Algorithmic State: How Government Is Aiding Big Tech's Extractivist Agenda, and What We Can Do About It."**
The government's use of algorithmic decision-making—and its failure to regulate others' use of these technologies—is undermining democratic governance and increasing inequality and racism.

9. **Veena Dubal (University of California, Irvine), "Technology, Fissuring, and Race."**
Big Tech hires workers through third-party platforms, temporary arrangements, and other classification schemes to shed risk, responsibility, and labor overhead. These workers, who are disproportionately people of color, make less money than direct employees and are generally treated as "second-class" citizens. We must look at how low-wage tech workers are organizing under these conditions for a path forward.

Defining the Business Model

To understand how to build an equitable tech-driven economy, we must start with its core driver: the business models of its most prominent industries. Through our research, we found that five key components define the business models and drive the profit strategies of the largest technology companies:

- Data-driven services and computational infrastructure

- Advertising

- Market dominance

- Regulatory influence

- Invisible labor

Individual elements of the business model are not exclusive to the largest technology firms. Other large retailers and service providers also have highly stratified labor markets with many low-wage workers, and many use data-driven services to inform their marketing.[7] But the combination of these five components, combined with the rate and scale of dominant tech firms' growth, sets them apart from other types of companies. By leveraging these profit strategies, these companies are able to continuously consolidate power, which leads to the replication and amplification of existing racial inequities as described in the next section of this report.

By examining these interlocking elements, we can understand the structures that enable racial inequities and begin to chart a regulatory path toward a more just and equitable tech sector and economy.

Data-Driven Services and Computational Infrastructure

Data-driven services (also known as cloud services) are the tools and processes used to host, make sense of, and extract value from data collected by technology platforms and products. Some commercially available examples of data-driven services are Amazon Web Services (AWS), a suite of services, storage, and computational power; Google Analytics; and the Azure OpenAI Service.[8]

These data-driven services are built upon the computational infrastructure that Amazon, Google, and Microsoft, respectively, own.[9] Computational infrastructure entails data storage and computing power, which allow a large amount of complex data-driven services to run at scale.[10] So, where data-driven services are essentially software applications, computational infrastructure encapsulates the hardware and logic layers these applications run on.

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[7] Eunice Hyunhye Cho, Anastasia Christman, Maurice Emsellem, Catherine K. Ruckelshaus, and Rebecca Smith, *Chain of Greed: How Walmart's Domestic Outsourcing Produces Everyday Low Wages and Poor Working Conditions for Warehouse Workers* (New York, NY: National Employment Law Project, June 2021), https://s27147. pcdn.co/wp-content/uploads/2015/03/ChainOfGreed.pdf; Jennifer Rainey Marques, "The COVID-19 Data Plan: 3 Innovative Ways Johnson & Johnson is Using Data Science to Fight the Pandemic," Johnson & Johnson, January 13, 2021, https://www.jnj. com/innovation/how-johnson-johnson-uses-data-science-to-fight- covid-19-pandemic.

[8] Many digital products and services we use are built on AWS; Netflix is a familiar example of this. Google Analytics is a web analytics service offered by Google that tracks and reports website traffic. Azure OpenAI service enables enterprise customers, by invitation, to fine-tune language models to their specific needs; for example, some organizations may need to automatically transcribe recordings from remote meetings or even generate code. These activities require artificial intelligence that can replicate language in a reliable way.

[9] Agathe Balayn and Seda Gürses, "Beyond Debiasing: Regulating AI and Its Inequalities." *EDRi*. September 20, 2021. https://edri.org/wp-content/uploads/2021/09/ EDRi_Beyond-Debiasing-Report_Online.pdf.

[10] Agathe Balayn and Seda Gürses. *Beyond Debiasing: Regulating AI and Its Inequalities.*

Ownership of and control over key parts of computational infrastructures give these (now legacy Big Tech) companies privileged access to production data, as well as an advantage in shaping machine learning practices.[11] The scale of the services they provide ensures market capture and makes them not only an attractive choice for both the private and public sector but also a necessary one.[12] Journalist Kashmir Hill demonstrated the need to rely on dominant tech firms' services in their 2019 article series, in which they endeavor to exclude these companies from their life over the course of several weeks but are unable to do so because of how pervasive these firms are in all aspects of daily life.[13] "Critics of the big tech companies are often told, 'if you don't like the company, don't use its products.' These companies are unavoidable because they control internet infrastructure, online commerce, and information flows."[14] Organizations of all shapes and sizes rely on—and are locked into—these services, creating a significant barrier to entry for competitors.[15] In addition, government agencies responsible for distributing resources, including public benefits like Medicaid and food assistance that serve disproportionately low-income communities of color, have become increasingly dependent upon data-driven services.[16] Using data driven services and computational infrastructure owned by large technology companies is a nearly unavoidable aspect of modern life.

This lock-in dynamic has several downstream impacts. Because of a lack of data portability, Black, Indigenous, and other consumers of color can find themselves stuck with platforms on which they have experienced discrimination or exclusion.[17] Being able to move data to alternative services easily would promote competition and reduce switching costs. However, the lack of alternatives means platforms have little incentive to fix the problems they create.[18]

Ownership of computational infrastructure also enables these large tech firms to dominate the provision of data-driven services and to consolidate economic, political, and social power through access to greater amounts of data, more market share, and increased revenue and profits. Government agencies responsible for distributing resources, including public benefits like Medicaid and food assistance, have become increasingly dependent upon data-driven services.

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[11] Agathe Balayn and Seda Gürses, "Beyond Debiasing: Regulating AI and its inequalities."

[12] Hongfe Gui. "Data, Big Tech, and the New Concept of Sovereignty." *Journal of Chinese Political Science*, May 3, 2023, 1–22. https://doi.org/10.1007/s11366-023-09855-1.

[13] Kashmir Hill, "Life Without the Tech Giants," *Gizmodo*, January 22, 2019, https://gizmodo.com/life-without-the-tech- giants-1830258056.

[14] Hill, "Life Without the Tech Giants."

[15] According to Gartner, "The market for cloud infrastructure and platform services is consolidating, with over 90% of the worldwide market concentrated in just four cloud providers. Amazon Web Services and Microsoft lead the market with Alibaba and Google as the next closest competitors. This consolidation shows no sign of slowing down. The worldwide consolidation is occurring largely as a result of enterprises seeking industrialized offerings that bring with them a level of dependability and a wide breadth of functionality to satisfy all enterprise workloads." See Raj Bala et al., "Magic Quadrant for Cloud Infrastructure and Platform Services," July 27, 2021, https://www.gartner.com/doc/reprints?id=1-271OE4VR&ct=210802&st=sb

[16] "Virginia Eubanks, "The Digital Poorhouse." *Harper's Bazaar.* 2018, https://harpers.org/archive/2018/01/the-digital-poorhouse/.

[17] Antonio Garcia Martinez, "Are Facebook Ads Discriminatory? It's Complicated," *Wired*, June 11, 2019, https://www.wired.com/story/are-facebook-ads-discriminatory-its-complicated/; Julia Angwin and Terry Parris Jr., "Facebook Lets Advertisers Exclude Users by Race," *ProPublica*, October 28, 2016, https://www.propublica.org/ article/facebook-lets-advertisers-exclude-users-by-race; Gennie Gebhart, Bennett Cyphers, and Kurt Opsahl, "What We Mean When We Say 'Data Portability,'" Electronic Frontier Foundation, September 13, 2018, https://www.eff.org/deeplinks/2018/09/ what-we-mean-when-we-say-data-portability.

[18] Jasmine McNealy, "A Power Analysis of Platforms: Expression, Equitable Governance, and Participation," November 22, 2021, https://www.policylink.org/sites/default/files/Jasmine%20McNealy.pdf.

Algorithmic Decision Systems, Carceral Technologies, and Racial Inequities

Algorithmic decision systems (ADS) are an important category of data-driven services.[19] Algorithms are essentially predetermined sets of instructions and rules that computers follow to complete tasks or solve problems.[20] In the public sector, ADS can be defined as "any systems, software, or process that use computation to aid or replace government decisions, judgments, and/or policy implementation that impact opportunities, access, liberties, rights, and/or safety. [ADS] can involve predicting, classifying, optimizing, identifying, and/or recommending."[21] ADS are increasingly used to make important decisions about people's lives, including social service and public benefit allocation, hiring and firing, and credit-worthiness determination. While algorithmic decision-making is purported to increase speed, efficiency, and even fairness, in reality ADS often produce incorrect, unjust, harmful decisions.[22] ADS have particular implications for racial equity because of the disproportionate risks posed to people of color for two reasons. First, ADS replicate and amplify the biases and harms in broader society.

In *Race After Technology*, Ruha Benjamin cites a study in which a team of computer scientists at Princeton examined potential biased tendencies present in a widely used language-processing algorithm; the team found that it categorized white-sounding names as "pleasant" and Black-sounding ones as "unpleasant."[23]

Second, as scholar Virginia Eubanks illustrates in her book, *Automating Inequality*, the use of ADS is more prevalent in high-stakes decision-making for poor people or people of color as they access public benefits, live in highly policed neighborhoods, and enter the health-care system.[24] This reinforces their marginalization and compounds their vulnerability to more discrimination, surveillance, and disproportionate representation in the criminal–legal system.

Importantly, many large tech companies profit from selling carceral technologies, such as facial recognition, electronic monitoring, and "predictive" policing systems.[25] Amazon sells its Ring security camera network to police departments while Microsoft has made $42 billion from contracts with the US Department of Defense since 2004.[26] These technologies reinforce and exacerbate existing discriminatory practices and racial inequities. Predictive policing algorithms, for example, rely on collecting a range of information, like historical crime data, to "predict" the likelihood of a crime occurring in a certain area or by certain people.[27] The outputs of these systems are presented as neutral, but there has been significant critique and push-back on the use of these technologies.

- Researchers and practitioners have noted that because the data these systems pull from reflect racial and gender disparities, the predictions they produce are inherently racially

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[19] Algorithmic decision systems are also known as, and often used interchangeably with, automated decision systems.

[20] "What is an Algorithm? An 'in a Nutshell' Explanation," ThinkAutomation, accessed April 15, 2021, https://www. thinkautomation.com/eli5/what-is-an-algorithm-an-in-a-nutshell- explanation/.

[21] Rashida Richardson, "Defining and Demystifying Automated Decision Systems," *Maryland Law Review*, posted March 26, 2021, Forthcoming 2022, https://ssrn.com/abstract=3811708.

[22] Robyn Caplan, Joan Donovan, Lauren Hanson, and Jeanna Matthews, *Algorithmic Accountability: A Primer* (New York, NY: Data & Society Research Institute, 2019), https://datasociety.net/ library/algorithmic-accountability-a-primer/.

[23] Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code* (Cambridge, UK: Polity Press, 2019), https://www. ruhabenjamin.com/race-after-technology.

[24] Virginia Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor* (New York, NY: Picador, St. Martin's Press, 2018), https://us.macmillan.com/ books/9781250074317/automatinginequality.

[25] Amazon provides over 1,000 police departments with access to local Ring networks. Residents in these networks can sign up to share their camera footage with the police departments. Edward Ongweso Jr, "Police and Big Tech Are Partners in Crime. We Need to Abolish Them Both," *Vice*, June 25, 2020, https://www.vice.com/ en/article/8898g3/police-and-big-tech-are-partners-in-crime-we- need-to-abolish-them-both.

[26] Kim Lyons, "Amazon's Ring Now Reportedly Partners with More than 2,000 US Police and Fire Departments," *The Verge*, January 31, 2021, https://www.theverge.com/2021/1/31/22258856/ amazon-ring-partners-police-fire-security-privacy-cameras; "Digital Destroyers: How Big Tech Sells War on Our Communities," Big Tech Sells War, November 22, 2021, https://bigtechsellswar. com.

[27] Tim Lau, "Predictive Policing Explained," Brennan Center for Justice, April 1, 2020, https://www.brennancenter.org/our-work/ research-reports/predictive-policing-explained.

biased and also threaten Fourth Amendment protections from unreasonable search and seizure.[28]

- Algorithmic Justice League, Color of Change, MediaJustice, Mijente, and many others have organized around this issue, demanding an end to the production of carceral technologies that surveil and harm communities of color.[29]
- In 2019, Google workers staged a walkout over the company's multiple contracts with US Immigration and Customs Enforcement.[30]

It is important to note that carceral technologies are not confined to the largest tech firms; many smaller companies also develop and deploy these products. Much more regulatory scrutiny and oversight are needed to prevent racialized harms from companies of all sizes.

Advertising

Advertising is a key revenue stream—platform companies build products that capture user attention, providing a steady stream of content while gathering immense amounts of data on who the users are and what they are consuming. These companies deploy algorithms that extract value from platform users, in which they are "inscribed, processed and reproduced as subjects of data… becom[ing] constituted, and not merely mediated, by…data."[31] Customized content is generated on the basis of who potential customers are, what they currently want, and what they may want—or could be steered toward—in the future, keeping platform users constantly engaged. In exchange for this unpaid content, large tech firms monetize user attention by sharing the user insights they generate and audience segmentation tools with advertisers, who bid for the right to show users ads on the pages they visit based on assumed preferences or consumption demands.[32] Until recently, third-party cookies could track or monitor online activity through so-called "consent popups" and make algorithm-driven predictions to target users with ads at a later time.[33]

The most prevalent tech advertising profit strategy relies on the primary mass collection, analysis, and packaging of user data, while tech companies' relationship with data owners and creators is almost entirely extractive.[34] Meta, for example, gathers data from small businesses on the platform and turns it into a commodity for advertisers rather than sharing that data with the businesses that generated it,

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[28] Joy Buolamwini and Timnit Gebru, "Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification," *Proceedings of the 1st Conference on Fairness, Accountability, and Transparency, PMLR* 81 (2018):77-91, https://proceedings.mlr. press/v81/buolamwini18a.html. Andrew Guthrie Ferguson, "Predictive Policing and Reasonable Suspicion," *Emory Law Journal* 62, no. 259 (May 2012), https://papers.ssrn.com/sol3/papers. cfm?abstract_id=2050001.

[29] MediaJustice, "Carceral Tech and How We're Fighting Back!" MediaJustice, July 30, 2019, https://mediajustice.org/news/carceral-tech-and-how-were-fighting-back/.

[30] Noam Scheiber and Kate Conger, "The Great Google Revolt," *The New York Times Magazine*, February 18, 2020, https://www.nytimes.com/interactive/2020/02/18/magazine/google-revolt. html.

[31] Colin Koopman, *How We Became Our Data: A Genealogy of the Informational Person* (Chicago, IL: University of Chicago Press, 2019).

[32] Facebook specifically has also been known to share user information from its platform with other companies (not necessarily advertisers but "partners"), including other large tech firms such as Amazon and Microsoft. This sharing is not explicitly for advertising but rather to support platform integration features. However, it was found that the companies would hold on to user information or insights, even after these features no longer existed (Gabriel J.X. Dance, Michael LaForgia, and Nicholas Confessore, "As Facebook Raised a Privacy Wall, It Carved an Opening for Tech Giants," *New York Times*, December 18, 2018, https://www. nytimes.com/2018/12/18/technology/facebook-privacy.html); Alfred Ng, "What Does It Actually Mean When a Company Says, 'We Do Not Sell Your Data'?" *The Markup*, September 2, 2021, https://themarkup.org/ask-the-markup/2021/09/02/what-does-it- actually-mean-when-a-company-says-we-do-not-sell-your-data.

[33] In February 2022, European Union data authorities declared illegal the consent pop-up system, which claimed to be in compliance with the General Data Protection Regulation (GDPR) but was in fact committing multiple violations in its processing of personal data.

[34] Amina Kirk and Mae Watson Grote, "Data: Power or Pawn? Advancing Equity by Reimagining the Consumer-Data Relationship," November 2021, https://www.policylink.org/sites/default/files/ Kirk_and_Grote_082422.pdf.

shifting the value of data to only those who have purchasing power.[35] This creates an environment in which big brands can buy dominance on platforms through the quantity and quality of their targeted ads,[36] and by so doing, diminish the space available for small businesses (which are the vast majority of businesses owned by people of color) to advertise and grow. In addition, mass data collection and analysis can enable racist targeting in ad delivery – like promoting ads that steer job seekers of color towards lower wage work and away from high wage roles, thereby exacerbating existing racial inequities in the workforce.[37]

Market Dominance

By establishing market dominance, the largest technology firms capture technical advancements, command markets, and protect their revenue streams. These mechanisms for consolidating power reinforce existing racial and economic inequities – keeping wealth concentrated in the hands of a few primarily white-led companies.

Through aggressive M&A strategies, large tech firms gain dominance in their original sector. First, they use strategies such as undercutting prices, to hold their customers captive, as Amazon has with third-party sellers on their platform.[38] They then make acquisitions in new sectors to add revenue streams and outflank competitors.[39] For example, since its founding, Google has made 268 acquisitions within both its dominant industries of search engines and advertising and new industries, like artificial intelligence (AI).[40] Between January and September 2021, large technology companies spent at least $264 billion buying up competitors, often with the intent of shutting them down or making them discontinue underlying products.[41]

Large tech firms enhance their ability to outpace competitors and establish market dominance by participating in the markets that they own and operate. For example, Amazon often copies goods sold by companies on their platform and promotes these products over their competitors'.[42] An investigation by The Wall Street Journal found that Apple advantages their apps over third-party vendors in their App Store.[43] As Lina Khan, now Chairwoman of the Federal Trade Commission (FTC), argued in 2019: "this structure places dominant platforms in direct competition with some of the businesses that depend on

[35] "The Truth About Google, Facebook, and Small Businesses" (Washington, DC: American Economic Liberties Project, May 2021), https://www.economicliberties.us/wp-content/uploads/2021/05/Corporate-Power-Quick-Takes_5_Final.pdf.

[36] "The Truth About Google, Facebook, and Small Businesses."

[37] Ali Muhammad, Piotr Sapiezynski, Miranda Bogen, Aleksandra Korolova, Alan Mislove, and Aaron Rieke, "Discrimination through Optimization: How Facebook's Ad Delivery Can Lead to Skewed Outcomes," Proceedings of the ACM on Human-Computer Interaction, September 12, 2019, https://arxiv.org/ pdf/1904.02095.pdf; Martinez, "Are Facebook Ads Discriminatory? It's Complicated."; Louise Matsakis, "Facebook's Ad System Might Be Hard-Coded for Discrimination," Wired, April 6, 2019, https:// www.wired.com/story/facebooks-ad-system-discrimination/; Angwin and Parris Jr., "Facebook Lets Advertisers Exclude Users by Race."

[38] Lina M. Khan, "Amazon's Antitrust Paradox," The Yale Law Journal 126, no. 3 (January 2017): 564-907, https://www.yalelawjournal. org/note/amazons-antitrust-paradox.

[39] Chris Alcantara, Kevin Schaul, Gerrit De Vynck, and Reed Albergotti, "How Big Tech Got So Big: Hundreds of Acquisitions," The Washington Post, April 21, 2021, https://www.washingtonpost. com/technology/interactive/2021/amazon-apple-facebook- google-acquisitions/.

[40] Alcantara, et al., "How Big Tech Got So Big."

[41] Kiran Stacey, James Fontanella-Khan, and Stefania Palma, "Big Tech Companies Snap up Smaller Rivals at Record Pace," Financial Times, September 19, 2021, https://www.ft.com/content/e2e34de1- c21b-4963-91e3-12dff5c69ba4.

[42] Spencer Soper, "Got a Hot Seller on Amazon? Prepare for E-Tailer to Make One Too," Bloomberg, April 20, 2016, https://www. bloomberg.com/news/articles/2016-04-20/got-a-hot-seller-on- amazon-prepare-for-e-tailer-to-make-one-too.

[43] Tripp Mickle, "Apple Dominates App Store Search Results, Thwarting Competitors," The Wall Street Journal, July 23, 2019, https://www.wsj.com/articles/apple-dominates-app-store-search- results-thwarting-competitors-11563897221?shareToken=st44e6 8b42ce5f45f5bd573dae5f8f0f5c.

them, creating a conflict of interest that platforms can exploit to further entrench their dominance, thwart competition, and stifle innovation."[44]

Large tech firms also establish market dominance through capture of R&D advancements, such as Meta's ongoing acquisitions of virtual and augmented reality companies that they have used to become a leading firm in this space.[45] In doing so, the small businesses that are bought are locked out of not only future profits but also intellectual property rights and benefits.

The strategies large tech firms use to establish market dominance consolidate power among those who already have it, thereby reinforcing market structures that systematically favor incumbents (which are overwhelmingly controlled and owned by white men), and reproduce racial and gender inequities.[46] This undermines competition and exacerbates the economic and structural issues that entrepreneurs of color face, such as limited access to startup capital and loans.[47]

Regulatory Influence

The largest technology companies create powerful interdependencies with the federal government by providing computational infrastructure and technical services and exercising soft power through lobbying, campaign donations, and hiring former government personnel. These strategies, amplified by companies' market dominance, help tech companies influence public policy to protect their revenue streams and evade regulation.[48]

Over the past two decades, government agencies have become increasingly reliant on large tech companies for cloud computing power. These companies have received billions of dollars in contracts for provision of computational infrastructure to federal, state and local agencies, primarily ones that disproportionately surveil and enact violence against communities of color in both the US and abroad.[49] The Covid-19 pandemic has only intensified this dynamic, with state and local governments often turning to large tech companies for assistance in everything from contact tracing to testing and vaccine rollout – even though the services these companies promised were often poorly executed.[50]

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[44] Lina Khan, "The Separation of Platforms and Commerce," *Columbia Law Review* 119, no. 4 (September 2019), https://scholarship.law. columbia.edu/faculty_scholarship/2789/.

[45] Prableen Bajpai, "Facebook (FB): Innovating the Worlds of Virtual and Augmented Reality," Nasdaq, July 21, 2021, https://www. nasdaq.com/articles/facebook-fb%3A-innovating-the-worlds-of- virtual-and-augmented-reality-2021-07-21.

[46] Rebecca Kelly Slaughter, "Antitrust at a Precipice," presented at the GCR Interactive: Women in Antitrust, Federal Trade Commission, Washington DC, November 17, 2020, https://www.ftc.gov/system/ files/documents/public_statements/1583714/slaughter_remarks_ at_gcr_interactive_women_in_antitrust.pdf.

[47] Tyler Goodwin, "Analysis: Using Antitrust Law as a Means for Racial Equity," *The Plug*, June 22, 2021, https://www.tpinsights. com/free-articles/analysis-using-antitrust-law-as-a-means-for- racial-equity.

[48] Ulises Ali Mejias, "The People vs. The Algorithmic State: How Government Is Aiding Big Tech's Extractivist Agenda, and What We Can Do About It," November 22, 2021, https://www.policylink.org/sites/default/ files/Ulises%20Ali%20Mejias_082222.pdf

[49] Frederic Lardinois, "Google Wins $35 Million U.S. Government Contract Over Microsoft," *Tech Crunch*, May 1, 2012, https:// techcrunch.com/2012/05/01/google-wins-35-million-u-s- government-contract-over-microsoft/; Alan Weissberger, "U.S. Government Multi-Cloud Competition; Telus Selects Google Cloud," IEEE Communications Society Technology Blog, February 11, 2021, https://techblog.comsoc. org/2021/02/11/u-s-government-multi-cloud-competition-telus- selects-google-cloud/; Lance Whitney, "Google Scores Big Federal Government Contract," *CNET*, December 2, 2010, https://www. cnet.com/tech/services-and-software/google-scores-big-federal- government-contract/; "Digital Destroyers: How Big Tech Sells War on Our Communities." Furthermore, since 2004, the Department of Defense and Department of Homeland Security alone have spent at least $44 billion on contracts with Amazon, Google, Microsoft, Meta, and Twitter ("Digital Destroyers: How Big Tech Sells War on Our Communities"). Microsoft, Amazon, and Google recently received solicitations for a multibillion dollar contract with the Department of Defense to build out their Joint Warfighting Cloud Capability (Jared Serbu, "DoD Picks Amazon, Microsoft, Google and Oracle for Multibillion Dollar Project to Replace JEDI Cloud," Federal News Network, November 19, 2021, https://federalnewsnetwork.com/defense-main/2021/11/dod- picks-amazon-microsoft-google-and-oracle-for-multibillion-dollar- project-to-replace-jedi-cloud/).

[50] Kaiser Health News, "How Newsom's Reliance on Big Tech in Pandemic Undermines Public Health System," *U.S. News*, May 6, 2021, https://www.usnews.com/news/best-states/ articles/2021-05-06/salesforce-google-facebook-how-big-tech- undermines-californias-public-health-system; Tony Romm, Elizabeth Dwoskin, and Craig Timberg, "U.S. Government, Tech Industry Discussing Ways to Use Smartphone Location Data to Combat Coronavirus," *The Washington Post*, March 17, 2020, https://www.washingtonpost.com/technology/2020/03/17/ white-house-location-data-coronavirus/.

Google's testing site pilot failed to keep appointment slot availability updated, particularly in low-income communities of color, while Apple's exposure alert system had low uptake, leading to inaccurate data.[51]

The Biden Administration's plan for a "National Artificial Intelligence Research Resource" also illustrates growing tech-government interdependence. The plan proposes an investment in shared computing and data infrastructure that would be licensed from large tech companies. TheAI Now Institute and Data & Society Research Institute expressed concerns that the plan will entrench tech companies' control of computational infrastructure by providing these companies with government funding to expand their proprietary computing environments while also tightening interdependencies between government agencies and the tech sector.[52]

The National Science Foundation's (NSF) computational research program with Amazon provides another example of government reliance on computing power and technical services from large tech companies. The program funds research projects assessing discrimination and fairness in AI systems.[53] Amazon provides engineering support as well as partial project funding.[54] Just six months after the program launched, a report by The Intercept found that Amazon planned to ban words like "fairness," "pay raise," and "plantation" from their internal warehouse worker chat platform – used by a workforce that is disproportionately people of color.[55] By giving companies like Amazon a role in assessing algorithmic fairness, entities entrusted with the public interest risk promoting technology that enables discrimination and favors corporate interests – as highlighted by these recent algorithmic union busting efforts.

The interdependencies between government agencies through provision of computational infrastructure and technical services creates opportunities for tech companies to influence regulation. As Ulises Meijias explains, government reliance on tech companies for key activities and operations creates "an inherent conflict of interest" that can stymie meaningful policy change.[56]

Large tech firms also work to influence regulation through lobbying efforts. In 2021, Meta and Amazon were among the top ten lobbying spenders, committing nearly $40 million to pushing for policies that would protect their revenue streams from economic downturn caused by the coronavirus.[57] As Ulises Mejias describes in his contribution to this paper, these tens of millions spent on lobbying provide a basis for much of large tech firms' ability to influence political decision-making.[58]

Lobbying efforts have allowed dominant tech firms to circumvent civil rights protections, namely application of private right of action.[59] The implementation of this protection would empower individual consumers to sue tech companies that violate any provision of civil rights law rather than relying on government actors to enforce legal violations under a statute.[60] Prohibiting private right of action has

[51] Nicole Westman, "The Pandemic Showed That Big Tech Isn't a Public Health Savior," *The Verge*, June 3, 2021, https://www. theverge.com/2021/6/3/22514951/pandemic-public-health- solutions-google-apple-facebook.

[52] AI Now Institute and Data & Society, "Request for Information (RFI) on an Implementation Plan for a National Artificial Intelligence Research Resource," October 1, 2021, https:// ainowinstitute.org/AINow-DS-NAIRR-comment.pdf.

[53] National Science Foundation, "NSF Program on Fairness in Artificial Intelligence in Collaboration with Amazon," February 2021, https://beta.nsf.gov/funding/opportunities/nsf-program- fairness-artificial-intelligence-collaboration-amazon.

[54] National Science Foundation, "NSF Program on Fairness in Artificial Intelligence."

[55] Ken Klippenstein, "Leaked: New Amazon Worker Chat App Would Ban Words Like 'Union,' 'Restrooms,' 'Pay Raise,' and 'Plantation,'" *The Intercept*, April 2022, https://theintercept.com/2022/04/04/ amazon-union-living-wage-restrooms-chat-app/.

[56] Mejias, "The People vs. The Algorithmic State."

[57] In 2021, Meta and Amazon ranked seventh and ninth, respectively among companies that spent the most dollars on lobbying efforts. See Open Secrets, "Top Spenders," 2022, https://www. opensecrets.org/federal-lobbying/top-spenders?cycle=2021. Gangadharan, "Working Around Democracy."

[58] Mejias, "The People vs. The Algorithmic State"

[59] Benjamin Powers, "How Big Tech Is Quietly Pushing for Watered- down State Privacy Laws," *Grid*, April 11, 2022, https://www.grid. news/story/technology/2022/04/11/big-tech-turns-to-an-old- industry-playbook-when-passing-state-privacy-legislation/.

[60] Powers, "How Big Tech Is Quietly Pushing for Watered-down State Privacy Laws."

helped these firms avoid legal consequences when their products have discriminated against people of color – like when Latinx and Black social media users disproportionately received disinformation about the 2016 and 2020 elections on their social media feeds.[61]

Technology companies also exercise soft power through campaign donations, which allows them to influence government-decision making. For example, Congressman Eric Swalwell (California-D) recently voted against[62] the most aggressive antitrust measures the day after receiving campaign donations from Apple and Instagram, the latter of which is owned by Meta.[63]

Finally, large tech firms work to influence government policy by hiring former government personnel, particularly from regulatory agencies tasked with overseeing their business practices, and also pushing government agencies to hire former employees for key regulatory positions. Public Citizen found that 60 percent of top FTC officials over the past two decades have either left the agency to work for or in the interests of a large tech firm, joined the agency after working for or in the interests of a large tech firm, or both.[64] Google alone has hired 197 former government officials during this time period.[65]

Invisible Labor

Making low-wage workers less visible to management, consumers, policymakers, and each other is a key element of large tech companies' business model. This is achieved in two ways: stratifying worker classification and embedding surveillance and automated management technology in the workplace. By "invisibilizing" labor, tech companies maximize efficiency and lower labor costs while workers are faced with highly constrained, precarious, and isolated labor conditions.

The workforces employed by large tech companies are highly stratified by race, class, gender, and access to labor protections.[66] Workers at the top of their labor system, including engineers and software developers, are predominantly white and male; make around $200,000 a year; and have access to full employment protections, such as visa sponsorship, paid sick and family leave, stock options, and employer-contributed retirement accounts.[67] Conversely, Black, Indigenous, and Latinx people, women, and nonbinary people are overrepresented as contract software development workers, with 75 percent of those workers in the lowest-paid 25th percentile.[68] Racial disparities in the tech sector employment and pay are more severe than other private sector industries.[69] An original study by the Tech Equity Collaborative found that people of color make up more than half of contract workers in the tech sector

[61] Shannon Bond, "Black And Latino Voters Flooded With Disinformation In Election's Final Days," *NPR*, October 30, 2020, https://www.npr.org/2020/10/30/929248146/black-and-latino- voters-flooded-with-disinformation-in-elections-final-day
[62] Klar, Rebecca. "California Democrats Clash over Tech Antitrust Fight." The Hill, June 24, 2021. https://thehill.com/policy/technology/560140-california-democrats-clash-over-tech-antitrust-fight.
[63] Karl Evers-Hillstrom, "Tech Executives Increased Political Donations amid Lobbying Push," *The Hill*, July 16, 2021, https://thehill.com/business-a-lobbying/business-a-lobbying/563439- tech-executives-increased-political-donations-amid.
[64] Rick Claypool,"TheFTC'sBigTechRevolvingDoorProblem,"Public Citizen, May 23, 2019, https://www.citizen.org/article/ftc-big-tech-revolving-door-problem-report/.
[65] Tech Transparency Project, "Google's Revolving Door Explorer," n.d. https://www.techtransparencyproject.org/googles-revolving- door-explorer-us.
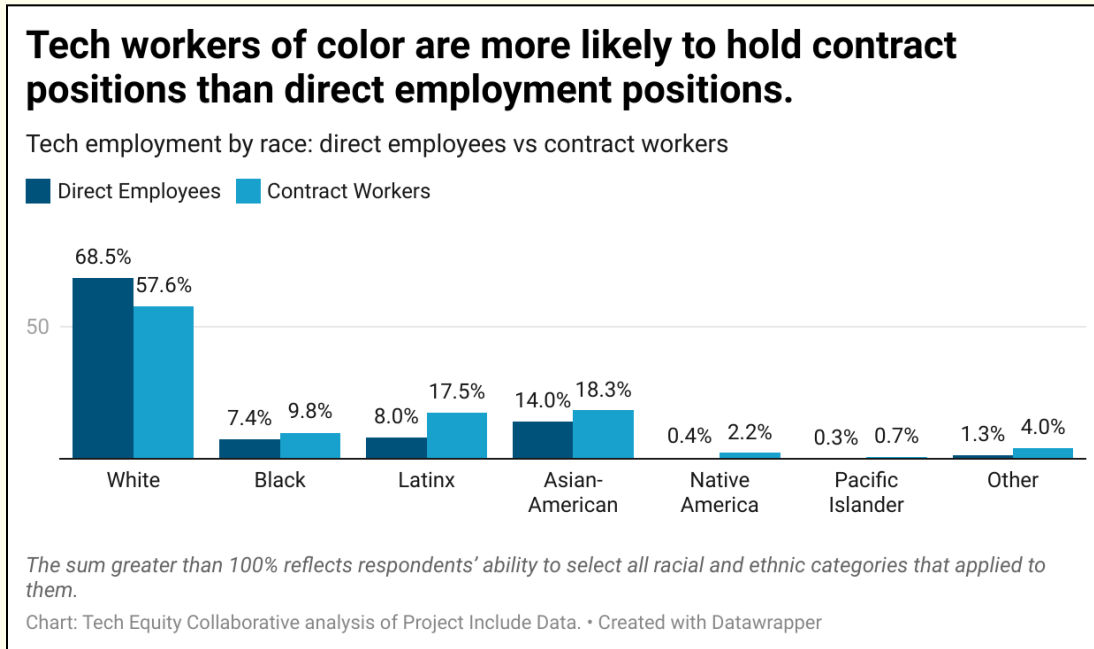[66] Shelly Steward, "How Platform-Based Work Contributes to the Racial Wealth Gap," November 22, 2021, https://www.policylink.org/sites/default/files/Shelly_Steward_082222.pdf; Sarah Myers West, "Antitrust, Labor, and Racial Equity: Analysis of 2021 Congressional Antitrust Reforms," November 22, 2021, https://www.policylink.org/sites/default/files/Shelly_ Steward_082222.pdf.
[67] "Google: Software Engineer: Average Compensation by Level," levels.fyi, November 22, 2021, https://www.levels.fyi/company/Google/salaries/Software-Engineer/.
[68] Tech Equity Collaborative, *Separate and Unequal: How Tech's Reliance on Disproportionately Diverse, Segregated, and Underpaid Contract Workers Exacerbates Inequality* (Oakland, CA: Tech Equity Collaborative, October 14, 2021), https://techequitycollaborative.org/2021/10/14/separate-and-unequal-contract-workers-in-tech/.
[69] Tech Equity Collaborative, *Separate and Unequal: How Tech's Reliance on Disproportionately Diverse, Segregated and Underpaid Contract Workers Exacerbates Inequality*.

but just one third of direct employees.[70] They also found that contract workers not only receive less pay and benefits but report having less protection navigating workplace harms.[71]

Tech workers of color are more likely to hold contract positions than direct employment positions.

Tech employment by race: direct employees vs contract workers

■ Direct Employees ■ Contract Workers

The sum greater than 100% reflects respondents' ability to select all racial and ethnic categories that applied to them.

Chart: Tech Equity Collaborative analysis of Project Include Data. • Created with Datawrapper

Economist David Weil terms this stratification of the tech labor structure and outsourcing and contracting of various production components the "fissured workplace." In the fissured workplace, workers are siloed into numerous categories, making it difficult for them to organize, thus reducing worker power. As Veena Dubal has noted, this labor structure builds upon a legacy of excluding work forces dominated by people of color (like domestic workers and farm laborers) from basic labor protections, such as health care or reporting processes for sexual assault and harassment.[72]

This labor structure exploits those who are living in economic and social precarity. A common practice is to classify workers as independent contractors to remain exempt from providing benefits. Many have argued that independent contractor is a misclassification for these workers as their work is wholly controlled and directed by the tech employer.[73] Amazon's Demand Side Delivery Program illustrates this concept: delivery service partners (DSPs) are independent employers who lease vans from Amazon and hire workers to deliver Amazon goods. While these workers are not technically Amazon employees and do not receive employment benefits , Amazon has total control over their workplace, and can threaten the DSPs with contract termination if they go against any of Amazon's mandates.[74] Because contract and temporary workers lack the labor protections necessary to organize, the multitiered worker classification system prevents them from building power across the supply chain. Instead, workers remain siloed within their classification level, with those in the most precarious positions in the hierarchy often invisible to those at the top.

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[70] Tech Equity Collaborative, *Separate and Unequal: How Tech's Reliance on Disproportionately Diverse, Segregated and Underpaid Contract Workers Exacerbates Inequality.*
[71] Tech Equity Collaborative, *Separate and Unequal: How Tech's Reliance on Disproportionately Diverse, Segregated and Underpaid Contract Workers Exacerbates Inequality.*
[72] Veena Dubal, "Technology, Fissuring, and Race," November 22, 2021, https://www. policylink.org/sites/default/files/veena_dubal_090922.pdf.
[73] Steward, "How Platform-Based Work Contributes to the Racial Wealth Gap."
[74] Brian Callaci, "Entrepreneurship, Amazon Style," *The American Prospect*, September 27, 2021, https://prospect.org/power/entrepreneurship-amazon-style/; Adrienne Williams, advisory committee member, interview with Julia Rhodes Davis and Eliza McCullough on Amazon workplace conditions, October 2021.

This stratified labor structure also hides low-wage workers from customers, obscuring the low-wage labor performed disproportionately by people of color that goes into goods and services production, like the on-demand workforce who earn an average of $2 per hour[75] to train AI to moderate offensive content or transcribe text. This invisible labor not only dehumanizes workers but also reinforces their precarity and disposability, reinforcing racial inequities.[76]

Tech's Hidden Workforce in the Majority World

The business model underlying dominant tech firms also hides low-wage labor by outsourcing production jobs to countries with cheaper wages and less robust labor protections. A substantial amount of outsourced work is done by people in Asia and Southeast Asia.[77] According to a report by the National Labor Committee, workers at a Microsoft supplier located in China regularly have 15-hour shifts six or seven days a week with workers making just 65 cents an hour.[78] Similarly exploitative conditions have been observed in suppliers for Apple at the infamous Foxconn factories where several workers committed suicide in 2010 due to workplace conditions.[79] Similar to the stratified worker classification structure, outsourcing components of the production process makes workers across the supply chain invisible to one another and prevents worker organizing.

Large tech firms also invisibilize low-wage workers by embedding automated management and surveillance technologies in the workplace, to which workers must consent as a condition of their employment.[80]

Surveillance technologies, from the wristbands or scanners that Amazon warehouse workers wear to track their activities to the AI-powered cameras watching Apple call-center employees, allow tech companies to identify "inefficiencies," cut costs, prevent disruptions to production, and maximize profits while reducing face-to-face interaction at every level of production, thus dehumanizing the people behind the production process.[81] For example, Amazon partnered with Netradyne to set up cameras with biometric feedback indicators that record Amazon Fleet drivers while they are on the job and flag any safety infractions.[82] The drivers' performance is under constant surveillance by the cameras from the moment they enter their vehicle, bearing all negative externalities caused by "bugs" in the

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[75] Kotaro Hara, Abi Adams, Kristy Milland, Saiph Savage, Chris Callison-Burch, and Jeffrey P. Bigham, "A Data-Driven Analysis of Workers' Earnings on Amazon Mechanical Turk," *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, April 2018, No: 449, 1–14, https://doi. org/10.1145/3173574.3174023; Louise Matsakis, "A Window Into How YouTube Trains AI To Moderate Videos," *Wired*, March 22, 2018, https://www.wired.com/story/youtube-mechanical-turk- content-moderation-ai/. Sherry Stanley, "The Worker's Perspective," *TWC Newsletter*, March 9, 2021, https://news. techworkerscoalition.org/2021/03/09/issue-5/.

[76] Matsakis, "A Window Into How YouTube Trains AI To Moderate Videos."

[77] As Ricarda Hammer and Tina Park note, the tech sector relies on both resource extraction often and low-wage, highly precarious labor in former colonial states. This supply chain replicates and reinforces global structures of oppression. Ricarda Hammer and Tina Park, "The Ghost in the Algorithm: Racial Colonial Capitalism and the Digital Age," *Political Power and Social Theory* 38 (2021): 221–49, https://doi.org/10.1108/S0198-871920210000038011.

[78] David Barboza, "Chinese Suppliers to Microsoft Cited for Labor Violations," *New York Times*, April 19, 2010, https://www.nytimes. com/2010/04/20/technology/20soft.html.

[79] Saheli Roy Choudhury, "Apple Denies Claims It Broke Chinese Labor Laws in iPhone Factory," *CNBC*, September 8, 2019, https:// www.cnbc.com/2019/09/09/apple-appl-claims-it-broke-china- labor-laws-at-iphone-factory-mostly-false.html; Brian Merchant, "Life and Death in Apple's Forbidden City," *The Guardian*, June 18, 2017, https://www.theguardian.com/technology/2017/jun/18/ foxconn-life-death-forbidden-city-longhua-suicide-apple-iphone- brian-merchant-one-device-extract.

[80] James Vincent, "Amazon Delivery Drivers Have to Consent to AI Surveillance in Their Vans or Lose Their Jobs," *The Verge*, March 24, 2021, https://www.theverge.com/2021/3/24/22347945/amazon- delivery-drivers-ai-surveillance-cameras-vans-consent-form.

[81] West, "Antitrust, Labor, and Racial Equity."

[82] Annabelle Williams, "5 Ways Amazon Monitors It's Employees, from AI Cameras to Hiring a Spy Agency," *Business Insider*, April 5, 2021, https://www.businessinsider.com/how-amazon-monitors- employees-ai-cameras-union-surveillance-spy-agency-2021-4; Lauren Kaori Gurley, "Amazon's AI Cameras Are Punishing Drivers for Mistakes They Didn't Make," *Vice*, September 20, 2021, https:// www.vice.com/en/article/88npjv/amazons-ai-cameras-are- punishing-drivers-for-mistakes-they-didnt-make.

surveillance technology.[83] As a former Amazon Fleet driver explained, management technologies provide inaccurate data, incorrectly classifying certain actions as infractions which could lead to their firing without any opportunity to talk to a human being.[84]

These surveillance technologies create a digital layer between workers and management, customers, and each other which both hides workplace harms and makes it difficult for workers, particularly low-wage workers of color, to have these harms appropriately redressed. These impacts exacerbate harms in a labor environment that already lacks important health and safety standards. Meanwhile, tech companies reap all the benefits created through management systems. Data collected through systems like Netradyne not only allow companies to more tightly "manage" and surveil their workers, but also improve the development of software systems that are then publicly or privately sold to other companies, perpetuating the cycle of harm and mismanagement.[85]

Workers of color are overrepresented in low-wage roles with high surveillance. According to Amazon's reporting, people of color made up 71 percent of field and customer support workers, such as warehouse workers and delivery drivers while Black workers make up 37 percent of these workers, but just 55 percent and 9 percent of their corporate workforce, respectively.[86]

Large tech companies are also using anti-union monitoring software to prevent labor organizing before it happens by running internal anti-union campaigns.[87] Surveillance technology creates artificial distance between workers and employers, and therefore strengthens employers' power.[88] Automated management systems also make workers less visible to one another, further dampening worker solidarity and power.[89]

[83] Jodi Kantor, Karen Weise, and Grace Ashford, "The Amazon That Consumers Don't See," *New York Times*, June 15, 2021, https://www.nytimes.com/interactive/2021/06/15/us/amazon-workers.html; Annie Palmer, "Amazon Is Using AI-Equipped Cameras in Delivery Vans and Some Drivers Are Concerned about Privacy," *CNBC*, February 3, 2021, https://www.cnbc.com/2021/02/03/amazon-using-ai-equipped-cameras-in-delivery-vans.html.
[84] Adrienne Williams, advisory committee member, interview with Julia Rhodes Davis and Eliza McCullough on Amazon workplace conditions.
[85] Barboza, "Chinese Suppliers to Microsoft Cited for Labor Violations."
[86] Amazon Staff, "Our Workforce Data."
[87] Sarah Jaffe, "Tech's New Labor Movement Is Harnessing Lessons Learned a Century Ago," *MIT Technology Review*, June 30, 2021, https://www.technologyreview.com/2021/06/30/1026450/big- tech-amazon-alphabet-labor-unions/.
[88] Wilneida Negrón, "Bossware and Employment Tech Database," *CoWorker.Org*, November 17, 2021, https://home.coworker.org/ worktech; Brishen Rogers, *Beyond Automation: The Law & Political Economy of Workplace Technological Change*, Working Paper (New York, NY: Roosevelt Institute, 2019), https://rooseveltinstitute.org/ publications/beyond-automation-workplace-technological- change/.
[89] Daniel A. Hanley and Sally Hubbard, *Eyes Everywhere: Amazon's Surveillance Infrastructure and Revitalizing Worker Power* (Washington, DC: Open Markets Institute, 2020), https://www. openmarketsinstitute.org/publications/eyes-everywhere-amazons- surveillance-infrastructure-and-revitalizing-worker-power.

Big Tech Business Model Elements and

Key Racial Equity Impacts

	Data-Driven Services	Advertising	Market Dominance	Regulatory Influence	Invisible Labor
Democratic Participation	Government dependency on computational infrastructures is undermining democracy, increasing inequality and racism, and creating opaque forms of governance because agencies have contractual ties to companies that target and harm communities of color.[90]	Behavioral adjustment campaigns ("nudging") have exploited social and historical narratives that are of significance to communities of color to spread misinformation and disinformation via racially targeted political advertisements.[91] This misinformation and disinformation often goes unmoderated, especially if it is not in "standard" English.[92]	Dominant tech firms have been able to circumvent civil rights protections, such as the Equal Employment Opportunity Act, and tech lobbyists have repeatedly blocked proposed legislation that would allow a private right of action.[93]	The logics of privately developed computational systems are opaque and not subject to democratic oversight, diminishing the government's ability to serve in the public interest and concentrating the power of providers like Amazon and Microsoft.[94]	Legal mechanisms, such as non-disclosure and noncompete agreements, suppress wages, limit the mobility of workers of color, and disproportionately exacerbate racial and gender wage gaps for women and Black employees.[95]

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[90] Ongweso Jr, "Police and Big Tech Are Partners in Crime. We Need to Abolish Them Both."

[91] Stephanie Valenica, "Misinformation Online Is Bad in English. But It's Far Worse in Spanish," *The Washington Post*, October 28, 2021, https://www.washingtonpost.com/outlook/2021/10/28/ misinformation-spanish-facebook-social-media/; Selena Hill, "NAACP Launches Facebook Boycott Over Russia Voter Suppression Targeting African Americans," *Black Enterprise*, December 18, 2018, https://www.blackenterprise.com/naacp- facebook-boycott-russian-voter-suppression/; Dominique Harrison, *Civil Rights Violations in the Face of Technological Change* (Aspen, CO: Aspen Institute, October 22, 2020), https://www. aspeninstitute.org/blog-posts/civil-rights-violations-in-the-face- of-technological-change/

[92] McNealy, "A Power Analysis of Platforms: Expression, Equitable Governance, and Participation."

[93] "Address Data-Driven Discrimination, Protect Civil Rights," The Leadership Conference on Civil and Human Rights, February 13, 2019, https://civilrights.org/resource/address-data-driven- discrimination-protect-civil-rights/; Thorin Klosowski, "The State of Consumer Data Privacy Laws in the US." (And Why It Matters)," *New York Times*, September 6, 2021, https://www.nytimes.com/ wirecutter/blog/state-of-privacy-laws-in-us/.

[94] Mejias, "The People vs. The Algorithmic State."

[95] John Lettieri, "Noncompete Agreements and American Workers." – Testimony before the Senate Committee on Small Business," Economic Innovation Group (Testimony), November 14, 2019.

Worker Power/Worker Voice	AI surveillance is often a condition of employment, with tech workers' every move being monitored and potentially penalized.[96]	Tech platforms skew ad delivery by assigning different levels of desirability to users based on racial/ethnic affinity, resulting in job seekers of color being steered towards lower wage work or excluded from seeing certain higher wage roles.[97]	Large tech firms are antagonistic towards organized labor, using anti-union monitoring software and running internal anti-union campaigns.[98]	Large tech firms hire lobbyists to push for labor regulations that protect their profits – such as exempting employees from key labor protections and preventing unionization efforts.[99] As workers of color are overrepresented in low-wage tech positions with the fewest protections, these lobbying efforts magnify existing racial and economic inequities.	Workplace fissuring is rampant, creating classes of workers and exploiting those who are living in economic and social precarity. Black, Indigenous, and Latinx workers, women, and nonbinary people are overrepresented as contract or /gig workers, with 75 percent% of these workers in the lowest-paid 25th percentile.[100]
Access to Goods, Services, and Information	Computational infrastructure's heavy environmental footprint exposes people of color to higher- than- average concentrations of harmful emissions causing 75 percent of	Companies are not legally obligated to inform consumers if they use, sell, or share user data, which can be further sold and shared by third parties.[102] Communities of color have been most harmed by the discriminatory ways in which their data has been used without their consent.[103]	Consolidated ownership of key online platforms necessary for participation in public life forces communities of color to continue to use platforms and ser- vices on which they have experienced discrimination and exclusion.[104]	The Black Box Problem makes regulatory scrutiny more challenging and has allowed tech firms to evade responsibility for the disparate impact of discriminatory acts.[105]	Extreme geographic concentration of high-paying tech jobs – in New York, California, and Massachusetts – limits the industry's ability to connect with, recruit, and retain talent from a diverse pool.[106]

[96]James Vincent, "Amazon Delivery Drivers Have to Consent to AI Surveillance in Their Vans or Lose Their Jobs," *The Verge*, March 24, 2021, https://www.theverge.com/2021/3/24/22347945/amazon- delivery-drivers-ai-surveillance-cameras-vans-consent-form.

[97] Muhammad et al., "Discrimination through Optimization"; Martinez, "Are Facebook Ads Discriminatory? It's Complicated"; Louis Matsakis, "Facebook's Ad System Might Be Hard-Coded for Discrimination," *Wired*, April 6, 2019, https://www.wired.com/ story/facebooks-ad-system-discrimination/; Angwin and Parris Jr., "Facebook Lets Advertisers Exclude Users by Race."

[98] Sarah Jaffe, "Tech's New Labor Movement Is Harnessing Lessons Learned a Century Ago," *MIT Technology Review*, June 30, 2021, https://www.technologyreview.com/2021/06/30/1026450/big- tech-amazon-alphabet-labor-unions/.

[99]Amazon, "Amazon Mechanical Turk," n.d. https://www.mturk.com; Tom James, "Amazon Lobbies to Exempt Employees from Labor Protections," *AP News*, March 8, 2019, https://apnews.com/ article/technology-business-washington-seattle-wa-state-wire- 5c01ffdd9fbb48639fc43bc376f501e4; Reed Albergotti, "Apple Is Lobbying against a Bill Aimed at Stopping Forced Labor in China," *The Washington Post*, November 20, 2020, https://www. washingtonpost.com/technology/2020/11/20/apple-uighur/.

[100] Tech Equity Collaborative, *Separate and Unequal: How Tech's Reliance on Disproportionately Diverse, Segregated, and Underpaid Contract Workers Exacerbates Inequality*.

[102] Thorin Klosowski, "The State of Consumer Data Privacy Laws in the US." (And Why It Matters)," *New York Times*, September 6, 2021, https://www.nytimes.com/wirecutter/blog/state-of- privacy-laws-in-us/.

[103] Becky Chao, Eric Null, and Brandi Collins-Dexter, *Centering Civil Rights in the Privacy Debate* (Washington, DC: Open Technology Institute, 2019), https://www.newamerica.org/oti/reports/ centering-civil-rights-privacy-debate/.

[104] Antonio Garcia Martinez, "Are Facebook Ads Discriminatory? It's Complicated," *Wired*, June 11, 2019, https://www.wired.com/ story/are-facebook-ads-discriminatory-its-complicated/; Julia Angwin and Terry Parris Jr., "Facebook Lets Advertisers Exclude Users by Race," *ProPublica*, October 28, 2016, https://www. propublica.org/article/facebook-lets-advertisers-exclude-users- by-race.

[105] "Managing the Black Box of Artificial Intelligence (AI)," Deloitte, https://www2.deloitte.com/us/en/pages/advisory/articles/black-box-artificial-intelligence.html; Yavar Bathaee, "The Artificial Intelligence Black Box and the Failure of Intent and Causation," *Harvard Journal of Law and Technology* 31, no. 2 (Spring 2018), https://jolt.law.harvard.edu/assets/articlePDFs/v31/The-Artificial-Intelligence-Black-Box-and-the-Failure-of-Intent-and- Causation-Yavar-Bathaee.pdf.

[106] Bhaskar Chakravorti, "To Increase Diversity, U.S. Tech Companies Need to Follow the Talent," *Harvard Business Review*, December 4, 2020, https://hbr.org/2020/12/to-increase-diversity-u-s-tech- companies-need-to-follow-the-talent.

	overall exposure.[101]				
Ownership and Entrepreneurship	Entrepreneurs of color are locked in to platforms that do not adequately serve them because of a lack of interoperability.[107] They bear the burdens of optimization while data collectors and aggregators reap the value that their data creates.[108]	Small businesses run by entrepreneurs of color struggle to compete for customers online while dominant Tech companies have made algorithmic changes to search results in order to boost their own businesses.[109] In their search for resources to stay afloat, these entrepreneurs and other economically insecure people of color are also disproportionately targeted by predatory digital credit and debt management products.[110]	M&A strategy consolidates power among those who already have it, and undermines competition from entrepreneurs of color.[111]	Control and ownership of computational infrastructure gives large tech companies the upper hand over small businesses run by entrepreneurs of color and leads to market exclusion.[112]	Removal of the social safety net has limited or prevented gig and /contract workers from receiving limited or no benefits such as healthcare, unemployment, and worker's compensation, and these workers often end up underpaying to Social Security, affecting their future income.[113]

Racial Equity Implications

The facets of the business model described above produce harms and benefits that are inequitably distributed along the lines of race, ethnicity, and gender. In a society riddled by individual, institutional, and structural racism, these business model elements—separately and combined—exacerbate and widen existing racial disparities in access to mobility-boosting opportunities as well as exposure to harms. Four key dimensions of racial equity are impacted:

[101] Federica Lucivero, "Big Data, Big Waste? A Reflection on the Environmental Sustainability of Big Data Initiatives" *Science and Engineering Ethics* 26 (2020): 1009-1030, https://link.springer. com/article/10.1007/s11948-019-00171-7#citeas; "Study Finds Exposure to Air Pollution Higher for People of Color Regardless of Region or Income," United States Environmental Protection Agency, September 20, 2021, https://www.epa.gov/sciencematters/study-finds-exposure-air-pollution-higher- people-color-regardless-region-or-income#:~:text=In%20the%20United%20States%2C%20people,%2C%20 Climate%2C%20and%20Energy%20Solutions.
[107] Gennie Gebhart, Bennett Cyphers, and Kurt Opsahl,"WhatWe Mean When We Say 'Data Portability,'" Electronic Frontier Foundation, September 13, 2018, https://www.eff.org/ deeplinks/2018/09/what-we-mean-when-we-say-data-portability.
[108] Kirk and Grote, "Data: Power or Pawn."
[109] Kirsten Grind, Sam Schechner, Robert McMillan, and John West, "How Google Interferes With Its Search Algorithms and Changes Your Results," *The Wall Street Journal*, November 15, 2019, https://www.wsj.com/articles/how-google-interferes-with-its-search-algorithms-and-changes-your-results-11573823753.
[110] David Lazarus, "There's a Racial Gap in Marketing by Banks and Payday Lenders, Study Finds," *Los Angeles Times*, April 9, 2021, https://www.latimes.com/business/story/2021-04-09/racist- marketing-banks-payday-lenders.
[111] Tyler Goodwin, "Analysis: Using Antitrust Law as a Means for Racial Equity," *The Plug*, June 22, 2021, https://www.tpinsights.com/free-articles/analysis-using-antitrust-law-as-a-means-for- racial-equity.
[112] Jai Vipra and Sarah Myers West, "Computational Power and AI," AI Now, June 21, 2023
[113] Steward, "How Platform-Based Work Contributes to the Racial Wealth Gap."

- Democratic participation

- Worker power, worker voice, and access to good jobs

- Equitable access to goods, services, and information

- Ownership and entrepreneurship.

Democratic Participation

To protect their revenue streams, large tech companies work to avoid regulatory scrutiny and influence relevant policies through M&A, lobbying, and providing data-driven services to government entities. As government agencies become more dependent on these companies' services, regulators become less able to appropriately respond to the deployment of new technologies—this, in turn, limits the power of individuals who experience harm, which are disproportionately people of color and low-income workers. Furthermore, racially targeted advertising and behavioral modeling tools have led to the proliferation of online disinformation campaigns that stifle democratic participation.

Reduced democratic oversight of public resources

Government agencies responsible for distributing resources, including public benefits like Medicaid and food assistance, have become increasingly dependent upon data-driven services. The logics of these privately developed systems are opaque and not subject to democratic oversight, diminishing the government's ability to serve in the public interest and concentrating the power of providers like Amazon and Microsoft. As Agathe Balayn and Seda Gürses note, "the integration of [the public sector's] everyday operations into current computational infrastructures could significantly transform, if not damage, the ability of public institutions to provide individuals with the necessary conditions in which to exercise their fundamental rights."[114] Since many public services serve disproportionately low-income communities of color, corporate control of these services can amplify existing racial and economic inequities and further concentrate decision-making power into the hands of a small group of primarily white-owned companies.

Racial targeting for disinformation campaigns

The advertising and data-driven service profit strategies have key implications for equitable democratic participation. With a business model that is predicated on "profiling and selling user attention," dominant tech firms failed to anticipate or effectively plan to mitigate the use of their technology at scale.[115] This enabled political entities to exploit user data in the 2016 and 2020 US presidential elections and impede access to democratic processes for communities of color; Latinx and Black social media users disproportionately received disinformation about the election on their social media feeds.[116] "No single

[114] Agathe Balayn and Seda Gürses, "Beyond Debiasing: Regulating AI and Its Inequalities."
[115] Ranking Digital Rights, "It's the Business Model: How Big Tech's Profit Machine Is Distorting the Public Sphere and Threatening Democracy," New America, 2020, https://rankingdigitalrights. org/wp-content/uploads/2020/07/Its-the-Business-Model-Executive-Summary-Recommendations.pdf; Zeynep Tufekci, "Facebook's Surveillance Machine," *New York Times*, March 19, 2018, https://www.nytimes.com/2018/03/19/opinion/facebook- cambridge-analytica.html; Brian Contreras and Maloy Moore, "What Facebook Knew about Its Latino-Aimed Disinformation Problem," *Los Angeles Times*, November 16, 2021, https://www. latimes.com/business/technology/story/2021-11-16/facebook- struggled-with-disinformation-targeted-at-latinos-leaked- documents-show.
[116] Shannon Bond, "Black And Latino Voters Flooded With Disinformation In Election's Final Days," *NPR*, October 30, 2020, https://www.npr.org/2020/10/30/929248146/black-and-latino- voters-flooded-with-disinformation-in-elections-final-day; Dhanaraj Thakur and DeVan L. Hankerson, *Facts and Their Discontents: A Research Agenda for Online Disinformation, Race, and Gender* (Washington, DC: Center for

group of Americans was targeted by…information operatives more than African Americans," explained a Senate Intelligence Committee Report on Russian interference in the 2016 election; 37 percent of the fake social media accounts spreading disinformation during that election were focused on Black audiences despite them making up just 12.7 percent of the US population.[117] Facebook neglected to effectively moderate content in Spanish, allowing massive disinformation campaigns to go unchecked among Latinx users.[118] Outcomes included declines in Black voter turnout, Covid-19 vaccine hesitancy among Black and Latinx communities, and more.[119]

Meanwhile Section 230 of the 1996 Communications Decency Act has shielded these large companies from liability for the consequences of dis/misinformation on their platforms. This is because Section 230 protects platforms from legal liability if problematic content is posted by third-party actors (i.e., the users of these platforms). This protection disincentivizes tech companies from moderating the content on their platforms. At the same time, Section 230 has been an important tool in upholding free speech and fighting censorship. There is no simple solution when it comes to holding platforms accountable for third-party content as changes to Section 230 would have far-reaching consequences.[120] The last major change to this law resulted in an anti-sex-trafficking law inadvertently harming sex workers.[121]

Worker Power, Worker Voice, Good Jobs

The profit model underlying the largest technology firms relies on dividing low-wage workers from customers, managers, and one another by creating a stratified labor structure and embedding surveillance and automated management tech in the workplace. Even in higher paid jobs, workers of color are consistently excluded via so-called "opportunity hoarding" that is a product of toxic work environments. Opportunity hoarding describes how "categorically bounded groups," such as white people or men, concentrate opportunity within their own networks. As an indirect result of this action, workers of color are then pushed into lower-paid tech jobs, which leaves them subject to round-the-clock surveillance, poor working conditions, and an unstable labor market. Large tech firms also develop surveillance technology for the purpose of union-busting and to ensure that workers are kept isolated from each other to prevent internal organizing.

Democracy and Technology, 2021), https://cdt.org/wp-content/ uploads/2021/02/2021-02-10-CDT-Research-Report-on-Disinfo-Race-and-Gender-FINAL.pdf.

[117] Senate Committee on Intelligence, *Russian Active Measures Campaigns and Interference in the 2016 U.S. Election*, S. Rep. No. 116-290 (2020); Spencer Overton, "State Power to Regulate Social Media Companies to Prevent Voter Suppression," GWU Legal Studies Research Paper No. 2020-23, *GWU Law School Public Law Research Paper* No. 2020-23, 53 U.C. Davis L. Rev. 1793 (2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3582523.

[118] "Facebook's Spanish Language Disinformation Gap," National Hispanic Media Coalition, November 16, 2020, https://www.nhmc.org/facebooks-spanish-language-disinformation-gap/.

[119] Harper Neidig, "Facebook under Fire from Civil Rights Groups," *The Hill*, December 18, 2018, https://thehill.com/policy/technology/421909-facebook-under-fire-from-civil-rights- groups?rl=1; Hyeyoon Choi, "Why Some US Blacks and Latinos Remain COVID-19 'Vaccine Deliberate,'" *ABC News*, September 7, 2021, https://abcnews.go.com/Health/us-blacks-latinos-remain-covid-19-vaccine-deliberate/story?id=79830353; Voto Latino, "New Study: Facebook is Primary Driver of COVID-19 Misinformation in the Latinx Community, Fueling Vaccine Hesitancy," *CISION PR Newswire*, April 21, 2021, https://www.prnewswire.com/news-releases/new-study-facebook-is-primary- driver-of-covid-19-misinformation-in-the-latinx-community-fueling-vaccine-hesitancy-301274152.html.

[120] Tim Hwang, "Dealing with Disinformation: Evaluating the Case for CDA 230 Amendment," December 17, 2017, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3089442.

[121] "What is SESTA/FOSTA?", Decriminalize Sex Work, accessed April 15, 2021, https://decrminalizesex.work/advocaciy/sesta-fosta/what-is-sesta-fosta/#:~:text=SESTA%2FFOSTA%20impedes%20 freedom%20of,they%20allow%20to%20be%20posted.

Excluding People of Color From Higher Paid Tech Jobs

Authors Cierra Robson and Ruha Benjamin describe how "opportunity hoarding" is created by racist norms and practices within high-wage tech workplaces, and this helps to enforce and maintain a racially segregated labor structure. "As similar groups of people are shuttled into new work environments," explain Robson and Benjamin, "they replicate routine habits and workplace models that have worked in the past rather than trying new ones."[122] As a result, those in the organization come to recognize certain social and cultural norms as the keys to success, creating a workplace culture that is hegemonically white. Together, these processes create "durable inequality," in which the exclusion of Black, Indigenous, and people of color from high-wage tech jobs becomes seen as "static or immutable."[123] Opportunity hoarding also results in occupational segregation in which workers of color and women in the tech sector are concentrated in lower or even subminimum wage jobs further down the supply chain, and they often have independent contract or temporary employment status that limits access to benefits and other employment rights and protections.[124] Another driver of occupational segregation is the extreme geographic concentration of tech companies in New York, California, and Massachusetts, which limits the industry's ability to connect with, recruit, and retain talent from a diverse pool. Workers from underrepresented communities must give up their social networks and support systems to move closer to higher wage tech cluster locations.[125]

Surveillance of a disproportionately people-of-color workforce

As an indirect result of the above conditions, workers of color, particularly Black workers, are pushed into lower wage jobs in the tech sector. Therefore, they are under the constant scrutiny of automated management and surveillance systems. For example, 68 percent of Amazon's field and customer support workers (which includes Fleet drivers) are people of color, according to Amazon's reporting.[126] Black workers make up 37 percent of field and customer support workers compared to just 11 percent of corporate employees.[127] The use of surveillance technology in the workplace leads to an increasingly precarious labor market in which workers—particularly workers of color—are treated as "fungible human capital," or replaceable inputs to production processes, while employers are more easily able to offload responsibility.[128]

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[122] Cierra Robson and Ruha Benjamin, "Silence No More: Addressing Anti-Competitive Opportunity Hoarding in the Tech Industry," https://www.policylink.org/sites/default/files/Cierra_Robson_ Ruha_Benjamin.pdf; Price Fishback, "Segregation in Job Hierarchies: West Virginia Coal Mining, 1906–1932," *The Journal of Economic History* 44, no. 3 (1984): 755-774, doi: 10.1017/ S0022050700032356.
[123] Fishback, "Segregation in Job Hierarchies."
[124] Abbie Langston, "Race and the Work of the Future: Advancing Workforce Equity in the United States," (Oakland and Los Angeles: PolicyLink and the USC Equity Research Institute, November 2020), https://nationalequityatlas.org/research/race- and-the-work-of-the-future; Working Partnership USA and Silicon Valley Rising, *Tech's Invisible Workforce* (San Jose, CA: Working Partnership USA and Silicon Valley Rising, 2016), https://www. wpusa.org/files/reports/TechsInvisibleWorkforce.pdf; "How Much Does a Amazon Warehouse Worker Make in New York City, NY?," Glassdoor, October 27, 2021, https://www.glassdoor.com/ Salaries/new-york-city-amazon-warehouse-worker-salary-SRCH_ IL.0,13_IM615_KO14,37.htm.
[125] Bhaskar Chakravorti, "To Increase Diversity, U.S. Tech Companies Need to Follow the Talent," *Harvard Business Review*, December 4, 2020, https://hbr.org/2020/12/to-increase-diversity-u-s-tech- companies-need-to-follow-the-talent.
[126] Amazon Staff, "Our Workforce Data," Amazon, December 31, 2020, https://www.aboutamazon.com/news/workplace/our- workforce-data.
[127] Amazon Staff, "Our Workforce Data."
[128] Ifeoma Ajunwa and Daniel Greene, "Platforms at Work: Automated Hiring Platforms and Other New Intermediaries in the Organization of Work," *Work and Labor in the Digital Age* 33 (2019): 61-91, https://doi.org/10.1108/S0277- 283320190000033005.

Setting low standards for working conditions

Historically, the warehouse and logistics industry has been dominated by employers like UPS, whose workers are unionized under the Teamsters.[129] But, Amazon has overtaken the industry with a workforce that is highly surveilled, consists predominantly of people of color, and lacks union representation. Amazon's leadership has positioned the company to completely transform the standard for working conditions in this sector, disproportionately harming low-income workers of color. Testifying before Congress, UPS driver Daniel Gross described how Amazon's use of subcontractors and independent contractors has forced UPS to take on similar tactics to be competitive, thereby cutting into the Teamsters' bargaining power: "Amazon set up a system to exert total control while shifting all their risk and responsibility onto the smaller businesses and of course workers," he explained.[130] Many scholars and journalists have chronicled poor working conditions for Amazon warehouse and delivery workers, the majority of whom are people of color—such as 14-hour workdays with no bathroom breaks or workers being forced to show up during onsite Covid outbreaks and during tornadoes, resulting in preventable fatalities.[131] Journalist Alex Mell-Taylor argues that Amazon warehouses can be compared to modern-day plantations.[132] "As I stood in Amazon's vast warehouse and saw scores of predominantly Black men and women pick boxes off a seemingly endless field of conveyor belts," he said, "I struggled to see how the institution of slavery had died. The thing that had changed—something that slaveholders had historically been very adept at doing—was outsourcing the cost of that bondage to everyone else."[133]

The tech industry has also regularly uses legal mechanisms such as nondisclosure and noncompete agreements to protect their profit margins. These can lead to suppressed wages, limited worker mobility, and exacerbated racial and gender wage gaps for women and Black employees.[134] Marginalized workers also risk retaliation or lack protection if they speak out against racism or sexism. As former Google employee Alex Hanna argues in her resignation letter, employees of color who raise concerns about discrimination in tech workplaces often face backlash which helps to uphold white supremacist culture.[135]

Undermining labor organizing

Dominant tech firms have repeatedly relied on surveillance technology to crack down on organizing efforts. For example, Meta uses an internal communication tool called Workplace, which allows administrators to censor certain words like "unionize."[136] In 2019, Google came under fire for its Chrome

[129] Katie Schoolov, "Amazon Is Now Shipping Cargo for Outside Customers in Its Latest Move to Compete with FedEx and UPS," *CNBC*, September 4, 2021, https://www.cnbc.com/2021/09/04/ how-amazon-is-shipping-for-third-parties-to-compete-with- fedex-and-ups.html.
[130] Daniel Gross, written testimony of Daniel Gross.
[131] Hamilton Nolan, "They Were Forced to Stay at Work as a Tornado Bore Down. Would a Union Have Saved Them?" *The Guardian*, December 16, 2021, https://www.theguardian.com/ commentisfree/2021/dec/16/tornado-amazon-kentucky-candle- factory-workers-died; Michael Saintano, "14-Hour Days and No Bathroom Breaks: Amazon's Overworked Delivery Drivers," *The Guardian*, March 11, 2021, https://www.theguardian.com/ technology/2021/mar/11/amazon-delivery-drivers-bathroom- breaks-unions; Karen Weise, "'Way Too Late': Inside Amazon's Biggest Outbreak," *New York Times*, May 19, 2020, https://www. nytimes.com/2020/05/19/technology/amazon-coronavirus- workers.html.
[132] Alex Mell-Taylor, "Amazon Warehouses: Perfecting The American Plantation," Alex Mell-Taylor (blog), December 13, 2019, https:// alexhasopinions.medium.com/amazon-warehouses-perfecting- the-american-plantation-cc88e7ec069b.
[133] Mell-Taylor, "Amazon Warehouses."
[134] John Lettieri, "Noncompete Agreements and American Workers – Testimony before the Senate Committee on Small Business," *Economic Innovation Group* (Testimony), November 14, 2019, https://eig.org/news/testimony-before-the-senate-committee- on-small-business-noncompete-agreements-and-american- workers.
[135] Alex Hanna, "On Racialized Tech Organizations and Complaint: A Goodbye to Google," Alex Hanna (blog), February 2, 2022, https://alex-hanna.medium.com/on-racialized-tech- organizations-and-complaint-a-goodbye-to-google- 43fd8045991d.
[136] John Logan, "Facebook and Its Big Tech Cronies Are Upgrading Their Anti-Union Tools," *Truthout*, July 6, 2020. https://truthout. org/articles/facebook-and-its-big-tech-cronies-are-upgrading- their-anti-union-tools/.

extension that was built to monitor its employees' discussion of labor rights and protests and, on January 7, 2021, an administrative law judge ruled that Google must turn over documents concerning a program set up to obstruct workplace activism.[137] Some of the most brutal union-busting surveillance technology is used in low-wage workforces, in which workers are disproportionately people of color. In 2021, reports were leaked describing how Amazon planned to buy software to analyze, visualize, and track union-building efforts across Whole Foods stores, whose workers are disproportionately people of color.[138] Amazon also developed a website spreading misinformation about union dues during a 2021 union drive in Bessemer, Alabama, and was accused of leading a racist smear campaign against Black Amazon warehouse organizer Chris Smalls.[139] As workers of color are already more likely to face lower wages, lack of benefits, and unsafe working conditions than their white counterparts, unions provide a crucial pathway to advancing racial equity.[140]

Equitable Access to Goods, Services, and Information

The computational infrastructure, data-driven services, and advertising components of the dominant tech firms' business model adversely impact access to goods, services, and information for people of color. For example, the rising popularity of algorithmic decision-making for government agencies, has meant that processes for determining access to public services are increasingly opaque.[141] Algorithms also determine online experiences by way of racially biased search results and hyper-targeted advertising.[142] Finally, running computational infrastructure creates a high demand for resources, including water, and data centers are often built in high drought-risk areas with Black and Latinx residents.[143]

Opaque and potentially discriminatory government resource allocation

In the name of increasing efficiency, the use of ADS in government services has increased. Critical decisions about housing, food access, health care, and public assistance are increasingly mediated by large technology firms, as algorithms are left to opaquely determine who is served and who is not.[144] The Center for Democracy and Technology found that many of these algorithm-driven benefit determination systems violate constitutional or statutory due process rights by failing to provide beneficiaries with sufficient notice on why their benefits were reduced, producing results that are so

[137] Logan, "Facebook and Its Big Tech Cronies Are Upgrading Their Anti-Union Tools"; Kevin Reed, "Documents Show Google Operated a Secret Management Program to Prevent Workers from Organizing," World Socialist Website, January 15, 2022, https://www.wsws.org/en/articles/2022/01/15/goog-j15.html.
[138] Jason Del Rey and Shirin Ghaffary, "Leaked: Confidential Amazon Memo Reveals New Software to Track Unions," *Vox Recode*, October 6, 2020, https://www.vox.com/ recode/2020/10/6/21502639/amazon-union-busting-tracking- memo-spoc; Fortune, "The 100 Best Companies to Work For," 2017, https://fortune.com/best-companies/2017/whole-foods- market/.
[139] David Streitfeld, "How Amazon Crushes Unions," *New York Times*, March 16, 2021, https://www.nytimes.com/2021/03/16/ technology/amazon-unions-virginia.html; Julia Carrie Wong, "Amazon Execs Labeled Fired Worker 'Not Smart or Articulate' in Leaked PR Notes," *The Guardian*, April 2, 2020, https://www. theguardian.com/technology/2020/apr/02/amazon-chris-smalls- smart-articulate-leaked-memo.
[140] "Unions Help Reduce Disparities and Strengthen Our Democracy," Fact Sheet, Economic Policy Institute, April 23, 2021, https://www.epi.org/publication/unions-help-reduce- disparities-and-strengthen-our-democracy/; Rebecca Wolfe, Kristen Harknett, and Daniel Schneider, "Inequalities At Work and the Toll Of COVID-19," *HealthAffairs*, June 4, 2021, https:// www.healthaffairs.org/do/10.1377/hpb20210428.863621/full/.
[141] Mejias, "The Algorithmic State"
[142] Safiya Umoja Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism* (New York, NY: New York University Press, 2018).
[143] Emma Strubell, Ananya Ganesh, and Andrew McCallum, "Energy and Policy Considerations for Deep Learning in NLP," *ACL Anthology*, Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (July 2019): 3645- 3650, https://aclanthology.org/P19-1355.
[144] Mejias, "The Algorithmic State"

unreliable as to render the determinations arbitrary, and violating people's rights to a fair hearing and to ascertainable standards in a decision affecting their benefits.[145] Because these government services disproportionately serve people living in poverty and people of color, the risk is high that algorithms could further harm already marginalized communities.[146] A flawed algorithm used by the Idaho Department of Health and Welfare, for instance, unjustly slashed Medicaid benefits for about 4,000 adults with developmental disabilities for a period of time.[147] In Automating Inequality, Virginia Eubanks describes how the ADS used by city governments across the US to determine public service eligibility, from housing to child welfare support, systematically exclude those most in need of their services – like low-income people of color.[148] Rather than increasing the efficiency of service provision, these algorithmic systems worsen racial and economic inequality.[149]

Inequitable access to information via racist ad targeting

The Equal Employment Opportunity Commission has prohibited use of personal information to make employment decisions on the basis of "race, color, religion, sex, national origin, age, disability, or genetic information."[150] Despite this, delivery of ad data for housing and job opportunities was found to be significantly skewed by race, meaning that different users had different experiences on the same platform, due to the selling of "relevant" ads.[151] In 2017, Facebook was found to have approved rental housing ads that excluded groups protected by the Fair Housing Act, such as Black and Latinx users, users with disabilities, and more.[152] While that particular finding was addressed, platforms continue to steer jobseekers of color toward lower wage work and exclude them from seeing certain higher wage roles.[153] Targeting algorithms will use proxies for race such as "Black-associated" names and zip codes from predominantly Black neighborhoods—these proxies mean that different people experience very different ads.[154] These disparities in ad delivery have the potential to compound existing job segregation and amplify economic inequities.[155]

[145] Lydia X. Z. Brown, Michelle Richardson, Ridhi Shetty, and Andrew Crawford, *Challenging the Use of Algorithm-driven Decision-making in Benefits Determinations Affecting People with Disabilities* (Washington, D.C.: Center for Democracy and Technology, 2020), https://cdt.org/insights/report-challenging-the-use-of-algorithm- driven-decision-making-in-benefits-determinations-affecting-people-with-disabilities/.
[146] Brown, et al., Challenging the Use of Algorithm-driven Decision- making.
[147] "Federal Court Rules Against Idaho Department of Health and Welfare in Medicaid Class Action," ACLU, March 30, 2016, https://www.aclu.org/press-releases/federal-court-rules-against- idaho-department-health-and-welfare-medicaid-class-action.
[148] Virginia Eubanks, *Automating Inequality*.
[149] Virginia Eubanks, *Automating Inequality*.
[150] "Prohibited Employment Policies/Practices," US Equal Employment Opportunity Commission, accessed April 15, 2022, https://www.eeoc.gov/prohibited-employment-policiespractices.
[151] These targeting tools ascribe different levels of desirability to users based on race or ethnicity, even when advertisers set targeting parameters to be "highly inclusive." (Muhammad Ali, Piotr Sapiezynski, Miranda Bogen, Aleksandra Korolova, Alan Mislove, and Aaron Rieke, "Discrimination through Optimization: How Facebook's Ad Delivery Can Lead to Skewed Outcomes," *Proceedings of the ACM on Human-Computer Interaction*, 3 , CSCW (Nov 2019), article no. 199: 1–30, https://doi. org/10.1145/3359301; Antonio García Martínez, "Are Facebook Ads Discriminatory? It's Complicated," *Wired*, June 11, 2019, https://www.wired.com/story/are-facebook-ads-discriminatory- its-complicated/.)
[152] Martínez, "Are Facebook Ads Discriminatory?"
[153] Martínez, "Are Facebook Ads Discriminatory?"; Angwin and Parris Jr., "Facebook Lets Advertisers Exclude Users by Race."
[154] Latanya Sweeney, "Discrimination in Online Ad Delivery," January 28, 2013, available at SSRN: https://ssrn.com/ abstract=2208240 or http://dx.doi.org/10.2139/ssrn.2208240. For example, a white Facebook user might scroll through their feed to find ads for high-wage positions at a local start-up, while a Black user, whose demographics otherwise match the white user, would find ads for taxi driving and cashier openings and other positions disproportionately held by Black workers.
[155] The median wage for Black workers in the United States is $18 per hour compared to $22 per hour for white workers. Inequities in homeownership are even starker: 64 percent of white households own their home compared to just 42 percent of Black households. (PolicyLink and USC Equity Research Institute, "Educational Attainment: United States, 2019," National Equity Atlas, November 18, 2021, https://nationalequityatlas.org/ indicators/Educational-attainment#/?breakdown=2).

Environmental inequity and access to safe drinking water

The computational infrastructure required to run data-driven services require massive amounts of water for cooling purposes.[156] While information on usage rates are difficult to obtain, public records and legal filings indicate that Google, for example, was granted more than 2.3 billion gallons of water for data centers in three different states in 2019 alone, often in regions with large populations of color that already faced water scarcity.[157] Google plans to build a data center in Red Oak, Texas, a city that has repeatedly faced drought in recent years and whose residents are primarily Black and Latinx.[158] The data center will require as much as 1.46 billion gallons of water a year.[159] With residents already under water restriction advisories due to depleted reservoirs, Google's data center threatens to further shrink water access, particularly for communities of color who are least likely to have access to safe water.[160] The water and other natural resources required to operate data-driven services– the vast majority of which are owned by the most dominant tech firms– presents a challenge to environmental justice.

Ownership and Entrepreneurship

Dominant tech companies have control over the computational infrastructure and data-driven services that power digital marketplaces, prioritizing their own products and services as well as those of businesses that can afford the advertising costs and technical optimizations required to maximize their visibility to potential customers. While larger businesses have the budgets to make the market work for them and to mitigate losses along the way, small businesses and entrepreneurs of color are at a disadvantage.[161]

Lower quality, costly advertising service for small businesses

Tech firms often argue that the advertising analytics they provide help small businesses and entrepreneurs of color, due to online ads being more affordable than traditional marketing strategies. However, research has found that online ads are more beneficial to large businesses as they can afford larger ad campaigns with more extensive reach.[162] In addition to preferencing their own products, such as Google routing customers searching for local businesses to Google Shopping over competitors like Yelp, a Wall Street Journal investigation revealed that the search giant helps Meta and Amazon appear

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[156] Data-driven services require a lot of computing power, which has a negative impact on the environment. A good example is the natural language processing (NLP) engine that Google uses to power Search; this is a type of AI model that can accurately recognize language and must be trained on large datasets in order to do so. Training Google's NLP engine once produces 1400 pounds of CO2, which is equivalent to a round-trip trans-American flight for one person (Strubell, Ganesh, and McCallum, "Energy and Policy Considerations for Deep Learning in NLP"). The carbon cost of training AI is important to point out, because air pollution disproportionately affects Black, Indigenous, and people of color, as outlined in this study: Christopher W. Tessum, David A. Paolella, Sarah E. Chambliss, Joshua S. Apte, Jason D. Hill, and Julian D. Marshall, "PM2.5 Polluters Disproportionately and Systemically Affect People of Color in the United States," *Science Advances*, 7 (2021), https://advances.sciencemag.org/content/7/18/ eabf4491. For additional information, see Emily Bender, Timnit Gebru, Angelina McMillan-Major and Shmargaret Shmitchell, "On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?" *FAcct '21: Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency,* March 2021: 610-623, https://dl.acm.org/doi/10.1145/3442188.3445922.
[157] Nikitha Sattiraju, "The Secret Cost of Google's Data Centers: Billions of Gallons of Water to Cool Servers," *Time*, April 2, 2020, https://time.com/5814276/google-data-centers-water/.
[158] United States Census Bureau, "QuickFacts Red Oak City, Texas," November 18, 2021, https://www.census.gov/quickfacts/fact/table/redoakcitytexas/PST045219#.
[159] Sattiraju, "The Secret Cost of Google's Data Centers."
[160] Sattiraju, "The Secret Cost of Google's Data Centers"; Nicole Acevedo, "When It Comes to Access to Clean Water, 'Race Is Still Strongest Determinant,' Report Says," *NBC News*, November 27, 2019, https://www.nbcnews.com/news/latino/when-it-comes-access-clean-water-race-still-strongest-determinant-n1089606.
[161] Acevedo, "When It Comes to Access to Clean Water, 'Race Is Still Strongest Determinant'."
[162] Joshua Sophy, "62 Percent of Small Business Owners Say Facebook Ads Miss Their Targets, Weebly Reports," *Small Business Trends*, January 3, 2017, https://smallbiztrends.com/2017/01/do- facebook-ads-work.html.

more often in search results than other businesses by updating the indexes of these larger sites more often, arguing that this helps customers by directing them to larger outlets that are more likely to have what they're looking for.[163] Among small business owners surveyed by web design company Weebly, 62 percent believe that Meta "holds them hostage" by restricting the reach of their content to only a small fraction of their followers unless they pay to boost the ads. These advertising markets are also opaque, expensive, and often plagued by bots.[164]

Limited funding limits opportunity and business reach

Dr. Safiya Noble's groundbreaking Algorithms of Oppression demonstrates the ways in which Google search is racially biased.[165] Dr. Fallon Wilson builds upon this with a particular focus on the ways in which the Search Engine Optimization algorithm is inherently biased against Black and Brown entrepreneurs because it is designed to prioritize websites with faster load times and optimized content. Small businesses are drawn in by the growth opportunities digital marketing offers but rarely have the capital required to invest in website development and hosting, which can cost several thousand dollars a month.[166] As a result, they often turn to relatively inexpensive and simple DIY websites that do not require knowledge of coding or programming. These websites tend to take longer to load than customized websites, resulting in slow loading speeds with every additional second leading to a higher bounce rate and subsequent loss of business.[167] Businesses with the larger budgets required to build more optimized websites consistently outperform small businesses and businesses owned by people of color on these metrics, with the latter being ranked lower in search results.[168] This causes an adverse effect on brand awareness and sales of small and Black- and Brown-owned businesses, creating what scholar Howard White calls a "new digital divide."[169]

Now Is the Time: New Rules for a New Economy

Since the 1970s, the dominant approach to economic policymaking has been laissez-faire, allowing for the unregulated growth of tech giants, the decline of labor power, and rising inequality.[170] But the political winds are shifting: momentum is growing to regulate the tech sector, and tech workers are organizing to form unions and to protest working conditions. Advocates' demands to center racial equity have also increasingly gained traction.[171]

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[163] *The Truth About Google, Facebook, and Small Businesses* (Washington, DC: American Economic Liberties Project, 2021, https://www.economicliberties.us/wp-content/ uploads/2021/05/Corporate-Power-Quick-Takes_5_Final.pdf; Kirsten Grind, Sam Schechner, Robert McMillan, and John West, "How Google Interferes With Its Search Algorithms and Changes Your Results," *The Wall Street Journal*, November 15, 2019, https://www.wsj.com/articles/how-google-interferes-with-its- search-algorithms-and-changes-your-results-11573823753.

[164] Sophy, "62 Percent of Small Business Owners Say Facebook Ads Miss Their Targets."

[165] Noble, *Algorithms of Oppression*.

[166] Fallon Wilson, "Supporting Black Businesses Online with Federal Policies and Recommendations," November 22, 2021, https://www.policylink.org/ sites/default/files/Fallon_Wilson.pdf.

[167] Daniel An, "Find Out How You Stack Up To New Industry Benchmarks For Mobile Page Speed," Think With Google, March 2017, https://www.thinkwithgoogle.com/intl/en-cee/marketing- strategies/app-and-mobile/find-out-how-you-stack-new-industry-benchmarks-mobile-page-speed/.

[168] Howard D. White, "Web Page Speed and the Performance Gap for Minority & Black-Owned Businesses," *180 Link Media*, September 20, 2020, https://www.180link.com/blog/websites/42-the- digital-divide-for-black-owned-businesses.

[169] White, "Web Page Speed and the Performance Gap."

[170] David Howell, *The Great Laissez-Faire Experiment* (Washington, DC: Center for American Progress, 2013), https://www. americanprogress.org/article/the-great-laissez-faire- experiment/; PolicyLink and USC Equity Research Institute, "Income Inequality: United States, 2019," National Equity Atlas, November 22, 2021, https://nationalequityatlas.org/indicators/ Income_inequality#/?breakdown=2; West, "Antitrust, Labor, and Racial Equity."

[171] Lee and Chin, "The Debate on Antitrust Reform Should Incorporate Racial Equity"; Milner and Traub, *Data Capitalism and Algorithmic Racism*; Rachel Moran and Matthew Bui, "Race, Ethnicity, and Telecommunications Policy Issues of Access and Representation: Centering Communities of Color and Their Concerns," *Telecommunications Policy* 43, no. 5 (2019): 461-473, https://www.sciencedirect.com/science/article/abs/pii/ S0308596118301952.

The failure to regulate stems from a decades-long trend in the US: the Chicago School—a neoclassical school of economic thought that gained popularity in the 1970s—champions minimal government intervention in the economy and a narrow interpretation of antitrust law. The prevailing argument is that "markets [are] likely to correct against any competitive imbalances on their own, without intervention by regulators," and that, "enforcement agencies should only intervene in the competitive process when it [is] clear that anticompetitive conduct [is] affecting consumer welfare."[172] This is known as the "consumer welfare standard" that encompasses the idea that if consumers are not harmed (through higher prices or diminished quality of goods and services), government agencies should not intervene.[173] Alternatively, an "abuse of dominance standard," which the European Union currently enforces and is gaining some traction in the US, focuses on competitor welfare and imposes limits on the exploitation of a dominant position by a single firm.[174]

This laissez-faire approach to economic regulation along with the dominance of the consumer welfare standard made policymakers reluctant to address anticompetitive behavior, which critics argue has led to increased industry concentration across the US economy.[175] Market deregulation created an environment for what scholar Adam Thierer calls "permissionless innovation"—an environment in which new technologies and business models are permitted by default and any issues they cause can be addressed later.[176] Nicole Turner Lee explains that deregulation also created an environment for "permissionless forgiveness" in which tech companies were able to continuously consolidate power without being held accountable for harm.[177]

Over this same period, weakened labor protections combined with employers' growing monopsony power led to a significant decline in labor power.[178] A number of states passed so-called "right to work" laws, which weakened union bargaining power, along with a host of other antiunion policies. Over the past 40 years, the share of workers in unions has decreased by 50 percent.[179] Companies have increasingly shifted their operations to states that are hostile to unionization,[180] which author Shelly Steward explains "led directly to lower rates of unionization and indirectly to the overall decline in job quality,"[181] mostly harming workers of color. Dominant tech firms have also adopted aggressive union-busting techniques.[182]

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[172] Thomas A. Piraino Jr., "Reconciling the Harvard and Chicago Schools: A New Antitrust Approach for the 21st Century," *Indiana Law Journal* 82, no. 2 (Spring 2007): article 4, https://www. repository.law.indiana.edu/cgi/viewcontent. cgi?article=1354&context=ilj.

[173] Christine Wilson, "Welfare Standards Underlying Antitrust Enforcement: What You Measure Is What You Get," Presented at the Luncheon Keynote Address at George Mason Law Review 22nd Annual Antitrust Symposium: Antitrust at the Crossroads?, Arlington, CA, February 15, 2019, https://www.ftc.gov/system/ files/documents/public_statements/1455663/welfare_standard_ speech_-_cmr-wilson.pdf.

[174] Eamon O'Kelly, "'Abuse of Dominance': Was This What Congress Originally Intended for Section 2?" *Reuters*, July 6, 2021, https:// www.reuters.com/legal/legalindustry/abuse-dominance-was- this-what-congress-originally-intended-section-2-2021-07-06/.

[175] Gustavo Grullon, Yelena Larkin, and Roni Michaely, "Are U.S. Industries Becoming More Concentrated?", Forthcoming, *Review of Finance,* Swiss Finance Institute Research Paper No. 19-41, October 25, 2018, https://papers.ssrn.com/sol3/papers. cfm?abstract_id=2612047.

[176] Adam Thierer, *Permissionless Innovation: The Continuing Case for Comprehensive Technological Freedom* (Arlington, VA: Mercatus Center at George Mason University, 2016), https://www. mercatus.org/publications/technology-and-innovation/ permissionless-innovation-continuing-case-comprehensive.

[177] Nicol Turner Lee, "It's Time for an Updated Civil Rights Regime Over Big Tech,", November 22, 2021, https://www.policylink.org/sites/default/ files/Nicol_Turner_Lee_082522a.pdf.

[178] Lawrence Mishel, Lynn Rhinehart, and Lane Windham, *Explaining the Erosion of Private-Sector Unions*, (Washington, DC: Economic Policy Institute, 2020), https://www.epi.org/unequalpower/ publications/private-sector-unions-corporate-legal-erosion/.

[179] Steward, "How Platform-Based Work Contributes to the Racial Wealth Gap."

[180] Sean O'Kane, "Tesla Is Moving Its Headquarters to Austin, Texas," *The Verge*, October 7, 2021, https://www.theverge. com/22715458/tesla-move-headquarters-to-austin-texas.

[181] Steward, "How Platform-Based Work Contributes to the Racial Wealth Gap."

[182] Amazon-owned Whole Foods, for example, developed a "heat- map" to identify and target stores at risk of unionization, and Google has repeatedly contracted with IRE Consultants, a firm that specializes in preventing workers from joining unions. (David Goodfriend, "Why Big Tech Shouldn't Be Scared of Unions," *The Nation*, March 30, 2021, https://www.thenation.com/article/ economy/tech-unions-google/; Jay Peters, "Whole Foods Is Reportedly Using a Heat Map to Track Stores at Risk of Unionization," *The Verge*, April 20, 2020, https://www.theverge. com/2020/4/20/21228324/amazon-whole-foods-unionization- heat-map-union).

Since the 2008 financial crisis, however, economic policy trends have begun to change. The global financial crisis brought the Chicago School perspective on antitrust under criticism for its narrow interpretation of anti-monopoly law.[183] In the last decade, the Neo-Brandeisian School of economic theory, which sees anti-monopoly regulation as a key tool for underpinning the democratic foundation of society, has gained traction in prominent economic policy circles.[184] Lina Khan, the newly appointed chair of the FTC has argued that our current focus on the consumer welfare standard in antitrust law may not sufficiently account for the anticompetitive effects of large tech firms.[185] Through the singular lens of consumer welfare, for example, Amazon's predatory pricing practice used to muscle-out competitors becomes highly rational as it can result in lower prices for consumers, despite its negative impacts on competition and market concentration.[186] The Biden Administration's choice to appoint Khan highlights the administration's growing appetite to reshape the role that corporate power—particularly the tech sector—plays in our economy and lives.[187]

Similarly, labor organizing has been on the rise in the last two years. In 2021, Google workers announced the Alphabet Workers Union while Amazon warehouse workers led the first successful unionization effort in Staten Island, NY, garnering national attention.[188] In Seattle, Uber and Lyft drivers organized to win increased protections from unwarranted termination as well as paid sick time during the pandemic.[189]

The Path Forward: Steering the Tech Sector Toward Equity

Immediate policy action is needed to address the structural drivers that enable our biggest technology companies to continuously consolidate power and conduct business practices that disproportionately harm communities of color and amplify racial inequities in America. We call on the US Congress, the Executive Branch, and independent federal agencies to advance the following five policy priorities:

1. Center racial equity in all technology regulatory efforts

2. Promote democratic governance of technology

3. Build an equitable tech labor market

4. Ensure equitable access to goods, services, and information

5. Eliminate disparities in ownership and entrepreneurship

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[183] Lina Khan, "The New Brandeis Movement: America's Antimonopoly Debate," *Journal of European Competition Law & Practice* 9, no. 3 (March 2018): 131-132, https://academic.oup. com/jeclap/article/9/3/131/4915966.

[184] Khan, "The New Brandeis Movement."

[185] Cecilia Kang, "A Leading Critic of Big Tech Will Join the White House," *New York Times*, March 2021, https://www.nytimes. com/2021/03/05/technology/tim-wu-white-house.html; Khan, "Amazon's Antitrust Paradox."

[186] Khan, "Amazon's Antitrust Paradox."

[187] Sheelah Kolhatkar, "Lina Khan's Battle to Rein in Big Tech," *The New Yorker*, November 29, 2021, https://www.newyorker.com/ magazine/2021/12/06/lina-khans-battle-to-rein-in-big-tech; Rosa Morales, "Can Antitrust Enforcement Be A Tool For Racial Equity?" *Law360*, March 30, 2021, https://www.crowell.com/ files/20210330-Can-Antitrust-Enforcement-Be-A-Tool-For-Racial- Equity.pdf.

[188] Jodi Kantor and Karen Weise, "How Two Best Friends Beat Amazon," *The New York Times,* April 4, 2022, https://www. nytimes.com/2022/04/02/business/amazon-union-christian- smalls.html.

[189] David Groves, "Seattle Uber Drivers, Teamsters Celebrate $3.4M Settlement," *The Stand*, June 2021, https://www.thestand. org/2021/06/seattle-uber-drivers-win-3-4m-settlement/; Joshua Welter, "Seattle Is First City Nationwide to Implement Gig Economy Labor Standards Protecting Drivers From Unwarranted Termination," Teamsters, June 2021, https://teamster. org/2021/06/drivers-union-to-launch-new-support-services- with-first-ever-protections-for-uber-lyft-drivers/.

1: Center racial equity in all technology regulatory efforts

Current tech regulatory efforts remain race-blind, which allows the tech sector to continue to perpetuate racial equity harms. To advance a society in which all people can participate, prosper, and reach their full potential, all technology policy and regulatory efforts must proactively prioritize racial equity.

1. **Give impacted people and workers, as well as racial equity advocates and experts, a seat at policymaking tables.** When these communities are excluded, policymakers lack key information about the harms the community members experience. Representatives from impacted communities, racial equity advocacy organizations, and civil rights and civil liberties experts must be included on all tech regulation-related committees, task forces, working groups, and advisory bodies.[190]

2. **Conduct civil rights and equity audits and create formalized positions, such as civil rights officers within technology regulatory bodies.** Such equity-focused tools and institutional infrastructure (if properly empowered) can help ensure that potential policies and regulations do not negatively impact vulnerable communities, and instead advance equity. In addition, agencies should conduct racial equity impact assessments on proposed regulations.[191]

3. **Protect against abusive data practices.** The FTC should follow recommendations outlined in a joint letter from civil rights and civil liberties organizations. This letter includes the following recommendations:[192]

    a. Address the full life cycle of data—creation, use management, retention, and deletion—and how it is used in training models for algorithmic technologies.

    b. Establish clear rules against discriminatory and abusive data practices through an open, participatory process.[193]

    c. Prevent unfair and/or deceptive data practices by requiring affirmative, specific, and informed consent for all data collection and allow users to opt out.[194]

4. **Pass effective, equity-focused antitrust enforcement.** Congress should expeditiously confirm appointees to the FTC, Federal Communications Commission, and other agencies involved in technology policy and appropriately fund these agencies to retain the staff, technology, and capital to not only meaningfully address harms against people of color but also develop more proactive and visionary solutions. Congress should also pass enhanced national privacy

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[190] This is consistent with section 8 of the Biden Administration's Executive Order on Racial Equity.

[191] For example, the FTC and Antitrust Division of the Department of Justice should examine and report how market dominance impacts workers and business owners of color.

[192] "Civil Rights and Privacy Rulemaking," [letter to Federal Trade Commission] Free Press, October 2021, https://www.freepress.net/sites/default/files/2021-10/Letter-to-FTC-on-Privacy- Rulemaking-10-27-2021.pdf.

[193]The FTC proposed Trade Regulation Rule on Commercial Surveillance and Data Security provides a promising path forwards on data surveillance regulation. Federal Register.
"Trade Regulation Rule on Commercial Surveillance and Data Security," Federal Trade Regulation, August 22, 2022.
https://www.federalregister.gov/documents/2022/08/22/2022-17752/trade-regulation-rule-on-commercial-surveillance-and-data-security.

[194] The White House Blueprint for an AI Bill of Rights calls for companies to provide consent requests that are brief, understandable, and give users agency over data collection and the specific context of use. The White House. "Blueprint for an AI Bill of Rights | OSTP." Accessed June 13, 2023. https://www.whitehouse.gov/ostp/ai-bill-of-rights/.

legislation that protects vulnerable communities from discrimination, disinformation, and voter suppression, and strong algorithmic accountability legislation, based on the Algorithmic Justice and Online Platform Transparency Act .[195]

2: Promote democratic governance of technology

The most dominant tech firms in our economy currently limit the economic and political decision-making power of people of color and low-income workers. To achieve a just and fair society in which all can participate, prosper, and reach their full potential, federal, state, and local governments must set policy that ensures the use of technology by government entities promotes equitable outcomes and does not impede democratic governance.

1. **Develop guidelines to inform when harmful technology should be banned.** Federal and state agencies must work with racial equity advocates to produce a net harm analysis of tech business models and develop detailed guidelines for when to impose bans or moratoria on the acquisition or application of technology that may harm low-income people and people of color.

2. **Build equitable third-party auditing for AI systems.**[196] The following interventions should be integrated into proposed legislation where audits are required, such as the Algorithmic Justice and Online Platform Transparency Act:[197]

   a. Legal protection for third-party auditor access

   b. Formal accreditation and training for auditors

   c. Standards for AI products that are transparently developed

   d. Harms incident reports tracking to ensure those who are harmed by AI systems are able to share their experiences and concerns

   e. Mandatory public disclosure of AI system use

   f. Frameshift beyond the technical measures of accuracy and bias to address the broad range of AI harms

   g. Post-audit accountability mechanisms that require firms to disclose key audit findings, make improvements, seek compliance with standards and the law, and redress harms

[195] Increasing Access to Lower Premium Plans and Expanding Health Savings Accounts Act of 2018, H.R. 6311, 115th Cong. (2018), https://www.congress.gov/bill/115th-congress/house-bill/6311/ actions?r=47.
[196] The White House Blueprint for an AI Bill of Rights calls for independent evaluation and reporting that confirms that AI systems are safe and effective as well as public reporting of steps taken to mitigate potential harms whenever possible. The White House. "Blueprint for an AI Bill of Rights | OSTP." Accessed June 13, 2023. https://www.whitehouse.gov/ostp/ai-bill-of-rights/.
[197] Inioluwa Deborah Raji, Sasha Costanza-Chock, and Joy Buolamwini, "Change From the Outside: Towards Credible Third- Party Audits of AI Systems," in *Missing Links in AI Policy* (Paris, France: UNESCO, 2022); Increasing Access to Lower Premium Plans and Expanding Health Savings Accounts Act of 2018.

In instances of abuse or harm, companies ought to pay a fine to the FTC and delete the data and any algorithms or technologies built using the data.[198]

3. **Create an interagency working group to evaluate government use of privately owned computational infrastructure and data-driven services.** Officials from the Executive Branch and independent agencies must work together to assess whether the use of privately owned computational infrastructure and data-driven services is fit for purpose. This working group could examine the following:

   a. Create and maintain a resilient, interoperable computational ecosystem, which is publicly governed with citizen oversight[199]

   b. Mandate the use of AI impact assessments and third-party audits that include evaluation of racial disparity in ADS[200]

   c. Create and enforce federal grantmaking requirements for modernizing state and local service delivery to be contingent upon independent third-party audit of any ADS intended for purchase[201]

4. **Pass equity-focused antitrust reforms.** The FTC and Congress must incorporate racial equity in antitrust reforms and address the impacts of tech sector consolidation on people of color, working class people, and small business owners.[202]

5. **Ensure independent research on technological systems.** The National Science Foundation, Department of Defense, Central Intelligence Agency, and National Security Agency must establish funding policies to mitigate conflicts of interest and prevent corporate influence over research funded with public dollars by the US government.

3: Build an equitable tech labor market

We need labor protections for all workers, particularly for the gig, contract, and temporary workers who make up a large segment of Big Tech's invisible labor force. In an equitable tech labor market, all tech workers would be able to access high-quality jobs that provide family-sustaining wages and benefits, career advancement and skill development pathways, collective bargaining rights, protection from harassment and discrimination, and safeguards against surveillance and data extraction.

1. **Ensure all workers have access to full employment rights and protections.** Gig workers, independent contractors, and temporary workers must have access to a living wage, health

[198] "FTC Takes Action Against Company Formerly Known As Weight Watchers for Illegally Collecting Kids' Sensitive Health Data," Federal Trade Commission, March 4, 2022, https://www.ftc.gov/ news-events/news/press-releases/2022/03/ftc-takes-action-against-company-formerly-known-weight-watchers-illegally- collecting-kids-sensitive.

[199] Lee, "It's Time for an Updated Civil Rights Regime Over Big Tech"; Mejias, "The People vs. The Algorithmic State."

[200] Emanuel Moss, Elizabeth Anne Watkins, Ranjit Singh, Madeleine Clare Elish, and Jacob Metcalf, "Assembling Accountability: Algorithmic Impact Assessment for the Public Interest," *SSRN Electronic Journal*, July 2021, https://www.researchgate.net/ publication/353124206_Assembling_Accountability_ Algorithmic_Impact_Assessment_for_the_Public_Interest; Raji, Costanza-Chock, and Buolamwini, "Change From the Outside."

[201] Gangadharan, interview with Julia Rhodes Davis on tech equity.

[202] Sandeep Vaheesan, "How Antitrust Perpetuates Structural Racism," *The Appeal*, September 16, 2020, https://theappeal.org/ how-antitrust-perpetuates-structural-racism/.

insurance, paid sick leave, family leave, collective bargaining rights, and other key employment rights.

2. **Enact comprehensive labor organizing protections.** By passing legislation like the PRO ACT,[203] Congress can impose strict penalties for union-busting efforts and repeal right-to-work legislation at the state level.

3. **Create a federally enforced, worker-centered employment classification process.** The process described in the PRO Act or in California's AB5 Bill would ensure workers are not misclassified as independent contractors.[204]

4. **Ensure all workers are protected from intersecting forms of discrimination and harassment.** Workers must be able to access affordable and efficient redress mechanisms when they experience discrimination or harassment, including instances perpetrated by algorithms and automated systems. California's Silence No More Act should be expanded to all workers through a law passed by the US Congress.[205] Currently the act protects the right for employees to speak out about harassment and discrimination in the workplace. It should also include key provisions to ensure redress is achieved as efficiently as possible so workers do not suffer undue financial or emotional burdens.[206]

5. **Shift the burden of proof for violating worker protections from the individual to the corporate entity.** Any company with revenues or valuations over $100 million should place at least 8 percent of revenues in a fund administered by an independent third party to provide financial support for legal and mental health services for affected employees or former employees who have filed formal complaints against those companies.[207]

6. **Tighten regulation of automated management tools and ban the use of automated technologies in hiring and firing of workers.** All high-stakes decision-making in the workplace (i.e., changes to scheduling, pay, and employment status) should include key checkpoints for human oversight and ensure that workers have meaningful redress when automated decisions are made in error and produce material harm. In addition, the federal government should fund and support worker-driven tech development models that support workers' data autonomy, like cooperatives, data trusts, and data unions.

7. **Ban collection of worker movement data (e.g., biometric data).**[208] Data collection through wearables, home surveillance tech, and other technology that tracks workers' actions while on the job should be prohibited. In addition, data collected from workers should not be resold in secondary markets or used to develop algorithmic technologies.

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[203] Protecting the Right to Organize Act of 2021, H.R. 842, 117th Cong. (2021-2022), https://www.congress.gov/bill/117th- congress/house-bill/842.
[204] Lynn Rhinehart, Celine McNicholas, Margaret Poydock, and Ihna Mangundayao, *Misclassification, the ABC Test, and Employee Status* (Washington, DC: Economic Policy Institute, June 16, 2021), https://www.epi.org/publication/misclassification-the-abc-test-and-employee-status-the-california-experience-and-its- relevance-to-current-policy-debates/.
[205] Rhinehart et al., *Misclassification, the ABC Test, and Employee Status.*
[206] Timnit Gebru, "Discussion of Tech Equity Project," October 2021.
[207] Lisa Dyer, advisory committee member and technology policy expert, former US Department of State, interview with authors, November 17, 2021.
[208] The New York City Secure Jobs Act, which severely limit employers' ability to use data collected by electronic monitoring in disciplining and discharge decisions, provides a promising path forward.

4: Ensure equitable access to goods, services, and information

The profit strategies that power the tech business model often impede access to goods, services, and information for people of color. Policy interventions should eliminate harm to marginalized communities, evaluate the benefits and risks of public utility classification of information platforms, ensure that data privacy protections are treated as a civil rights issue, and prioritize environmental protections for vulnerable communities from the impacts of computational infrastructure.[209]

1. **Ensure that the data-driven services powering platform advertising are fully compliant with civil rights law and Equal Employment Opportunity Commission regulations.** This can prevent racist ad targeting and exclusion and increase access to goods, services, and information. Companies must be held accountable for instances of racist ad targeting, including ad targeting that relies on proxies for race, such as ZIP codes.[210]

2. **Invest in public research assessing the impact of surveillance technology and data-driven services on communities of color.** The White House Office of Science and Technology Policy should commission an update to the Big Data Report published by the Obama-Biden administration in 2014 to specifically examine how the evolution of data-driven services, algorithms, and data extraction practices have amplified the concerns raised in the original report.[211]

3. **Explore the classification of information platforms as public utilities.** By regulating information platforms as public utilities, such as electricity and telecommunications companies, users could be better protected from exploitation while preventing decreased quality of service.[212] Policymakers should assess the potential merits and drawbacks of this regulatory change, paying particular attention to impacts on people of color.

4. **Prevent environmental racism perpetuated by data processing centers and other computational infrastructure.** Congress should pass environmental justice legislation targeted at data processing centers and other computational infrastructure that build on National Environmental Policy Act requirements and explicitly prevent environmental harm against communities of color.[213]

[209] Becky Chao, Eric Null, Brandi Collins-Dexter, and Claire Park, *Centering Civil Rights in the Privacy Debate* (Washington, DC: Open Technology Institute, 2019), https://www.newamerica.org/ oti/reports/centering-civil-rights-privacy-debate/.

[210] The White House Blueprint for an AI Bill of Rights asserts that no individual should face discrimination by algorithmic systems and calls for designers, developers, and deployers of these systems to take proactive and continuous measures to prevent discrimination. The White House. "+ Algorithmic Discrimination Protections | OSTP." Accessed June 13, 2023. https://www.whitehouse.gov/ostp/ai-bill-of-rights/algorithmic-discrimination-protections-2/.

[211] " Big Data: A Report on Algorithmic Systems, Opportunity, and Civil Rights" (Washington, DC: Executive Office of President Obama, 2016), https://obamawhitehouse.archives.gov/sites/ default/files/microsites/ostp/2016_0504_data_discrimination. pdf; Color of Change, White House Algorithmic Accountability Letter, July 2021 (Waiting for permission to cite publicly).

[212] Dipayan Ghosh, "Don't Break Up Facebook — Treat It Like a Utility," *Harvard Business Review*, May 30, 2019, https://hbr. org/2019/05/dont-break-up-facebook-treat-it-like-a-utility.

[213] Water Equity and Climate Resilience Caucus, *Secure Safe and Affordable Drinking Water and Equitable Infrastructure Systems for All* (Oakland, CA and Slidell, LA, PolicyLink and Gulf Coast Center for Law and Policy, September 2019), https://www.policylink.org/ resources-tools/secure-safe-affordable-drinking-water-summary; Water Equity and Climate Resilience Caucus, *Advancing Water Equity to Create Communities of Opportunity* (Oakland, CA: PolicyLink, 2020) https://climatewaterequity.org/resources- tools/water-equity.

5: Eliminate disparities in tech ownership and entrepreneurship

Large tech firms neutralize the threat of competition through strategies that either absorb smaller businesses or eliminate their market viability. Without policies that target monopoly power and support competition, this foundational aspect of the underlying business model will continue to exacerbate the racial wealth gap.

As Lee and Chin describe, antitrust reform has the potential to reduce racial inequities in ownership, entrepreneurship, and wealth by prioritizing competition enforcement in highly concentrated industries where people of color are excluded.[214] Policymakers must also proactively remove barriers and provide investments that increase racial equity and inclusion in the tech sector.

1. **Strengthen FTC and Department of Justice enforcement against anticompetitive mergers.** These agencies must incorporate racial equity impact assessments and identify mergers that were previously permitted and allow them to be challenged on the grounds of the findings from applicable racial equity impact assessments.[215]

2. **Protect the intellectual property of smaller companies.** Because small companies risk having their innovative ideas copied and scaled by the largest tech firms, the federal government must continue to defend the US Patent and Trademark Office's PTAB against legal challenges such as a recent lawsuit that aimed to set aside a rule that would make it harder for companies to dispute patents they are accused of infringing.[216] The federal government should also prevent provisions in the Restoring the America Invents Act that would limit the authority of the PTAB to enforce this rule.[217]

3. **Create new forms of capital for emerging ventures.** By creating capital sources that do not rely on debt or equity-based investments (e.g., revenue-based investment), we can increase flexible funding for tech entrepreneurs of color and small businesses.[218] Local capital should be injected through instruments such as community development financial Institutions to support shared prosperity within communities.[219]

4. **Prioritize businesses owned by people of color in government technology procurement.** By setting strong requirements for procurement from people of color-owned tech businesses, the federal government can channel a larger portion of the nearly $700 billion spent annually on procurement to communities of color.[220] The government should also build the capacity of tech

[214] Lee and Chin, "The Debate on Antitrust Reform Should Incorporate Racial Equity."

[215] Federal Trade Commission, "Federal Trade Commission and Justice Department Seek to Strengthen Enforcement Against Illegal Mergers," Press Release, January 18, 2022, https://www. ftc.gov/news-events/news/press-releases/2022/01/federal-trade-commission-justice-department-seek-strengthen- enforcement-against-illegal-mergers; The White House, "FACT SHEET: Executive Order Promoting Competition in the American Economy," Statements and Releases, 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/.

[216] William C. Neer, Matthew R. Ritter, Shannon M. Patrick, and Amanda K. Murphy, PhD, "California District Court Says Cuozzo Bars NHK-Fintiv Challenges," *The National Law Review*, XII, no. 106 (November 22, 2021), https://www.natlawreview.com/article/california-district-court-says-cuozzo-bars-nhk-fintiv- challenges.

[217] Melissa Muenks, "Four Things To Know About the 'Restoring the America Invents Act,'" Baker Botts, October 27, 2021, https://www.bakerbotts.com/thought-leadership/publications/2021/ october/four-things-to-know-about-the-restoring-the-america-invents-act#:~:text=If%20passed%2C%20the%20RAIA%20 would,them%2C%20and%20(4)%20codify.

[218] West, "Antitrust, Labor, and Racial Equity."

[219] Wilson, "Supporting Black Businesses Online with Federal Policies and Recommendations."

[220] Frank Konkel, "Fiscal 2020 Is the Fifth Straight Year of Increased Government Contract Spending, According to Bloomberg Government," *Nextgov*, June 11, 2021, https://www.nextgov.com/ cio-briefing/2021/06/governments-contract-spending-reached- record-high-fiscal-2020/174668/.

entrepreneurs of color to receive and effectively execute procurement contracts, including assistance with solicitation requirements.[221]

    a. Increase the number of shovel-ready people of color-owned and -led small businesses by supporting initiatives such as the US Black Chamber of Commerce-proposed federal Small Business Investment Company, which aims at ensuring "equitable opportunities and resources for historically socially disadvantaged demographics."[222]

    b. Push for the inclusion of tech as a specialty area for the Minority Business Development Agency, which provides business expertise to minority-owned firms looking to secure capital, compete for contracts, and identify strategic partners. Current industry-focused services offered are limited to advanced manufacturing, export, and federal procurement.

5. **Develop mechanisms to invest tech profits in racial equity efforts.** Senator Elizabeth Warren's Real Corporate Profits Tax plan, for example, would tax every dollar of profit after $100 million at a rate of 7 percent.[223] Revenue from this tax model should be used to invest in community-based digital services and technological development in low-income communities and communities of color.

Conclusion

Within the span of just two decades, a handful of new technology companies have come to dominate our economy and command a huge presence in our daily lives. And for years, policymakers stood back to allow them to innovate and grow. But no longer. The time has come to step in with smart policy to guide these companies in a way that produces maximum social good – and eliminates racialized harms that are produced by these companies' activities must be on that regulatory agenda. Not only because it is the right thing to do but also because creating a level playing field expands opportunity and possibility for everyone. By building a broad coalition around a regulatory agenda that centers racial equity, we can create not only a more equitable tech sector but also a more equitable economy in which everyone has access to the resources they need to thrive. Through policies and regulation of the tech sector, we can realize equity: just and fair inclusion in a society in which all can participate, prosper, and reach their full potential.

[221] Tim Lohrentz, *Contracting for Equity: Best Local Government Practices that Advance Racial Equity in Government Contracting and Procurement* (Oakland, CA: Insight Center for Community Economic Development, 2015), https://racialequityalliance.org/wp-content/uploads/2015/12/GARE-Contract_For_Equity.pdf.

[222] US Black Chambers, *The 2021 BLACKprint: Principled Policies for Strong Black Businesses* (Washington DC: The US Black Chambers, Inc., 2021), https://usblackchambers.org/wp-content/ uploads/2021/03/2021-BlackPrint-Updated-V3-1-Alisa-Joseph. pdf.

[223] Elizabeth Warren, "I'm Proposing a Big New Idea: The Real Corporate Profits Tax," Team Warren (blog), April 11, 2019, https://medium.com/@teamwarren/im-proposing-a-big-new- idea-the-real-corporate-profits-tax-29dde7c960d.

Glossary

Business Model Components

- **Advertising:** While the Big Tech companies themselves do not directly sell user data, this profit strategy relies on the primary mass collection, processing, analysis, and retention of user data, ensuring reliance on and therefore continued engagement with their platforms. They use the data to create insights and build tools that they then share with advertisers, which enables them to target users with ads, based on assumed preferences and consumption demands.

- **Data-driven services and computational infrastructure:** Data-driven services are the tools and processes used to host, make sense of, and extract value from data collected by technology platforms and products, such as Google Analytics, Amazon Web Services (AWS), and Azure OpenAI Service. These data-driven services are built upon the computational infrastructure that Google, Amazon, and Microsoft, respectively, own. Owning computational infrastructure as well as the services that are built and operate on top, allows Big Tech to continuously consolidate power by optimizing their own products via the persistent extraction and ingestion of data at multiple levels.

- **Market dominance and regulatory influence:** A key part of Big Tech's business model is to both avoid regulatory scrutiny and influence relevant policies. They do this through mergers and acquisitions, lobbying, provision of computational infrastructure to government departments, and federal research and development funding.

- **Invisibilized labor:** The concept of "invisibilized" labor refers to the way in which Big Tech's business model makes workers, particularly low-wage workers, less visible to management, consumers, policymakers, and each other. This is achieved by stratifying worker classifications and embedding surveillance and automated management technology in the workplace. In doing so, tech companies are able to maximize efficiency and lower labor costs while workers are faced with highly constrained, precarious, and isolated labor conditions.

Other Terms

- **Carceral technologies:** Carceral technologies refer to technologies used in military, policing, or other carceral settings These include ankle monitors and drones, facial recognition technology, and predictive policing. While these technologies are presented as neutral, they reinforce and exacerbate existing discriminatory practices and racial inequities.

- **Section 230 of the 1996 Communications Decency Act:** Section 230 says that an "interactive computer service," like a platform, cannot be treated like a publisher. This

protects platforms from legal liability regarding any illegal content posted on their site by third-party actors.

- **Algorithms and algorithmic decision systems:** Algorithms are predetermined sets of instructions and rules that computers follow in order to complete tasks or solve problems. Algorithmic decision systems (ADS) are increasingly used to make important decisions about people's lives, including social service and public benefit allocation, hiring and firing, and credit-worthiness determination. ADS have particular implications for racial equity as they replicate and amplify the biases and harms in broader society. When used in high-stakes settings, ADS can reinforce marginalized status of poor people and people of color and compound their vulnerability to more discrimination, surveillance, and disproportionate representation in the criminal legal system.

- **Training models:** Training models refer to the initial set of data used by a machine learning algorithm to find patterns and "learn" how to make the decisions that it was built to make. When the data in training models contain racial biases, the algorithms trained on the dataset can replicate and exacerbate these same biases. Using training models also consumes large amounts of energy.

- **Automated management and surveillance technology:** Big Tech increasingly embeds automated management and surveillance technologies, like wristbands that track movement or AI-powered cameras that watch remote workers, in their workplaces, particularly in low-wage settings in which workers are disproportionately people of color. This creates a digital layer between workers and management, customers, and each other that both hides workplace harms and makes it difficult for workers to have these harms appropriately redressed. Data collected through these management systems not only allow companies to more tightly "manage" and surveil their workers, but also improve the development of software systems that are then publicly or privately sold to other companies.

Acknowledgments

Author Bios

Julia Rhodes Davis is a veteran leader and an expert at the intersection of technology, democracy, and social justice. She is a recognized bridge-builder collaborating with advocates and tech developers, philanthropic and movement building communities, grassroots and grass-tops organizations. She is founding principal of Rhodes Consulting, a values-driven consultancy that provides strategic engagement on AI governance and technology policy. Julia is lead author of *Advancing Racial Equity Through Technology Policy*, Senior Advisor to Data & Society Research Institute on the Datafied State Initiative, is a producer for Acts of Reparation, a forthcoming feature-length documentary film, and just wrapped up her final term as Chair of vote.org, the largest digital nonpartisan voter engagement platform in the U.S. Her work on technology policy has influenced organizations including the U.S. Government Accountability Office, Port of Seattle, and the European Commission. As a writer and organizer, Julia explores questions of identity, humanity, and how to lead a life of integrity during this time of increasing social upheaval.

Eliza McCullough is committed to developing research at the intersection of artificial intelligence, racial and economic equity, and policy that powers community change. She currently conducts research on algorithmic justice issues at Partnership on AI. Eliza previously worked with PolicyLink where she led a series of landmark studies assessing the impact of California's Proposition 22 on rideshare and food delivery workers. Her work has been cited in multiple state supreme court cases as well as by the US Commission on Civil Rights. Publications including WIRED, Bloomberg, MarketWatch, and FastCompany have covered her work. Eliza also has experience studying gender and LGBTQ rights in development contexts and has published multiple reports assessing the impact of international development projects on marginalized gender groups. She holds a B.A. in Critical Development Studies and Gender Studies from the University of California, Berkeley.

Sarah Treuhaft is Director of Policy and Partnerships at the Institute on Race, Power, and Political Economy at the New School, which produces research to advance equity and inclusive economic rights. Sarah develops partnerships with local leaders and policymakers to translate the Institute's research into transformative policy changes and leads projects related to equitable public investment, guaranteed income, and guaranteed jobs. Prior to joining the Institute, Sarah was the Vice President of Research at PolicyLink, where she led the National Equity Atlas research partnership with the USC Equity Research Institute. Her research has been widely cited by local and national media outlets and policy-making bodies, and she has written for publications including The New York Times, Cityscape, Health Affairs, and Inequality.org. She holds master's degrees in city planning and international and area studies from the University of California, Berkeley and was a Peace Corps volunteer in Togo, West Africa.