

LITTLE Tech

Is Coming for
Workers



A Framework for Reclaiming and
Building Worker Power

By Wilneida Negrón, PhD

Coworker.org is a laboratory for workers to experiment with power-building strategies and win meaningful changes in the 21st-century economy. At Coworker, we invest in the brilliance of workers by hosting and promoting workplace petition campaigns, prototyping fresh ideas for wielding influence at work and across industries, researching answers to questions about working conditions, and leveraging our vast network of workers in a wide variety of industries to reveal new insights, analysis, and data about what's happening in our economy. We support the leadership and vision of working people to imagine, design, and create our collective future.

Coworker Solidarity Fund is a 501(c)4 nonprofit organization that helps groups of workers raise and distribute money, form effective workplace committees, and experiment with mutual aid and organized advocacy to make changes in their companies and industries.

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"Depersonalization and dehumanization.

That's what technology has meant to me when I've had to interact with it in the workplace and when trying to get benefits (e.g., unemployment)."

— Former call center worker and Uber and Lyft driver who was unemployed during much of the pandemic, Atlanta, GA.

Executive Summary

We are currently experiencing a tech boom many say can only be matched by the original dotcom boom of the late '90s that gave rise to Big Tech.¹ Whether in the workplace, job markets, education, health, housing, or financial services, privatized tech products are proliferating at a speed unlike what we've seen before, turning these issue areas into unregulated markets that further a privatization agenda. While society is still grappling with the social, political, and economic implications of the emergence of Big Tech, our current tech boom is giving birth to a new generation of technology companies that undermine and skirt laws, and are not transparent about the data they collect or how they profit from it. Meanwhile, there is a lack of due diligence of tech products being conducted at every step of the process, from investors, to tech companies, to the customers in the public and private sectors that purchase them. While we still need to address the challenges posed by Big Tech companies (notably Facebook, Amazon, Google, Microsoft, and Apple), we increasingly also need to future-proof our strategies and interventions with emerging companies.

Coworker's analysis of more than 550 tech products, companies, and investors reveals an ecosystem of tech products, companies, and

investors we dub "Little Tech"; the unregulated marketplace of tech products that are collecting and aggregating data about workers at almost every step of the labor process — hiring/recruitment, workplace safety and productivity, workplace and public benefits, reskilling/retraining, et al. Our focus in this paper is on this ecosystem of smaller tech companies, whose influence and role in society is both expanding and problematic.² The proliferation of tech products in the workplace and labor markets is also taking place in other arenas of social life (e.g., housing, financial services, education, etc.) and we have to contextualize these trends within the broader scope of how America's privatized tech innovation strategy in shaping social, civic, and economic life.

If we are to address the structural power of the tech industry and the private capital that fuels it, we will need a mix of economic, policy, and regulatory interventions, along with encouraging and building worker voice and power.

1. "This feels like 1999": Global start-up funding frenzy fuels fears of a bubble." Ryan Browne. CNBC. 7/13/21.

2. Please note that we do omit from this analysis smaller Big Tech companies, such as Twitter, Airbnb, Uber, Lyft, DoorDash, InstaCart, GrubHub, Care.com, and Handy, as we developed the database at the product and not company level, and we were looking at products that had emerged in the workplace in the past one to two years.

A Summary of Our Five Key Findings

1. The current proliferation of tech products has the potential to continue eroding labor standards and weaken worker voice and worker power, while also increasing the potential for discrimination and other harms.

Our analysis shows that technology is increasingly playing a role in shaping how the workplace, job markets, and the economy function; with serious implications for worker voice and power in a rapidly changing economy. Specifically, we have identified six ways that the growth in products and tech companies operating in this unregulated marketplace we call Little Tech is contributing to the exploitation of workers, particularly BIPOC and low-wage workers. The proliferation of gig economy companies and productivity-enhancing tech products are:

- **Deepening and accelerating the datafication of employment³ and extract more (e.g., work, data, efficiency, productivity) from workers** without better pay and in many cases undermining workers' safety and mental health.⁴ To this end, they are contributing to the ongoing reduction of labor standards,⁵ continuing to shift the costs of production onto workers⁶, and fissuring labor markets.⁷ This is a concerning trend given that 1 in 3 U.S. workers currently rely on gig work to sustain their livelihood.⁸
- **Increasing the potential for employers, intentionally or not, to discriminate on the basis of protected classes (e.g., physical or mental disability, sex, race, age).** Our analysis of Little Tech products in our database found that most lack the necessary safeguards and have not conducted sufficient due diligence and impact assessment to ensure products do not discriminate on the basis of protected classes under federal law. For example, some workplace risk management tools integrate incarceration and other law enforcement data into their workplace management platform.⁹

3. "The Datafication of Employment. How Surveillance and Capitalism Are Shaping Workers' Futures Without Their Knowledge." Sam Adler-Bell and Michelle Miller. The Century Foundation. 12/19/18.

4. "Warning: Bossware May Be Hazardous to Your Health." Matt Scherer. Center for Democracy and Technology. 7/24/21.

5. "The Worst of Both Worlds: GoPuff's Gig Workers Have Bosses and No Benefits." Gig workers on the rapidly growing delivery platform, popular among college students, say its business model shouldn't be considered gig work at all. Lauren Kaori Gurley. Motherboard Tech by Vice. 7/12/21.

6. "Wage Slave or Entrepreneur?: Contesting the Dualism of Legal Worker Identities." V.B. Dubal. California Law Review. Volume 105. No. 1. February 2017.

7. The Fissured Workplace. David Weil. 2014.

8. "More Americans are taking jobs without employer benefits like health care or paid vacation." By Rani Molla@ranimolla Sep 3, 2021, 9:00am EDT. Vox.

9. See section on Appriss Retail Secure Store case study.

- **Making it easier for employers to surveil and monitor workers**, which undermines workers' privacy and curtails protected concerted activity, like unionization and collective grievances. This is concerning because it has potential to undermine federal progress through the possible passage of the PRO Act and the establishment of the White House Task Force on Worker Organizing and Empowerment.¹⁰ Meanwhile, for gig economy workers or workers legally classified as independent contractors, employment and labor organizing surveillance can be used to impose non-competes (i.e., watching you to make sure you're not working for someone else).
- **Creating new tech-enabled ways for workers to be economically exploited.** For example, the ability to increase the monitoring of workers as well as the use of algorithmic (Black Box) pay models can increase the potential for establishing at-risk employment relationships or carry out wage theft¹¹ and wage suppression.¹² They can also enable multi-party collusion like wage-fixing and no-poaching under the guise of "best practices" or data-sharing.
- **Accelerating the commodification of low-wage workers' data, particularly by increasing the amount and diversity of data points collected from them.** The increased data points that are being collected on workers inside and outside the workplace, which include everything from health and medical info and biometric data to movement, gestures, and activities, are also being used to automate work and eventually disemploy those very same workers.¹³
- **Undermining workers' basic human right to disconnect,**¹⁴ by merging home and workplace, personal and professional, particularly when workers are required to use personal devices that deliver data to employers, which can be used against them.

10. "Executive Order Establishing the White House Task Force on Worker Organizing and Empowerment." White House. 4/26/21.

11. "Some 7-Eleven stores are using surveillance cameras to prevent workers from stealing, months after some franchisees paid back \$173 million over wage-theft accusations." Tyler Sonnemaker. Business Insider. 6/23/21.

12. "Data Shows Shipt's 'Black-Box' Algorithm Reduces Pay of 40% of Workers." Coworker.org. 10/15/20.

13. "Race and Jobs at Risk of Being Automated in the Age of COVID-19." Kristen E. Broady, Darlene Booth-Bell, Jason Coupet, and Moriah Macklin. The Hamilton Project. March 2021.

14. "Workers of the World, Unplug: The Fight for the 'Right to Disconnect.'" Katie Way. Vice. 10/16/2019.

2. A historic amount of private capital is contributing to the proliferation of tech products to be used in the workplace and in the labor markets.

Our research outlines the convergence of forces (the pandemic, economic uncertainty, recent successful IPOs, et. al) that are contributing to historic increases in the amount of private capital going into tech investments.¹⁵ We have found that investors across the venture capital stack (e.g., family offices,¹⁶ pension funds, and sovereign wealth banks) are contributing to this trend. But there is an increasing number of capital varieties entering early-stage tech company investment that has historically been mostly occupied by venture capital. For example, the increasing role of private equity “growth firms”¹⁷ and hedge funds are increasingly making huge bets on the tech industry. At the same time, new technology companies are increasingly turning to Wall Street to broker deals.¹⁸ Combined, these trends are contributing to the financialization of the tech industry, which has implications for how we build worker voice and worker power.

We have also found that due to the rapid speed of our current tech boom, VCs and institutional investors are not conducting sufficient due diligence on the tech companies they are investing in.¹⁹ This problem was also highlighted in a recent Amnesty International report, which looked at the due diligence practices of 10 major capital firms.²⁰ Therefore, more and newer untested tech companies are entering the workplace and job markets at a rate not seen before.

15. State Of Venture Q2 2021 Report. CBInsights. 7/8/21.

16. “Family offices look to step up their allocation to VC.” Conor Hussey. Venture Capital Journal. 5/26/21.

17. “Growth Firms, Not VCs, Are The Most Active Investors In New Unicorns This Year, And They’re Doubling Down.” Gené Teare. Crunchbase News. 5/17/21.

18. “Startups Turn to Wall Street to Broker VC Deals.” Kate Clark. The Information. 7/14/21.

19. “The Dark Side of the Funding Boom: Skimpy Due Diligence, Burnout.” Kate Clark. The Information. 8/12/2021.

20. “Risky Business: Top 10 Leading Venture Capital Firms Failing In Their Responsibility To Respect Human Rights.” Amnesty International. 7/30/2021.

3. We need to future-proof regulatory and policy interventions and deepen our economic strategies in order to check the market power of tech companies at the industry level.

A lot of the policy and regulatory focus at the moment is rightfully on Big Tech and in particular, on exploring anti-competitive harms of Big Tech on consumers and workers.²¹ While timely and much needed, many of these policy interventions take a “wait to get big” approach that does not necessarily affect smaller or emerging technology companies. For example, some model bills²² only target tech companies that either exceed \$50 million in yearly revenue or have already collected the data of 100 million people. These policy responses could be a powerful intervention to deal with the market power and data hegemony of the Googles and Facebooks, but may be outside the parameters of smaller data brokerage companies such as Argyle, which has already acquired the employment records of 80% of gig economy workers and has an estimated yearly revenue of under \$30 million.²³ As a result, policy and regulatory responses to address Big Tech, without also considering Little Tech, mean that consumers, workers, and regulators will be left reacting after the fact.

Additionally, policy interventions should integrate a market design framework in order to address the economic drivers and increase democratic accountability over the market power of the tech companies and the private tech innovation sector more broadly.²⁴ Market design seeks to translate economic theory and analysis into practical solutions to real-world problems.²⁵ To this end, there is much we can learn about how a market design framework can help guide policy making by looking at the energy²⁶ and 5G markets.²⁷

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21. “Jayapal and Lawmakers Release Anti-Monopoly Agenda for ‘A Stronger Online Economy: Opportunity, Innovation, Choice.’” Congresswoman Pramila Jayapal (D-WA). 6/11/21.
 22. Like the Algorithmic Accountability Act of 2019, which targets companies with more than \$50 million in revenue (or in possession of more than 100 million people’s data).
 23. Argyle Competitors, Revenue, Alternatives and Pricing.
 24. “Woke Capital?” James F. Tierney. LPE Project. 5/5/21.
 25. An invitation to market design. Scott Duke Kominers, Alexander Teytelboym, Vincent P Crawford. Oxford Review of Economic Policy, Volume 33, Issue 4, Winter 2017. Pages 541–571, <https://doi.org/10.1093/oxrep/grx063>.
 26. “Ways of Price Making and the Challenge of Market Governance in U.S. Energy Law. William Boyd. 105 Minnesota Law Review 739 (December 2020), UCLA School of Law, Public Law Research Paper No. 20-23, Available at SSRN: <https://ssrn.com/abstract=3682881>.
 27. “The Role of Regulation in 5G Market Design.” Johannes M. Bauer and Erik Bohlin. Quello Center Working Paper, TPRC47: The 47th Research Conference on Communication, Information and Internet Policy 2019, Available at SSRN: <https://ssrn.com/abstract=3421024> or <http://dx.doi.org/10.2139/ssrn.3421024>. 7/15/19.

The ongoing market power of Big Tech, and the current speed of technological innovation and proliferation of tech companies, call for the field to adopt multiple strategies concurrently in order to develop a more proactive response. Therefore, while our analysis shows that we need to increasingly future-proof current policy and regulatory interventions, we continue to closely monitor new companies and products interacting with workers and labor markets (especially in mergers and acquisitions²⁸), and integrate a market design framework in order to look beyond antitrust reform or privacy laws, and also explore a variety of interventions such as strengthening labor market protections, disclosure of corporate money in politics, board constituency mandates, review of tax incentives and subsidies given to companies, and (E)ESG [Employee, Environmental, Social, and Governance] and ESG [Environmental, Social, and Governance] disclosures,²⁹ mechanisms for building worker voice and power, and more.

28. "Startups Are Acquiring Other Startups At An Unprecedented Pace." Sophia Kunthara. Crunchbase News. 7/20/21.

29. "The Politics of Price Making: Why LPE Needs to Engage with Market Design." William Boyd. LPE Project. 1/20/21.

4. Unrestricted and privatized technology innovation erodes the public interest and deepens inequality.

Given the emergence of Big Tech, backlash against Silicon Valley, and calls for more ethical, responsible, or public interest tech companies, one would think that the era of unrestricted technology innovation would be over. However, Silicon Valley and the tech industry in general are stronger now than ever. As a result, they are becoming benefactors of the incentives, institutions, and aspirations that make up the neoliberal agenda that's persisted in American politics and economics. This is the tradition by which policymakers invite and enable the private sector and capital owners to shape corporate and policy practices that affect everything from reducing the bargaining power of workers, globalization, wage suppression, tolerating new business structures that disempower workers and fissuring the workplace, to the more recent pushes for automation.³⁰ Meanwhile, financial market deregulation has increased the power of capital owners (e.g., investors and stockholders) to pressure companies to focus on maximizing shareholder value above all else³¹ and to incentivize private capital and the state to invest in companies which undermine low-wage workers and BIPOC workers.

The exploitation of America's neoliberal strategy by the tech industry can be seen in the renewed push for automation due to the pandemic.³² Currently, there are a number of growing venture capital funds devoted to automating the economy,³³ while tax subsidies help companies purchase machines that displace workers.³⁴ Or consider the fact that two small tech companies have made billions in fees from small business loans that Congress designated to help small businesses weather the pandemic.³⁵

Nowhere in these interactions and processes between the state, business, and private capital owners are the voices and concerns of low-wage and BIPOC workers integrated. Just as we failed to consider research that outlined the economic devastation inflicted on Black communities from the decline in manufacturing jobs, we are repeating the same error now by not considering the race and class implications of automating low-wage sector jobs. Blocking America's most economically vulnerable workers is a "failure by design," engineered by those with the most wealth and power.³⁶ As economist Noah Katz's states

30. "Identifying the policy levers generating wage suppression and wage inequality." Lawrence Mishel and Josh Bivens. Economic Policy Institute. 5/13/21.

31. "Domestic Outsourcing in the United States: A Research Agenda to Assess Trends and Effects on Job Quality." Annette Bernhardt, Rosemary Batt, Susan Houseman, and Eileen Appelbaum. Prepared for the Future of Work Symposium, U.S. Department of Labor, Washington DC, December 2015.

32. "Pandemic Wave of Automation May Be Bad News for Workers." Ben Casselman. The New York Times. 7/3/21.

33. Base10: Automation for the Real Economy.

34. "Forward Thinking on technology and political economy with Daron Acemoglu." Michael Chui and Anna Bernasek. McKinsey and Company.

35. "How Two Start-Ups Reaped Billions in Fees on Small Business Relief Loans." Stacy Cowley and Ella Koeze. The New York Times. 6/27/2021.

36. Failure by Design. The Story Behind America's Broken Economy. Josh Bivens. The Economic Policy Institute. 2011.

in “Thinking Intersectionally About Race and Class in the Trump Era,” treating issues like these as “‘economic’ issues, and therefore outside questions of racial justice, dangerously circumscribes racial critique. It also insulates those perpetuating such neoliberal policies from accountability in racial justice terms.”³⁷ At the same time, the state’s ability to foster equity, prevent or redress the potential harms caused by these products, and invest in the public interest and vital social and human infrastructure³⁸ is severely undermined.

37. “Thinking Intersectionally About Race and Class in the Trump Era.” Noah Zatz. LPE Project. 11/12/2017.

38. In “How Sadie Alexander, the First Black Economics PhD, Became a Voice for Black Workers,” Nina Banks, PhD, notes that as early as 1945 Sadie Alexander spoke about the need to invest in public works programs, beyond physical infrastructure (roads, bridges, etc.), which she defined as social infrastructure, or what Dr. Banks finds that today people call human infrastructure. Investment in social infrastructure was seen as a way to remedy and address key social needs, such as housing and employment.

5. Listing, classifying, and analyzing Little Tech’s direct harms can build worker voice and power and strengthen regulatory efforts.

Looking beyond privacy, more research is needed to outline the potential harms that technology can bring to workers. This means looking at how technology deepens the power imbalances that workers face in the workplace and labor markets, and identifying the ways that technology exacerbates and/or facilitates exploitative labor practices that disproportionately affect low-wage and BIPOC workers, such as wage theft, wage suppression,³⁹ discrimination, at-risk employment relationships, economic mobility, and more. A growing body of research is identifying a variety of these potential harms. MIT economics professor Daron Acemoglu has found, for example, that technology and intentional policy decisions are a root cause of the increase in inequality in the U.S. labor

market over the last four decades.⁴⁰ Other research examines the health implications of workplace technologies.⁴¹

Defining a broad array of potential harms informed by workers’ stories and experiences can better equip workers to report complaints to relevant regulatory agencies. This would help build a body of evidence regarding the encroachment and misuse of tech in the workplace and job markets, but can also provide context for how these technologies are actually implemented in the workplace (rather than relying on the products’ stated use/purposes and business goals). Therefore, workers can help regulators identify the “off-label” uses of these technologies.

In conclusion, can our society and economy continue to sustain unrestricted technology innovation—especially as data increasingly power innovation?⁴² Probably, but at great cost to low-wage workers and the functioning of a democratically owned and inclusive economy. In order to curb the growth of this unregulated marketplace, our paper stresses the importance of aligning organizing, policy and regulatory, and economic strategies in order to address the problem at the industry and market level. At the forefront of this is the need to build worker voice and power among America’s low-wage, immigrant, and BIPOC workers, alongside white collar workers in order to build a broad multiclass movement that can address these trends not only in Big Tech, but in corporate America and the startup community as well. We also argue for the need to integrate a market design framework in designing strategies for checking the market power of the tech industry at the structural and market level.

39. “Identifying the policy levers generating wage suppression and wage inequality.” Lawrence Mishel and Josh Bivens. Economic Policy Institute. 5/13/21.

40. “Forward Thinking on technology and political economy with Daron Acemoglu.” Michael Chui and Anna Bernasek. McKinsey and Company.

41. “Warning: Bossware May Be Hazardous to Your Health.” Matt Scherer. Center for Democracy and Technology. 7/24/21.

42. “Balancing Privacy with Data Sharing for the Public Good.” David Deming. The New York Times. 2/19/21.

Introduction

We are currently in a period of rapid technology innovation. The unprecedented demand for digital products and services due to the pandemic, soaring IPOs, record growth of tech unicorns,⁴³ and strong tech industry funding rounds,⁴⁴ have us in a tech boom many say can only be matched by the original dotcom boom of the late '90s that gave rise to popular, consumer-facing Internet software companies, also known as Big Tech.⁴⁵ In a society facing the prospect of long-term unemployment, political polarization, and systemic racism, thousands of new tech products and hundreds of new tech companies are creating the infrastructure that workers and consumers will increasingly have to interface with either in the workplace, job markets, housing, education, health care, financial services, etc. Due to the all-encompassing influence of America's privatized technology innovation and the lack of sufficient due diligence being conducted at every step of this innovation process (from investors to companies and the public and private sector customers who are purchasing these products), we need to critically examine the ways that tech products, tech companies, and the tech industry more broadly are building future economies and societies. We particularly need to investigate where that is happening in ways that can further weaken, marginalize, and exploit workers who have been historically been vulnerable to market shifts the past 50 years — specifically, America's working class, low-wage, BIPOC, immigrant, and disabled workers.

Our research has identified more than 550 products, which we've assembled into a searchable database and dubbed Little Tech; the unregulated marketplace of tech products that are collecting and aggregating data about workers at almost every step of the

labor process — hiring/recruitment, workplace safety and productivity, workplace and public benefits, reskilling/retraining, et al., that touch on every part of the labor process. With all-encompassing attentiveness, Little Tech extracts more (work, data, efficiency, productivity, etc.) from workers without better pay and in many cases undermines workers' safety and mental health. In many instances, Little Tech products use workers as captive test subjects for new technologies and increase the potential for employment and labor organizing surveillance, exclusion, economic exploitation, and intimidation. Little Tech, as a function of our country's privatized tech innovation strategy, doesn't see low-wage and other vulnerable workers as stakeholders or beneficiaries, but rather markets, verticals, as well as business and investment opportunities to win over and conquer. It is no surprise that these workers are among the furthest removed from the boardrooms, Silicon Valley, and other tech hubs where decisions shaping the future of the workplace and job markets are increasingly being made.

The acceleration of technology during the pandemic is especially concerning as the United States lacks robust labor and privacy protections that strengthen and support worker voice and worker power on the issues most critical to the changing workplace.

The asymmetrical bargaining power between workers and employers is one of the main barriers to workers' ability to push back. Workers also face constrained legal avenues (such as forced arbitration, class action bans, non-competes, and NDAs), and only three-quarters of private-sector workers and two-thirds of public employees have the right

43. "Technology unicorns are growing at a record clip." *The Economist*. 7/19/21.

44. "Silicon Valley Venture Capital Survey – First Quarter 2021." Posted by Cynthia Hess, Mark Leahy, and Khang Tran, Fenwick and West LLP. Harvard Law School's Forum on Corporate Governance. 6/2/21.

45. "Global VC view: Funding startups in the next normal." Podcast. McKinsey and Company. 5/14/21.

to engage in collective bargaining.⁴⁶ While workers are beginning to push back, the speed by which technology products are proliferating during the pandemic and the growing financialization of the tech industry mean that our accountability and governance over these technologies may never be able to catch up unless we begin to design our strategies with a future-focused lens and framework. At the same time, we also need a new doctrine of rights and protections for workers and society in relation to these technologies and tech innovation and to address the harms and externalities to workers and the economy.

46. Collective Bargaining. AFL-CIO.

Defining

the Little Tech Marketplace

Over the past year, more than 300,000 front-line and essential low-wage workers in multiple industries, including retail, childcare, healthcare, service/hospitality, and grocery, launched more than 300 campaigns on Coworker.org related to the pandemic.⁴⁷ In our conversations with these workers, many who found themselves unemployed and navigating a broken UI (unemployment insurance) system, we learned two things about what low-wage workers are facing in this time of great economic precarity and instability. First, we learned that when labor protections and policy interventions are weak or absent and technology breaks down, low-wage workers who are disproportionately Black, Hispanic, immigrant, and female are largely left to fend for themselves. During the past year, many workers have had to rely on informal mutual aid networks, charity, GoFundMe and similar crowdfunding sites, and other social media support groups such as Reddit, which was dubbed by The New York Times “America’s Unofficial Unemployment hotline,”⁴⁸ for material and emotional support.

Second, we found that due to the pandemic, workers were increasingly interfacing with technology products. These includes everything from taking daily temperature checks through thermal imaging body temperature scanners; accessing app-mediated payday loans (see Kroger’s partnership with the DailyPay app⁴⁹); using wellness apps;⁵⁰ gig workers relying on startups such as Blueacorn and Womply to access their Paycheck Protection Loans;⁵¹ unemployed workers encountering

facial recognition company ID.me to access UI benefits; utilizing hiring and recruitment technology to find new jobs; and countless more. Tech was suddenly everywhere.

As we began to catalog the hundreds of products workers were interacting with, we catalogued the marketplace of smaller tech companies whose products touched on key aspects of the labor process. With the exception of the important research and advocacy conducted by groups working on immigration, racial justice, or criminal justice, which tend to look at smaller tech and data vendors operating criminal justice, immigration, and housing, less analysis is generally given to the sectors and areas occupied by hundreds of smaller tech companies.⁵² It is this ecosystem that we have dubbed Little Tech.

While Big Tech focuses on the largest consumer-facing Internet software companies (Amazon, Apple, Google, Facebook, Microsoft), Little Tech is made up of thousands of commercial vendors, business intelligence tech firms, military/defense tech companies, startups, data brokers, and app developers⁵³ that lay the infrastructure for how the economy, workplace, and job markets will work in the 21st century and beyond. For the purposes of our analysis, we omitted other large tech companies such as Airbnb and Palantir, which are pervasive and have considerable market power, but are not considered Big Tech or Little Tech. However, these companies do face increasing scrutiny. For example, Palantir has been the target of immigration rights groups

47. “These workers led successful campaigns to improve COVID-19 policies,” Coworker.org. 12/3/20.

48. “Reddit Is America’s Unofficial Unemployment Hotline.” Ella Koeze. The New York Times. 2/10/2021.

49. [Kroger’s partnership with DailyPay](#).

50. “The Rise of the Wellness App.” Jenna Wortham. The New York Times. 2/17/21.

51. “How Two Start-Ups Reaped Billions in Fees on Small Business Relief Loans.” Stacy Cowley and Ella Koeze. The New York Times. 6/27/21.

52. For example, immigration rights groups such as Mijente and Just Futures Law have conducted corporate and legal research on companies such as Palantir and Northrop Grumman.

53. It also includes Big Tech and their more recent acquisitions, patent filings, and other product innovations.

such as Mijente for its role in providing the technology infrastructure that powers U.S. Immigration and Customs Enforcement (ICE). Meanwhile, Airbnb faces increasing demand to enforce local zoning and housing laws and has been criticized for not doing enough to reduce the racial disparities in their Smart

Pricing algorithm.⁵⁴ Therefore, while these companies do warrant scrutiny, we opted to focus on smaller, more niche commercial and private players such as legacy commercial vendors, business intelligence vendors, military/defense tech companies, and startups.

The Types of Companies That Make Up the Unregulated Little Tech Marketplace

- **Traditional commercial vendors.** Commercial vendors such as Oracle and Thomson Reuters⁵⁵ continue to develop more intrusive and sophisticated workplace monitoring systems that are expanding the collection of vulnerable worker data such as sentiment, heart rate, blood pressure, and mental health status.
- **Traditional business intelligence vendors.** There are hundreds of companies that currently supply business intelligence products to the public and private sector. A number of companies in this category are creating workplace monitoring tools, many which are used to monitor and surveil workers inside and outside the workplace.
- **Military/defense tech companies.** Silicon Valley's roots go back to serving as the innovation arm for the U.S. Department of Defense. During the pandemic, you could see a reconnection to that original union through relationships with companies such as Feevr, FLIR, and Opgal Optronics Industries; Thermoteknix Systems Ltd., which contracts with the U.S. Army, during the pandemic has been selling sophisticated thermal imaging and facial recognition technologies for use in the public sector and workplaces. These companies are often at the forefront of major research and development that drives technological advances and breakthroughs.
- **Startups, newer employment and worker data brokers, and app developers.** This is the sector that is contributing to the current tech boom as a record amount of venture capital is being raised to help new tech companies scale and enter the market quickly, with products to help us navigate the pandemic (e.g., telehealth, edutech, prop(erty) tech). Their products touch on every part of the labor process—hiring, workforce management, payroll advancement, reskilling, accessing workplace benefits, etc.

54. "How Airbnb failed its own anti-discrimination team — and let racial disparities slip through the cracks." Hayden Field. Morning Brew. 6/15/21.

55. Note that while some of the companies we mention are by no means small, their individual products may fall under the rubric of Little Tech.

As noted earlier, Little Tech is unique in its intrusiveness into the lives of low-wage workers because these products are used in all aspects of labor, hiring, workplace and workforce management, gig economy, benefits, and more. Whether through the proliferation of gig economy companies or “productivity-enhancing tech,” many Little Tech products extract more (work, data, efficiency, productivity, etc.) from workers without better pay and in many cases undermining workers’ safety and mental health. Many also lack the safeguards needed to prevent discrimination on the basis of protected categories (disability, gender, race, etc.), even as they collect and monopolize an increasing amount of sensitive worker, employment, and workforce data (such as health, medical, and biometric, employment records, wages, sentiment, mood, and productivity analysis inside and outside the workplace).

Expansion of Gig Economy Companies in the Little Tech Marketplace: A Case Study of GoPuff

GoPuff is a fast-growing delivery start-up founded in 2013. It is among the next generation of delivery startups such as Gorilla, Getirs, Drizly, Eaze, Fridge No More, Duffl, etc., which promise to deliver food and beverages, household items, medications, etc., within minutes. GoPuff promises to deliver groceries in 30 minutes or less, sourced from micro-fulfillment centers. It is now in more than 500 cities in the U.S. and as of June 2021 had raised \$3.4 billion in a Series H funding round.

In its short history GoPuff has already been engaging in problematic business practices. Below is an overview we uncovered in our research:

- 1. Anti-competitive behavior.** The FTC is currently investigating a partnership established with Uber in May that allows consumers to order items from GoPuff through the UberEats⁵⁶ delivery app. The FTC is investigating whether the partnership hampers competition in the online and delivery sphere. The investigation also signals that antitrust regulators are looking to intervene in still-developing industries in an effort to avoid repeating what some at the agencies believe were mistakes — decisions made a decade ago to not bring enforcement actions when companies, including Google and Facebook, were cementing their dominance in search and social networking. In 2021, GoPuff made acquisitions of five companies that include smaller competitors, local food and alcohol retail chains, and a ride hailing analytics company.
- 2. Receiving tax credits and subsidies in the guise of job creation.** GoPuff has received tax credits and state subsidies to assist in building its warehouses. For example, in 2018 New Jersey issued them a tax credit of \$39.1 million over 10 years.⁵⁷

56. “FTC Investigating Uber’s GoPuff Partnership Alongside Drizly Deal.” Josh Sisco and Mark Di Stefano. The Information. 8/10/2021.

57. “GoPuff Announces New Distribution Center in New Jersey.” GoPuff Press Release. 12/10/2018.

3. GoPuff workers strike over reported inconsistent and non-transparent pay structures. In October 2021 GoPuff workers organized a strike in Philadelphia due to pay inconsistencies.⁵⁸

4. Reportedly, disguising user analytics to validate explosive growth to investors. On Reddit, drivers and GoPuff warehouse workers allege that⁵⁹ the company is turning a blind eye to promo code fraud, and workers have been told by managers that the company does not want to know about users with 50 accounts (each redeeming a \$25 new user credit). The workers suspect that a reason for this is that managers may have an incentive to demonstrate to investors that usage of the GoPuff platform is increasing. However, we note that coupon fraud is inconsistent with GAAP and depending on the dollar amount, often must be reported to the FTC,⁶⁰ IRS, or the FBI.⁶¹

5. GoPuff appears to focus its loss prevention efforts on workers, not customers. According to conversations among GoPuff drivers on Reddit,⁶² who report potential instances of credit card fraud and customers with multiple accounts, GoPuff appears to be

focused on the possibility of worker theft. For example, workers claim that the company has invested in Solink AI surveillance cameras for its warehouses in order to monitor its workers. A case study on the Solink website says that GoPuff also uses Solink technology to identify “unproductive activities” in addition to theft because “the all-encompassing benefits of Solink’s video/data analytic ability is more than a deterrent to fraud.”⁶³

6. Concerns about the fair allocation of delivery assignments. GoPuff appears to use the “When I Work”⁶⁴ platform to manage delivery assignments by managers. Workers have complained on Reddit that managers can see the tip amount and assign high-tip assignments to their favorite workers.⁶⁵

58. “Gopuff workers strike at one of the \$15 billion startup’s busiest warehouses.” By Tom Dotan. Oct 29, 2021, 1:16 PM. Business Insider.

59. [I am a driver for many apps and was wondering.](#) GoPuff Reddit discussion.

60. [Deceptive Pricing.](#) FTC.

61. “[Extreme Couponing or Coupon Fraud?](#)” StoneBridge Business Partners.

62. [I am a driver for many apps and was wondering.](#) GoPuff Reddit discussion.

63. [Game-changing digital delivery service partners with Solink to enhance safety, security at 70+ order micro-fulfillment centres.](#) Solink Success Story.

64. [When I Work,](#) Employee Scheduling & Time Tracking Software.

65. [Stop the employees from seeing tips.](#) Reddit GoPuff Discussion.

The Scope

of the Study

Our research, which ran from November 2020 until May 2021, catalogued more than 550 products (not the companies that created them) that are currently interfacing with low-wage work and low-wage workers. However, it is important to note that while the database collects information on products that touch on both white collar and low-wage sectors, this report primarily discusses the experience of low-wage and hourly workers, because these occupations are the ones facing the most economic precarity, are disproportionately occupied by BIPOC communities, and also include sectors the most susceptible to algorithmic management, time tracking, and employment and labor organizing surveillance.

The Little Tech database is available on our website: [Bossware and Employment Tech \(home.coworker.org/worktech\)](https://home.coworker.org/worktech). Please note that the database is not exhaustive, and we omitted or overlooked hundreds more products that were still emerging or in development as well as non-U.S. products. We stopped collecting information once we felt we had sufficient evidence of the pervasiveness of Little Tech as well as a

good assessment of the economic drivers and key investors contributing to its growth during the pandemic.

Thirty-one percent of the products listed emerged between 2020 and 2021; the rest were developed between 2018 and 2020. Whenever possible we sought to capture information on workers and industries targeted; policies on privacy and data usage, storage, and retention; investor information; and upcoming patents.⁶⁶ When you consider that journalists have also documented nearly 500 new Covid-related iOS apps⁶⁷ alone since the global pandemic began, you start to get a sense of the speed and vastness of Little Tech in the past two years.

As noted earlier, most of the products touch on the whole labor process (hiring and recruitment, workplace safety/productivity, reskilling, wages/payroll, accessing public benefits,⁶⁸ and other workplace benefits). In order to capture the stage of the labor process most affected by a particular product, we categorize the products in four areas:⁶⁹

- 1. Workplace performance, productivity monitoring**
- 2. Workplace safety**
- 3. Workplace benefits, health, and well-being**
- 4. Labor, job market, and workplace optimization**

66. Investor information was obtained from Crunchbase. For app permissions and hardware usage data, we have relied on the data available in the Google Play store for Android devices. In assessing the privacy implications of a product, we have relied on publicly accessible privacy statements, terms of service documents, and public impact assessments.

67. "The Pandemic App Ecosystem: Investigating 493 Covid-Related iOS Apps Across 98 Countries." Jonathan Albright, Digital Forensics Initiative at the Tow Center for Digital Journalism. 10/28/20.

68. "21 States Are Now Vetting Unemployment Claims With a 'Risky' Facial Recognition System." Dave Gershgorin. OneZero. 2/4/21.

69. Some products may end up in two categories, as in the case of automation/robotics, which has historically been seen as a tool to help optimize the workforce; during the pandemic robotics was used to compensate for the inability to work onsite. The same goes for products that do physical monitoring/location tracking, which have been used to enforce social distancing in the workplace but have also been used for workplace performance and productivity tracking.

1. Workplace performance, productivity monitoring

- Video surveillance (recording software, CCTV, etc.)
- Physical monitoring, location tracking
- Keystroke/screen logging software
- Productivity scoring
- Social media monitoring
- Phone logs
- Scheduling
- Personality profiling, voice profiling
- Sentiment analysis, brain reading
- Worker movement and worker organizing

2. Workplace safety

- Fever checks
- Symptom checker/workforce health assessment
- Contact tracing
- Safety forecasting
- Social distancing enforcement
- Automation/robotics
- Physical monitoring, location tracking

3. Workplace benefits, health, and well-being

- Payroll process and other forms of tech-enabled payday loans through wages
- General health and wellness apps (such as mental health, mindfulness, and virtual therapy)

4. Labor, job market, workplace optimization

- Hiring and recruitment
- Unemployment
- Sectoral-contingent workforce platforms/gig economy
- Retraining/reskilling, workforce development
- Automation/robotics

Database Product Taxonomy

Based on this taxonomy, we found that most products are either trying to promote workplace safety (40%) or optimize the functioning of the labor markets (38%). Regarding the pervasiveness of data collection practices of many of these products, we find the same types and varieties of data currently being collected from workers with no clear and consistent safeguards that is consistent with UC Berkeley Labor Center's list in their report on workplace tech and algorithms. These data points include everything from historical data, biometric data, health and wellness data, cognitive and behavioral data, workplace activities and interactions data, job activity data, evaluation data, and data on workers' digital footprint and online activities.⁷⁰

Central to our analysis was needing to move beyond a privacy-only framework and begin to identify and outline the variety of risks and implications each product could pose to workers, in particular low-wage workers. These include:

- 1. Direct harms.**
- 2. Implications for worker voice, representation, and power.**
- 3. Economic drivers and capital markets ecosystem.**
- 4. Changes in employment norms, culture, and values.**

1. Direct harm focuses on the risks and impacts that the products can cause workers. More specifically it looks at the potential that the product poses for the following harms:

- a.** Unwarranted third party usage of workers' data.
- b.** Undermining of worker privacy.
- c.** Harms introduced due to limited digital access and digital literacy.
- d.** Undue employment and labor organizing surveillance, monitoring inside and outside the workplace, workers' right to disconnect, which could increase the potential for:
 - Economic exploitation such as helping to facilitate financial violations such as wage theft, wage miscalculations,⁷¹ or other financial techniques, such as driver-leasing,⁷² that affect gig workers.
 - Fissuring of tasks in the workplace which can extract more labor, time, and resources from workers without compensation.
 - Undermining workers' rights to organize or whistleblow.
 - Facilitating excessive disciplinary or retaliatory labor practices.
- e.** Facilitating the discrimination and harassment of protected classes (e.g., racial/ethnic, sexual, disability, religious), harassment.

70. "Data and Algorithms in the Workplace: A Primer on New Technologies." Lisa Kresge. Working Paper, Technology and Work Program. Center for Labor Research and Education, University of California, Berkeley. November 2020.

71. See Coworker.org study of Shipt's "Black-Box" Algorithm that was reducing workers' wages by 40%: <https://home.coworker.org/data-shows-shipts-black-box-algorithm-reduces-pay-of-40-of-workers/>.

72. "Wage Slave or Entrepreneur?: Contesting the Dualism of Legal Worker Identities." V.B. Dubal. California Law Review. Volume 105. No. 1. February 2017.

- f. Promoting at-risk employment relationships (including misclassification and human trafficking, among other crimes against workers).
- g. Increasing exposure to physical risks and hazards.
- h. Negatively affecting workers' mental health, morale, and well-being.
- i. Increasing the potential for labor market concentration,⁷³ which contributes to depressed wages over time,⁷⁴ as well as creating barriers to workers' ability to access quality jobs and upward mobility in the job markets or through fissuring of the labor markets.
- j. Creating barriers to workers' ability to access workplace, labor market, and societal benefits (e.g., paid time off, unemployment benefits, access to housing), protections, and rights.

2. Implications for worker voice, representation, and power. We sought to identify the ways that the products could undermine workers' ability to organize and collectively bargain with employers. Specifically, this analysis seeks to build upon research looking at established and growing industry focused on predicting future protests and labor organizing activity across global supply chains⁷⁵ and risk management startups.⁷⁶

3. Economic drivers, capital markets, and the political economy of the tech industry:

For this area we focused on understanding the market forces and economic drivers that are accelerating and shaping the current tech boom and the ways they influence the entrepreneurship, funding, and business models of the products in our database. We also analyzed to what extent these economic drivers also deepen social and economic inequities in society and undermine public participation in decision-making and the underpinnings of a more democratically owned economy.

4. Changes in employment norms, culture, and values:

While many say technology is neutral, history has shown that technology embodies values, ethics, culture, and norms in its design and implementation. We think it is important to identify the values and normative practices that shape our interactions in and out of the workplace and to what extent those values continue to come from the mostly homogeneous Silicon Valley culture, or if Big and Little Tech consider and integrate the perspectives, needs, and wishes of low-wage workers, especially BIPOC.

73. "What labor market changes have generated inequality and wage suppression?" Josh Bivens and Heidi Shierholz. EPI. 12/12/18.

74. "Forward Thinking on technology and political economy with Daron Acemoglu." Michael Chui and Anna Bernasek. McKinsey and Company.

75. Gabriel Grill. "Future protest made risky: Examining social media based civil unrest prediction research and products." Computer Supported Cooperative Work (CSCW). 2021.

76. [List of risk management startups at Crunchbase](#)

Economic Drivers and Political Context

This section outlines the findings from our analysis of the economic and political factors underpinning not only the current tech boom, but the tech industry that drives our privatized innovation strategy more broadly. Increasing transparency and understanding over these complex socio-economic factors, processes, and systems is essential to begin outlining ways to build worker voice and worker power.

Little Tech isn't little.

Little Tech is not little, and in fact is currently expanding at a rate not seen before. As noted earlier, it is a vast marketplace made up of thousands of commercial vendors, business intelligence tech firms, military/defense tech companies, startups, data brokers, and app developers,⁷⁷ whose products provide essential infrastructure in the public and private sectors. Little Tech marketplaces are increasing in multiple areas of society and the economy. For example, advocates have been monitoring Little Tech spaces in housing/"landlord"/prop tech, education (ed-tech), financial services (fin-tech), care tech,⁷⁸ health tech, climate tech,⁷⁹ real estate tech, "labor-saving robotics,"⁸⁰ and more. Take the case of "landlord little tech,"⁸¹ which is made up of hundreds of landlord or property ("prop") tech companies whose products are used for automating eviction and homelessness, neighborhood surveillance,⁸² and helping administer security deposits.⁸³ "Ed tech" is another area that has proliferated during the pandemic as schools and universities have had to quickly roll out technological solutions without necessary protections and safeguards for students, teachers, and families.⁸⁴ Final-

ly, the health Little Tech ecosystem has also rapidly expanded during the pandemic. A Wall Street Journal article covering the proliferation of digital-health startups noted that customers such as hospitals and medical offices have been overwhelmed with all the products and "are inundated with too many options."⁸⁵ In the employment and labor Little Tech spaces, the types of companies involved in the expansion of tech products vary greatly and include major commercial vendors such as Oracle and Thomson Reuters, and less-known traditional business intelligence vendors such as Perceptyx and Interguard, whose workplace productivity tools have been used to surveil workers and crack down on workplace organizing.⁸⁶ Likewise, most consumers and workers have likely not heard of military/defense tech companies such as Feevr, FLIR, Ogpal Optronic Industries, and Thermoteknix Systems Ltd, but their research and development is often at the forefront of technological advances that will at some point be used in a civilian context. For example, the U.S. military is currently funding a new AI tool that will use data from public posts on Twitter, Reddit, and headlines from The Onion, et al., to detect

77. It also includes Big Tech (and their more recent acquisitions, patent filings, and other product innovations).

78. "The future of elder care is here – and it's artificial intelligence." Zoe Corbyn. The Guardian. 6/3/21.

79. "Friday Letter: Climate tech investing resonates with real estate." Alastair Goldfisher. Venture Capital Journal. 5/21/21.

80. "What This Year's Seed Funding Tells Us About The Startup Future." Joanna Glasner. Crunchbase News. 5/21/21.

81. The Anti-Eviction Mapping Project maintains a watchdog website on the use of landlord tech in the U.S. Visit here for more info: <https://antievictionmappingproject.github.io/landlordtech/>.

82. "Keeping an Eye on Landlord Tech." Erin McElroy, Wonyoung So, and Nicole Weber. ShelterForce. 3/25/21.

83. "Startup Alternative to Rental Security Deposits Gets Legal Backing in Baltimore." Rachel M. Cohen. The Intercept. 5/5/21.

84. A multi-issue conversation organized by the Open Technology Institute at New America brought together advocates from education and labor to discuss surveillance and privacy concerns emerging during the pandemic. For more info visit: "[Working and Learning During the Pandemic](#)." New America. 10/15/20.

85. "Digital-Health Startups Are Booming. Their Customers Are Overwhelmed." Rolfe Winkler. Wall Street Journal. 5/3/21.

86. "Companies Are Using Employee Survey Data to Predict—and Squash—Union Organizing." Sarah Kessler. OneZero. 7/30/20.

sarcasm and intentional falsehoods.⁸⁷ The final types of companies that have been dominant in employment and labor Little Tech are startups, newer employment and worker data brokers, and app developers, whose products touch on every part of the labor process (hiring, workforce management, payroll, gig economy, reskilling, accessing workplace and public benefits,⁸⁸ etc.) Because of the reliance on private sector innovation to address public sector problems, these newer startups tend to build on each other, offering technocratic solutions to systemic problems in job markets (e.g., paycheck advance apps instead of providing livable wages⁸⁹), as well as creating privatized infrastructure that will monopolize employment and worker data in the long run.⁹⁰

The emergence of major gig economy companies in the last 10 years has also given rise to new tech companies such as Argyle and startups such as Gridwise, Stoovo, Para, and Appjobs.work, which collect data from gig economy workers and also develop gig-mobility tracking products that use data generated by ride-hail and delivery service workers.⁹¹ Each new generation of tech products builds on the previous one and the non-transparent extractive data collection practices become more embedded, closed-off, unaccountable, and normalized.

The proliferation of tech products accelerating the datafication of employment and extracting more (work, data, efficiency, productivity) from workers: Argyle Case Study

One of the companies whose products are listed in our database is Argyle, a fintech and financial data broker company founded in 2018 that seeks to become the Gateway to Employment Data.⁹² In a very short time, Argyle has added another layer of proprietary technology that further locks workers out of their data, thereby reinforcing the data monopoly of gig economy companies. Additionally, through their proprietary API a new generation of gig mobility analytics companies such as Gridwise and Stoovo create heightened competition for companies and initiatives built on workers directly collecting and aggregating their own data.

Argyle claims to have already acquired the employment records of 80% of gig economy workers, over 40 million Americans in the U.S., and have access to workers' data from companies that employ a large segment of low-wage workers such as Kroger, Amazon, USPS, Walmart, Walgreens, CVS, Starbucks, Uber, FedEx, BestBuy, Home Depot, UPS, Target, and Yum! Brands.

87. "How to Detect Sarcasm with Artificial Intelligence." Patrick Tucker, Defense One. 5/10/21.

88. "21 States Are Now Vetting Unemployment Claims With a 'Risky' Facial Recognition System." Dave Gershgorin. OneZero. 2/4/21.

89. "Advocates Say Paycheck Advance Apps Continue Cycles of Poverty." Michael Butler. Next City. 5/19/21.

90. The increasing reliance on private sector innovation to public sector problems can also be seen in landlord and housing issues. For more info, see "Startup Alternative to Rental Security Deposits Gets Legal Backing in Baltimore." Rachel M. Cohen, The Intercept. 5/5/21.

91. Gridwise: What is gig mobility data?

92. Per their slogan.

On this page that number is broken down as 80% of gig economy workers, 15% of deskless workers (FedEx), et al. In a [note to investors](#) they also mention that their clients are largely payday loan providers. However, their employment data is used for income verification services they provide to general loan servicers, lenders, and insurers. It's important to note that Argyle has much loftier long-term goals than just providing income verification services. In a 2019 interview, the founders of Argyle said that they not only want to focus on “financial insights such as income earned before payout transfer but a holistic view of a worker’s identity including typical hours, work trajectory, reputation, and more.”⁹³ Therefore, this will become a tool for the future extreme vetting of workers, especially low-wage, immigrant, and other BIPOC workers.

Earlier in 2021, Argyle was found to be breaking U.S. anti-hacking laws when a story in Vice revealed they were developing phishing sites that offered workers \$500 one-off plus \$25 a month to share their login credentials.⁹⁴ Meanwhile in their job listings earlier this year (which since then have been taken down), their positions for Software Engineers seemed to suggest they are scraping/stealing data, rather than getting it from employers with permission.⁹⁵

93. “Interview With The Founders Of Argyle – Powering The Infrastructure For Universal Workforce Data Access.” Tech Company News. 8/19/2019.

94. “‘Phishing’ Sites Buying Workplace Login Details Linked to Well-Funded Startup.” Joseph Cox. Vice. May 4, 2021.

95. A job listing found here — <https://argyle.rippling-ats.com/job/219736/software-engineer-crawling-reverse-engineering> — called for the following skills: “Reverse engineering knowledge of Android/iOS or JS/WebApps, knowledge of bot and captcha bypass mitigation tactics, Python coding experience preferred, big bonus points if you are familiar with Android/iOS device verification frameworks (SafetyNet Attestation/DeviceCheck).”

Little Tech is a key driver in the commodification of low-wage workers' data and enterprise surveillance.

From our analysis of Little Tech products in the employment and labor marketplace, we found a proliferation of enterprise-level products that are built to lock in a long-term vendor relationship with employers and expand data collection practices for employers to have over workers. For example, 74% of the products in our database are platforms that are a base for multiple applications and are usually sold on a subscription basis. This locks employers into long-term arrangements with vendors or with the requirement of additions and upgrades.

Below are **five** additional ways that low-wage workers' data is rapidly being commodified to expand enterprise surveillance over workers:

1. Little Tech continues to expand the data points that can be collected about workers. In the wake of the pandemic, companies have deployed and normalized technologies that collect everything from information about symptoms, body temperature, respiratory rate, and heart rate to facial scans, medical test results, and locations of exposure risk. Most of these products, such as Anviz FaceDeep 3 IRT, Atlas ID, Ceredian Dayforce, and BioIntelliSense BioButton, emerged during the first wave of the pandemic and have not been updated, even as the CDC's guidance has evolved to reflect scientific knowledge of how Covid-19 spreads. Relatedly, if we look at the patents emerging

from many of the companies in our database, during the pandemic there has been a revamp in investments going to companies that are seeking to capture even more sensitive and personal medical and behavioral data in the workplace, such as information on emotions, stress levels, anxiety, mood, and more. Finally, we also noted data analytic products such as Appriss Retail Secure Store, which integrates criminal justice data into an intelligence platform that can be used by companies and law enforcement to manage safety and prevent fraud.

2. Data brokers and data gatekeepers continue to exploit new and emerging data niche markets, while continuing to lock workers out of their data. During Covid we noted the rapid expansion of employment and labor analytic products that exploit data niches.⁹⁶ Many of these new companies are buying access to worker/employment data or carrying out unscrupulous practices to trick workers into sharing their data in order to build a new generation of workplace and labor analytic products for employers, government, and other stakeholders. For every new employment and labor data niche that's identified in the market, there are hundreds of new companies being founded that seek to exploit and build products around it (see earlier example: Argyle and Gridwise, Stoovo, Para, and Appjobs.work).

96. A data niche is a specialized segment of the market by which a data service and product can be offered.

3. Low-wage workers cannot count on employers to protect their data. We found that employers generally, especially in low-wage sectors, are not attentive stewards of workers' data. This is problematic given that low-wage employers are also some of the ones driving up the speed of tech innovation in low wage work. For example, McDonald's, Walmart, and Amazon currently have an outsized influence in the development of workplace tech that includes both labor optimization technologies and workplace surveillance and safety technologies, and includes the costs of acquisitions of firms that develop

4. Many of the companies in our database seek to use workers' data as assets in case of a sale. In our analysis of companies' data-sharing policies, we found that many noted that they will use worker and employment data as assets in the case of a merger, acquisition, reorganization, bankruptcy, or sale. This is a widespread industry practice that raises similar concerns to when private equity group Blackstone purchased Ancestry.com: which is that you can never be sure that potential buyers can or will ensure data integrity and protection, and may deviate from the reasons that people consented to sharing their data

	at least \$3 billion invested in tech in 2020
	will invest \$14 billion in 2021
	has invested \$100 billion since 2012

such workplace technologies.⁹⁷

Additionally, the burden for greater due diligence regarding the types of tech products being procured for use in the workplace and labor markets falls on the companies themselves. For example, we found that most of the products in our database do not provide clear privacy or data storage/data retention policies and/or use standard generic privacy statements. Only 35% of the products share any information on privacy policy and data sharing arrangements.

in the first place. Employers currently using workplace tech products from companies that are using workers' data as assets are Target, Best Buy, Outback Steakhouse, Applebee's, Denny's, Red Lobster, CraftWorks, Texas Roadhouse, BJ's Restaurants and Brewhouse, Amazon, Walgreens, Holiday Inn, and Marriott.

⁹⁷ These are different time periods, based on public statements, but unfortunately breakdowns for 2020 alone are not available.

5. The pandemic has accelerated the digitization of small business and working class industries. We have found that vertical SaaS (“software as a service”) platforms target very narrow market or industry niches and are preparing for those to become more digitized in the years to come. We see this trend in small business and working-class industries such as auto repair (ShopMonkey), plumbing and electricians (ServiceTitan), beauty salons (GlossGenius), and barbershops (Squire). Additionally, as the care economy takes off, we are also seeing an increase in AI and other tech platforms entering this industry⁹⁸ and interest among investors to invest⁹⁹ in the emerging “care economy.”¹⁰⁰

98. “Funding Surges For Startups Serving Older Adults.” Joanna Glasner. Crunchbase News. 6/4/21.

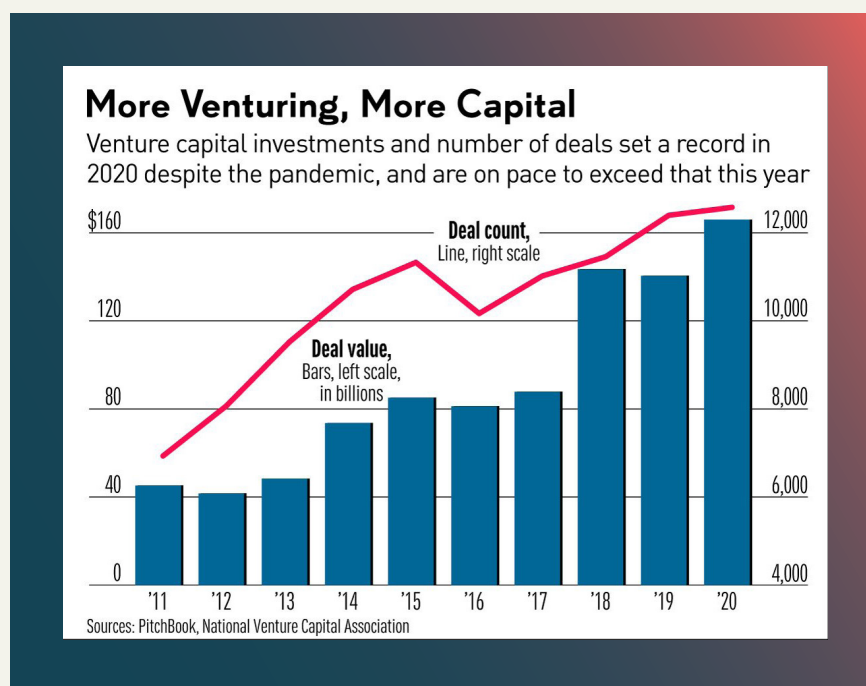
99. “[Investors Guide to the Care Economy](#).” Announcement from Pivotal Ventures and The Holding Co. July 2021.

100. Care economy refers to public and private services for childcare, early childhood education, disability and long-term care, as well as elder care.

Venture capital, private equity, and hedge funds are channeling record-breaking investments into the expansion of this unregulated marketplace whose products erode labor standards for workers and exploit weak labor protections.

With soaring IPOs, strong funding rounds, and unprecedented demand for digital products and services, investors are ushering in a tech boom many say can only be matched by the original dotcom boom of the late '90s that gave rise to Big Tech.¹⁰¹ The market condition that contributes to this trend has been investors' turn to riskier asset classes (such as venture capital and private equity) in hopes of high returns in an unpredictable economy. According to a first-quarter report jointly produced by PitchBook and the National Venture Capital Association, venture capital firms are raising funds at a pace that is likely to set a record this year of more than \$100 billion;

venture investment is up over 150% just in the first half of 2021.¹⁰² Most of these investments lack due diligence. For example, a recent study by Amnesty International found that only one of the 50 largest VCs in the world has any human rights due diligence process in place.¹⁰³ Some venture capital funds that are investing in some of the problematic tech products in our database with limited due diligence are 500 Startups, Andreessen Horowitz, Comcast Ventures, Khosla Ventures, Salesforce Ventures, Vista Equity Partners, Sequoia Capital, Benchmark Capital, Greylock Partners, Union Square Ventures, and Accel.¹⁰⁴



101. "Global VC view: Funding startups in the next normal." Podcast. McKinsey and Company. 5/14/21.

102. "State Of Venture Q2 '21 Report." CBInsights. 7/8/21.

103. "Risky Business - How Leading VC Firms Ignore Human Rights When Investing in Tech." Amnesty International.

104. "The Most Active Investors Were Extra Busy in Q1." Joanna Glasner, Crunchbase News. 4/9/21.

As we outline next, the infusion of public and private capital into the VCs, private equity, and hedge funds¹⁰⁵ has intensified the race to find high-growth tech companies (aka tech unicorns)¹⁰⁶ in an increasing number of industry verticals (workplace, job markets, care economy,¹⁰⁷ housing, education, health, financial services, et al.) that touch upon almost every facet of our lives. This trend is spreading nationally, as venture dollars are also increasingly going beyond the traditional VC and Silicon Valley foothold states such as California, Massachusetts, and New York; nontraditional states such as Washington, North Carolina, and Minnesota, and cities like Miami, Minneapolis, and Nashville are inviting VC dollars in the hopes of becoming mini—Silicon Valley tech hubs.¹⁰⁸

In this period of record high investments it is important to examine not only where venture capitalists get their money, but also other key capital market actors contributing to these trends, particularly because there is a remarkable lack of due diligence being conducted at almost every investor level, despite the thousands of tech products entering the workplace and broader economy.

For the purposes of our report we sought to focus on three sets of actors: (1) institutional investors, (2) private equity and hedge funds, and (3) governors and the Biden-Harris administration. Here, we briefly discuss each of these.

1. Institutional investors

One class of investors important to the tech industry are institutional investors such as pension funds, insurance companies, sovereign wealth funds, philanthropy, and university endowments. As noted earlier, in the search for yields and high returns in riskier asset classes, such as venture capital, private equity, and debt, institutional investors and family offices have been trying to meet short-term goals by investing in risky tech products while not accounting for the ways that their actions have negative impacts on capital structures in ways that introduce systemic and systematic risks into the real economy.¹⁰⁹ So far for university endowments, this move to putting an increasing amount of capital into venture capital has reaped huge profits; as some schools, including Washington University in St. Louis and Duke University, gained more than 50% this year alone.¹¹⁰ The increasing role of institutional capital in financing venture capital also poses a major challenge for the modern antitrust movement because of the immense power that institutional investors wield both in markets and in regulatory policies.¹¹¹ Therefore, because the actions of institutional investors touch on several aspects of the economy and markets, them pouring capital into VCs investing in new tech companies has the potential to harm and exploit workers multiple ways, by unknowingly investing in tech companies that rely on business models that reduce labor standards and/or use workers' data for private gain, while reinforcing the accumulation of capital that takes money out of the real economy (where it can go to increased wages, benefits, etc).¹¹²

105. "Hedge Funds Are the New Venture Firms." Alexandra Stevenson. The New York Times DealBook. 4/6/16.

106. "12 Charts That Show How Tech Took Off During a Year of Shutdowns." Laura Mandaro. The Information. 3/9/21.

107. "Funding Surges For Startups Serving Older Adults." Joanna Glasner. Crunchbase News. 6/4/21.

108. "More Opportunity than Capital: Venture Dollars Spread Throughout the US." Chris Metinko and Gené Teare. Crunchbase News. 5/20/21.

109. "ESG 2.0: Measuring and Managing Investor Risks Beyond the Enterprise-level." Delilah Rothenberg, Raphaele Chappe, and Amanda Feldman. 4/6/21. Available at SSRN: <http://dx.doi.org/10.2139/ssrn.3820316>.

110. "University Endowments Mint Billions in the Golden Era of Venture Capital." By Juliet Chung and Eliot Brown. Sept. 29, 2021. The Wall Street Journal.

111. "Woke Capital?" James F. Tierney. LPE Project. 5/5/21.

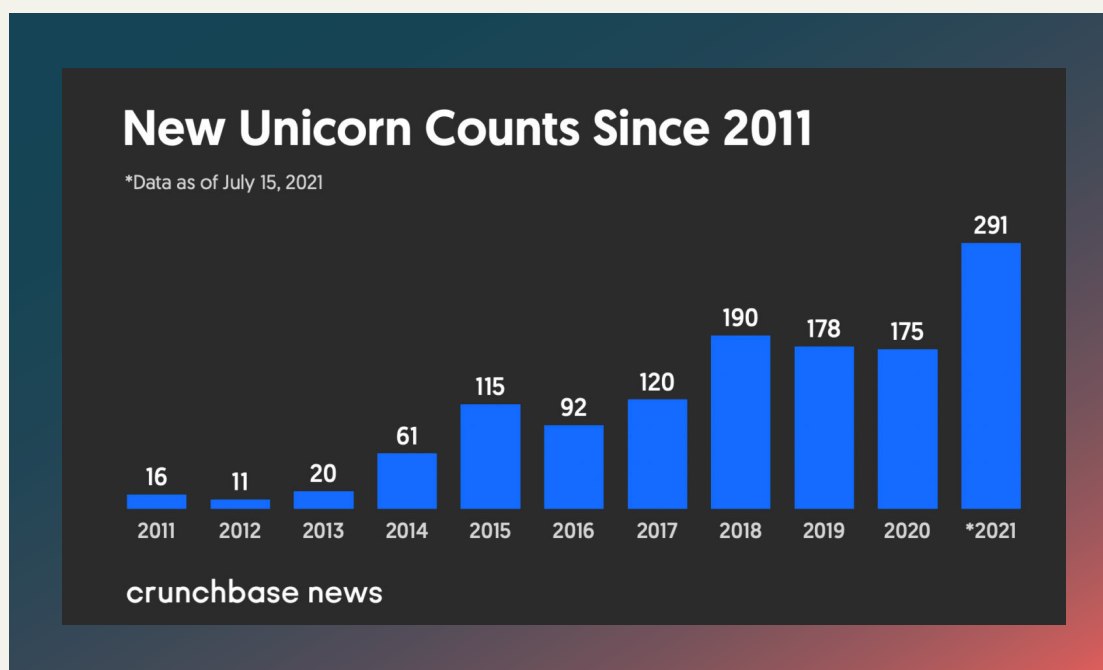
112. In the book *In Portfolio Society: On the Capitalist Modes of Prediction*, Ivan Ascher discusses how in a portfolio society risk outranks labor power as the central source of value in contemporary capitalism.

2. Hedge funds and private equity

While venture capital has historically been the investment vehicle for investing in early stage technology companies, hedge funds and private equity are increasingly playing a role and pushing traditional VCs to the sidelines by offering emerging tech companies larger investments. In the past year, hedge funds have participated in a record-breaking 770 private deals with an aggregate value of \$153 billion; almost double what was spent in 2020 (\$96 billion).¹¹³ This number is expected to continue growing as hedge funds look to boost returns.

Meanwhile, the dominance of private equity investments in the tech industry has been problematic in several ways. First, it has intensified and accelerated the “growth first” mentality of Silicon Valley and the pressure for tech companies to scale quickly. For example, this year has seen the dominance of “growth

firms” or “growth equity,” which are private equity firms that (unlike venture capital, who make big bets in early stage tech companies) quickly invest large amounts of capital to relatively mature companies poised for dramatic growth. Tiger Global Management is an example of a part hedge fund, part private equity growth firm that currently holds \$65 billion in total assets under management. Second, they are also the most active investor currently in the tech industry and have been doubling down investments in early and late stage tech companies.¹¹⁴ As a result, they currently hold the most equity in the 2021 tech unicorns that received record-high valuations.¹¹⁵ Other growth private equity firms currently investing heavily in the tech industry are Insight Partners and Coatue. Meanwhile, other top traditional private equity firms currently investing in early stage tech companies are DCM Ventures, OrbiMed, Summit Partners, Warburg Pincus, and Oak Investment.¹¹⁶ Finally, private



113. “Goldman Sachs says hedge funds are increasingly trying to compete with VCs in private deals.” Sam Shead. CNBC. 9/10/2021.

114. “Growth Firms, Not VCs, Are The Most Active Investors In New Unicorns This Year, And They’re Doubling Down.” Gené Teare. Crunchbase News. 5/17/21.

115. “‘Truly extraordinary’: Unicorn startups Boast 300x Valuations.” Kate Clark. The Information. 4/20/21.

116. For a full list of private equity firms investing in early stage tech, you can visit this list on Crunchbase (paid membership required). <https://www.crunchbase.com/discover/saved/pe-investing-in-early-stage-tech/83950f79-e786-49bd-94a4-8a97b45cb866>

equity has been increasing their bets and investments on artificial intelligence companies¹¹⁷, a sector by which researchers and advocates have already identified requires due diligence and safeguards. All factors by which private equity is not likely to invest time in supporting or implementing in the race to dominate the marketplace.

In order to meet the pressure to scale quickly, hedge funds and private equity have also been driving the practice of recruiting and poaching Big Tech executives into newer tech companies, for their expertise in leading fast-growth and navigating regulatory arbitrage,¹¹⁸ thereby duplicating the same Big Tech business models and revenue strategies into the next generation of tech companies. For example, for most of 2021 Instacart focused on poaching and hiring Facebook staff.¹¹⁹

The Emergence of “Growth Firms” in the Tech Industry Investments : The Rise of Tiger Global Management

Tiger Global Management is a New York—based part hedge fund, part private equity growth firm that moves fast and invests vast amounts of capital into tech companies poised for rapid expansion. In this sense, their capital seeks to act as an accelerant to achieving explosive scale for tech companies, which in return drives up valuations. Their investment style has been described as one that “pounces on deals very early, moves extremely fast to close on them, and stuns with sky-high valuations.”¹²⁰

Once they invest, they take a hands-off approach with their portfolio companies and instead pay for portfolio companies to have access to consultants at Bain & Co. Tiger Global Management is the most dominant investor in the tech industry right now, and their sole focus on rapid scale and driving valuations means that there is very little due diligence being conducted on the tech companies that are currently shaping society and the economy.

117. “Private Equity Bets on Intelligence.” By Mary Kathleen Flynn. October 11, 2021. Mergers & Acquisitions.

118. “Startups Are Poaching Facebook, Google Execs.” Sylvia Varnham O’Regan. Information. “We are getting multiple calls [a day] from private equity-backed and venture capital-backed companies, asking to go after talent that is already in successful digital firms,” said Umesh Ramakrishnan of executive search firm Kingsley Gate Partners.

119. “Instacart CEO Hire Is Part of Monthslong Raid of Facebook Staff.” Amir Efrati and Sylvia Varnham O’Regan. The Information. 7/8/2021.

120. “Under The Hood: How Tiger Global Earned Its Stripes As The World’s Biggest Unicorn Hunter.” Gené Teare, Marlize van Romburgh. Crunchbase News. 6/2/2021.

A second reason the entrance into and dominance of private equity growth firms in the privatized tech innovation space is problematic is due to private equity's historical and problematic relationship with labor and in particular low-wage workers. Private equity—owned companies directly employ more than 11.7 million workers in the United States, plus millions more around the world, and the number continues to grow as private equity firms acquire additional companies at a record pace.¹²¹ The largest number of workers employed by private equity—owned companies are in low-wage industries such as food service, retail, security, and healthcare, with large concentrations of workers of color.¹²² What can we expect if more and more private equity firms end up owning tech companies?

An increasing number of low-wage workers are currently employed by private-equity owned companies.

Research from Private Equity Stakeholders (PESP) found that in 2021 a few private equity buyouts have dramatically increased the number of people working for private equity-owned companies. The top five U.S. private equity firms by employees:

- 1. Roark Capital:** 950,000+
- 2. Warburg Pincus:** 825,000+
- 3. Apollo Global Management:** 546,000+
- 4. KKR:** 427,000+
- 5. Cerberus Capital:** 390,000+

3. Governors and the Biden-Harris Administration

Finally, another recent source of capital for tech investments comes from state and federal tax revenue. This year we've been tracking how a growing number of governors are using tax revenue to start their own venture capital funds.¹²³ So far, New Jersey and Wisconsin have announced new venture funds to support local innovation economies and Colorado's Venture Capital Authority is expanding its fund offerings for 2021-2022. At the city level, the San Jose Police & Fire Department Retirement Plan pension fund also committed \$10 million to venture capital firm Invesco in 2021.¹²⁴ At the federal level, venture capital is also eyeing the Biden-Harris infrastructure plan as another source of capital, with the plan's focus on innovation that can address climate resiliency, elder care, property and housing, and more.¹²⁵ Meanwhile, two small tech companies reaped record profits through fees for processing Paycheck Protection Program Loans for small businesses during the pandemic.¹²⁶ Therefore, the message is clear - whether looking to the private or public sector, tech companies have no shortage of capital.

¹²¹ Labor and Employees. Private Equity Stakeholder Project.

¹²² Labor and Employees. Private Equity Stakeholder Project.

¹²³ See "New Jersey announces \$10M seed fund aimed at Black and Latinx founders" and "Wisconsin: the new Venture Capital of the Midwest."

¹²⁴ "San Jose Policy & Fire signs onto venture capital fund". By: Rob Kozlowski. September 30, 2021. Pension & Investments.

¹²⁵ "Where the Startup World Sees Money In Biden's \$2.3T Infrastructure Plan." Crunchbase News. 4/19/21.

¹²⁶ "How Two Start-Ups Reaped Billions in Fees on Small Business Relief Loans." Stacy Cowley and Ella Koeze. The New York Times. 6/27/2021.

In conclusion, there are several reasons we need to pay close attention to the political implications of these economic trends and the financialization of the tech industry.

1. These trends send the economy into hyperdrive by reinforcing market fundamentalism and the pursuit of short-term profits that allow the racial wealth gap to persist while widening the gap between those who are able to use tech to accelerate their education, careers, and wealth, and those who can't.
2. A business and moral risk argument can be made regarding the wealth-hoarding at massive levels that allows for the infusion of large amounts of unaccountable private capital that takes money out of the real economy — which requires real investment in the labor workforce — and shifts it to the financialized economy. Relatedly, the ongoing deployment of private capital into mostly white tech and venture capital also undermines the push to support Black and brown entrepreneurs through more access to capital, equitable procurement practices, and public options in response to market failures.
3. These trends call into question some of the policy tools we rely on for checking corporate market power and whether they are sufficient to curb these trends at the systems level. We argue that a greater market design framework that translates economic theory and analysis into practical solutions to real-world problems¹²⁷ is needed in order to identify the suite of governance, regulatory, and policy interventions needed to make sustainable changes at the market level. These can include everything from strengthening labor market protections, pushing for disclosure of corporate money in politics, requiring board constituency mandates, review of tax incentives and subsidies given to companies, and (E)ESG [Employee, Environmental, Social, and Governance) and (E)ESG [Environmental, Social, and Governance] disclosures,¹²⁸ supporting mechanisms for building worker voice and power, pursuing antitrust reform,¹²⁹ and more. By redesigning both the rules that guide market transactions and the infrastructure that enables those transactions to take place, market designers can address a broad range of market failures that are concentrating the market and political power of not just the tech industry but also the capital owners and allocaters.
4. While the VC-backed model of tech innovation continues to reign supreme, there are parallel movements seeking alternative models of developing tech in the public interest or through more mission- and impact-minded business and ownership models (see Driver's Seat Cooperative, Austin's Coop Taxi, and NYC's Driver Cooperative). The question of the role of capital in Little Tech products needs to be seen within broader movements trying to increase democratic accountability in our market economy.

127. "An invitation to market design." Scott Duke Kominers, Alexander Teytelboym, Vincent P Crawford. Oxford Review of Economic Policy, Volume 33, Issue 4, Winter 2017. Pages 541–571, <https://doi.org/10.1093/oxrep/grx063>.

128. "The Politics of Price Making: Why LPE Needs to Engage with Market Design." William Boyd. LPE Project. 1/20/21.

129. "The Politics of Price Making: Why LPE Needs to Engage with Market Design." William Boyd. LPE Project. 1/20/21.

Unrestricted and privatized technology innovation erodes the public interest and deepens and accelerates neoliberal beliefs that place business interests above all else.

The foundation of America's neoliberal agenda has been the marriage of market-based logics with the legacy of slavery that has over many years, allowed business and capital owners to shape the economy and society according to their interests while touting the efficiency of the markets. The outcome of these legacies has been deepening income inequality and the widening of the racial wealth gap. The tech industry now finds itself an enabler and accelerator of these trends.

One can not deny that the tech industry and digital economy that have emerged in the past 20 years benefited from a historically weak state and lack of labor market and consumer privacy protections. Companies such as Uber, Lyft, DoorDash, and Instacart exploit weak and fragmented labor laws and circumvent state policies in order to shield their business models,¹³⁰ while at the same time, by controlling essential data about workers, they leverage insider relationships in government.

On the other hand, the combination of market-based logics with the efficiency of tech innovation has been driving the focus on “techno-solutionism”—the idea that technology can address or remedy complex societal and economic problems. Silicon Valley has promulgated the idea that tech knows best;

influential venture capitalist Marc Andreessen has released several manifestos (“Why Software Eats the World,”¹³¹ “It’s Time to Build”¹³²) calling on tech founders to fix the issues that plague society that the public sector has not been able to solve. Meanwhile, new lobbying efforts led by tech companies are taking shape, pushing the privatized tech innovation agenda. For example, the Alliance for Digital Innovation (whose members include Palantir, Salesforce, ID.me, and others) are lobbying the federal government to enforce laws that prioritize procuring private commercial software over the government building its own.¹³³

Even as many downplay the problems of public interest or public sector technology efforts, our recent unemployment crisis was a strong reminder that commercial and private tech doesn’t always get it right. For example, in 2011 Florida elected officials contracted with commercial vendor Deloitte to redesign their UI website at a cost of \$77.9 million.¹³⁴ However, as millions of Floridians found themselves unable to access essential UI benefits during the pandemic, both Deloitte and elected officials washed their hands of responsibility. The same has been found in California and other states with commercial vendors such as IBM.¹³⁵ Especially in times of crisis, market solutions and tech innovation can still break down.

130. “Uber and Lyft Ramp Up Legislative Efforts to Shield Business Model.” Noam Scheiber. The New York Times. 6/9/21.

131. “Why Software Is Eating the World.” Marc Andreessen.

132. “It’s Time to Build.” Marc Andreessen.

133. “Joint Commercial Preference Letter.” Alliance for Digital Innovation. 5/25/21.

134. “Gov. Ron DeSantis orders an investigation into the broken unemployment system.” Lawrence Mower. Tampa Bay Times. 5/4/20.

135. “Companies Made Millions Building Unemployment Websites That Didn’t Work. In at least one case, that same company is now getting pandemic-related contracts.” Colin Lecher. The Markup. 7/16/2020.

Regardless, elected officials continue to be lured by the promise of innovation, jobs, and entrepreneurship. In city after city, and state after state, elected officials try to woo tech companies and investors to invest in their local economies, such as Miami Mayor Francis Suarez, who went on a public Twitter campaign inviting founders and tech companies to relocate to Miami.¹³⁶ Additionally, Biden's recent White House's Executive Order on Competition¹³⁷ framed the issue of anti-monopoly as one that kills entrepreneurship, and makes a case for unrestricted innovation.¹³⁸ These are trends to watch closely as the history of state and local governments offering incentives and subsidies in hopes of spurring local economic development is highly problematic. The reason for this is that organized interests in the private sector have pushed for a lack of transparency regarding how these deals are negotiated.¹³⁹ In return, this makes it difficult to determine the total cost to taxpayers, and even more difficult to estimate the costs to a single community.

Finally, it's important to note the revolving door of VC insiders into the public and sector that help tech companies avoid regulation and further a privatization agenda in local, state, and federal policies. An example of this new generation of power players is Bradley Tusk, co-founder of the VC firm Tusk Ventures, where he is a managing partner. Reporters have noted that Tusk's particular brand of politics—lobbying against regulation on behalf of companies he then invests in—in some ways represents the last gasp of corporate control over government that has run rampant since the Reagan era. Whether complicit or not, these players and the lobbying that the tech industry does continues to restructure markets for public services and diminish government's ability to provide labor and social safety net protections.

136. "Miami's Mayor Woos Techies. What Does He Need to Succeed?" Arielle Pardes. The Wire. 1/28/21.

137. Executive Order on Promoting Competition in the American Economy. 7/9/21.

138. "This New White House Executive Order Is a Game Changer for Entrepreneurs." Victor W. Hwang, Inc. 7/16/21.

139. "What Are They Hiding? What Firms Don't Want Us to Know About Their Economic Development Incentives." Nathan Jensen and Calvin Thrall. ProMarket. 9/15/2021.

We need to future-proof regulatory and policy interventions.

In order to address the complexity and urgency of the tech political economy and the tech companies and products, we will need a variety of regulatory/rule-making and policy interventions. Below are seven areas we find the most critical.

1. We must not forget the challenges of using policy and regulatory interventions to protect low-wage, immigrant, and BIPOC workers. When designing policy and regulatory interventions, we must center America’s legacy of racial capitalism. This is a powerful reminder that while we seek to use the state to address the 21st-century challenges being brought forth by technology, we can’t skip the additional work needed to disrupt the structural biases, prejudices, veneer of racial neutrality, and 50 years of disinvestment in regulatory work that have been enshrined in our agencies, laws, and practices.¹⁴⁰ BIPOC, immigrant, and low-wage workers, in particular, historically lack many protections in terms of employment security, health and safety standards, freedom from exploitation and discrimination, paid leave, livable wage, etc. As a result, the tech and labor policy design processes need to not only address tangible concerns brought forth by technology companies and the tech industry but at the same time reimagine and strengthen a strong,

accountable, and inclusive administrative state.¹⁴¹ Specifically, this means developing parallel strategies for meaningful advocacy during budget appropriations, to ensure that key regulatory agencies such as the Equal Employment Opportunity Commission (EEOC), National Labor Relations Board (NLRB), Federal Trade Commission (FTC) or Occupational Safety and Health Administration (OSHA) will have the resources they need to perform their regulatory functions and enforcements.

2. We need to future-proof our interventions to consider emerging trends in Little Tech. While we should absolutely continue to curb the power of Big Tech companies like Amazon, Uber, Facebook, Google, our analysis shows that we must also keep an eye on the thousands of companies — some emerging, some long-established — that fly under the radar and are duplicating and exacerbating the practices first started by Big Tech. Because so much attention is focused on challenging the monopoly power of Big Tech, some of the bills that are being currently introduced may have less impact on Little Tech’s potential to shift power away from the state and low-wage workers. For example, the Wyden-Booker Senate bill, the Algorithmic Accountability Act of 2019 (which Protocol noted was “seen by the White

140. A Moral Political Economy: Present, Past, and Future. F. Carugati and M. Levi. Cambridge University Press. 5/21/21. doi:10.1017/9781108872942.

141. “Reconstructing the Administrative State in an Era of Economic and Democratic Crisis.” K. Sabeel Rahman. Harvard Law Review, Vol. 131, p. 1671. 2018. Available at SSRN: <https://ssrn.com/abstract=3160966>.

House as a model for future AI legislation”¹⁴²), targets companies with more than \$50 million in revenue (or possession of more than 100 million people’s data). Therefore, the bill would not apply to smaller companies, like many from our database, which also use algorithmic decision-making tools in scientifically questionable ways and with the potential for multiple direct harms to BIPOC, immigrant, and low-wage workers.

At the same time, we miss the opportunity to change a company’s problematic products and practices early on, if we take a “wait till they get too big” approach. Because while Big Tech and other large tech companies may be able to sidestep compliance on broad privacy bills (as Facebook and Google have done with the GDPR, General Data Protection Regulation), smaller tech companies have been found to respond quickly to new regulations.

3. We must develop a multi-stakeholder framework for addressing the market and political power of the tech industry and connect our work across issue areas, policy spaces, and movements (e.g., reform, abolitionist, civil rights, racial justice, immigration). As noted earlier, many of our policy and regulatory conversations related to tech are focused on Big Tech companies and mostly focused on consumer harms. We argue in this paper that workers increasingly need to be included in these conversations, especially, because workers have the potential to be a powerful constituency (perhaps, more so than consumers), due to the potential for multiple harms being brought on by not only Big Tech, but the hundreds of other tech products, companies, and the political economy of tech as a whole. As a result, there is an opportunity to better integrate organized labor and workers’ input into broader public tech policy, as well

as a need to better integrate a tech analysis into labor policy.

While there are some promising tech and labor policy conversations happening on hiring technologies and workplace surveillance that are bringing together labor unions, tech policy, and other labor experts, following are some tech policy general issue areas which could be strengthened by integrating the voices, experiences, and stories of low-wage workers.

142. “Democrats have won the Senate. Here’s what it means for tech.” Issie Lapowsky, Emily Birnbaum. Protocol. 1/6/21.

Privacy-focused legislation (state and federal level)

- Passing a federal data privacy bill that touches on the three core issues at the heart of the GDPR: consent, purpose limitation, and accessibility, or on some of those issues, such as Representative Susan DelBene's (D-WA) Information Transparency and Personal Data Control Act.
- The Digital Accountability and Transparency to Advance Privacy Act introduced by Sen. Catherine Cortez Masto (D-Nev.)
- Numerous consumer-facing privacy and biometric protection laws.¹⁴³
- The Facial Recognition and Biometric Technology Moratorium Act (introduced by Representatives Pramila Jayapal, Ayanna Pressley, and Rashida Tlaib, and Senators Ed Markey, Jeff Merkley, Bernie Sanders, Elizabeth Warren, and Ron Wyden) and efforts to ban facial recognition at the state and local level.
- Regulating digital advertising.
- Regulating vendors and data brokers (see Senator Wyden's Protecting Americans' Data from Foreign Surveillance Act¹⁴⁴).
- Establishing a U.S. data protection agency¹⁴⁵ through Senator Gilibrand's (D-NY) Data Protection Act.
- As part of the Build Back Better Act, House Dems are proposing \$1 billion in funding for the FTC "to create and operate a new bureau dedicated to stopping unfair and deceptive acts and practices related to privacy violations, data security incidents, identity theft, and other data abuses¹⁴⁶."
- The Protect Data at the Border Act (introduced by Sens. Ron Wyden and Rand Paul) seeks to limit data collection at border crossings.

143. "State Biometric Laws are Trending and Class Actions Could be on the Rise." J. D. Supra. 3/24/21.

144. Other later and relevant Wyden acts are the Fourth Amendment Is Not for Sale Act and the Mind Your Own Business Act.

145. "A new Senate bill would create a U.S. data protection agency." Zack Whittaker, TechCrunch. 2/13/20.

146. "U.S. lawmakers seek \$1 bln to fund FTC privacy probes." By David Shepardson and Diane Bartz. September 10, 2021. Reuters.

Anti-trust legislation and regulatory interventions

- Potential FTC rulemaking to address “unfair data collection and surveillance practices that may damage competition, consumer autonomy, and consumer privacy” and investigate third party data-sharing practices between vendors and employers (that lock workers out of access to that data).¹⁴⁷
- Ending Platform Monopolies Act, sponsored by Jayapal.
- American Choice and Innovation Online Act: This bill was proposed by Rep. David Cicilline (D-RI) and co-sponsored by Lance Gooden (R-TX).
- Platform Competition and Opportunity Act: This proposal from Rep. Hakeem Jeffries (D-NY) is co-sponsored by subcommittee ranking member Ken Buck (R-CO).
- Augmenting Compatibility and Competition by Enabling Service Switching (ACCESS) Act: This proposed bill from Rep. Mary Gay Scanlon (D-PA) is co-sponsored by Rep. Burgess Owens (R-UT).
- Merger Filing Fee Modernization Act: This bill was introduced by Rep. Joe Neguse (D-CO) and co-sponsored by Rep. Victoria Spartz (R-IN).

Internet Policy

- Section 230, which allow online intermediaries to host or republish speech, is protected against a range of laws that might otherwise be used to hold them legally responsible for what others say and do¹⁴⁸ and Net Neutrality/ Title 1, which mitigates corporate prioritization of some web content over others.
- Broadband access and digital literacy (see “Accessible, Affordable Internet for All Act,” Digital Equity Act, and American Rescue Plan’s Act of 2021, which includes provisions to reduce digital divides).

Anti-discrimination

- Updates to federal antidiscrimination laws to deal with disparate impacts of technology.
- Legislation prohibiting algorithmic discrimination (see the Algorithmic Justice and Online Platform Transparency Act introduced by Senator Ed Markey (D-MA) and Rep. Doris Matsui (D-WA).¹⁴⁹
- Efforts to ensure algorithmic transparency and accountability and to regulate AI (see Algorithmic Accountability Act in 2019 introduced by Senators Wyden, Booker, and Clarke).

147. Executive Order on Promoting Competition in the American Economy. 7/9/21.

148. Section 230 of the Communications Decency Act. Electronic Frontier Foundation.

149. “Senator Markey, Rep. Matsui Introduce Legislation to Combat Harmful Algorithms and Create New Online Transparency Regime.” The office of Senator Ed Markey (D-MA). 5/27/21.

Gig economy

- Stopping the state-level expansion of California's Proposition 22-like laws in other states and push for greater data rights for gig workers.¹⁵⁰

On the labor policy side, several developments are happening that could use a deeper tech policy analysis. First, there are policy, regulatory, and prosecutorial efforts underway that focus on a variety of critical labor issues such as workplace safety, forced class-action waivers, workforce development, quality jobs, strengthening labor protections and collective bargaining rights (PRO Act), raising the minimum wage and eliminating tipped wages, ending right-to-work laws and classifications, etc; these could use a deeper tech analysis of the ways that technology shapes or exacerbates these traditional and historical labor issues. Likewise, an increasing number of district attorneys (DAs), state attorneys general (AGs), and other prosecutors are bringing charges against employers for long-running labor issues such as wage theft, misclassification and payroll fraud, workplace safety hazards, sexual assault, and human trafficking, among other crimes against workers.¹⁵¹ It may be fruitful to think about how Little Tech products are contributing to these harms commonly seen in low-wage sector work.

4. Antitrust legislation needs to identify data harms brought on by the lack of privacy and data protection being afforded to workers. For example, while antitrust law is a key tool that helps to structure markets, advocates are exploring other ways it could be used to address the socio economic problems caused by anti-competitive corporate behavior. For example, from a labor perspective, more could be done to identify the effects on workers' wages of non-compete clauses, labor market concentration, mergers and acquisitions, and a slew of other behaviors that disproportionately harm BIPOC workers (especially given the recent Supreme Court decision, *NCAA v. Alston*, which ruled that the NCAA's restraint on educational benefits to student-athletes violates antitrust law). The ruling on this case provides evidence that antitrust legislation could be used to check the market power held by employers and their ability to suppress employees' wages and job placement.¹⁵²

This is a timely area because technology mergers and acquisitions have boomed during the pandemic,¹⁵³ with the first quarter of 2021 seeing the highest tech deal volume ever, with over 700 deals, totaling \$155 billion¹⁵⁴, as tech investors have made more than \$580 billion from listings and mergers & acquisitions so far this year¹⁵⁵. Notable tech mergers and acquisitions in the past year have included gig economy companies and the retail sector; for example, Uber acquired four companies: Drizly, Postmates, Autocab, and Routematch: B8ta

150. "Gig Workers' Data Rights Should Be Prioritized in Labor's Next Fight." Phela Townsend, Truthout. 2/8/21.

151. "How district attorneys and state attorneys general are fighting workplace abuses. An introduction to criminal prosecutions of wage theft and other employer crimes against workers," Terri Gerstein. Economic Policy Institute. 5/17/21.

152. "What does NCAA v. Alston Tell Us About Antitrust and Labor Markets?" Bruno Renzetti. ProMarket. 7/9/21.

153. "Startups Are Acquiring Other Startups At An Unprecedented Pace." Sophia Kunthara. Crunchbase News. 7/20/21.

154. "U.S. tech companies use their expensive stock to pay for acquisitions." Krystal Hu. Reuters. 3/25/21.

155. "Tech investors have made more than \$580 billion from listings and M.&A. deals so far this year." October 14, 2021. Financial Times

(owned by Macy's) acquired the startup Re:-Store; delivery service JustEat acquired Grub-Hub; and Tulip Retail acquired Blueday, a store performance and management system, and TimeKit, a worker scheduling system. Therefore, it is an opportune time to understand not only if the recent boom in tech mergers and acquisitions are anti-competitive, but also what the real world short-term and long-term harm has been to workers as a result of these actions.

5. More public education, outreach, and organizing is needed to support investigations into direct harms. Some advocates are beginning to move beyond privacy harms in order to examine Big Tech real data harms brought on by the lack of privacy and data protections. As noted earlier, in the labor context it is important to look beyond privacy and data harms and also look at the ways that Little Tech products exacerbate power asymmetries between employers and workers, and by doing so raise the potential and risk for more harms and crimes against low-wage, immigrant, and BIPOC workers. This can include wage theft, misclassification and payroll fraud, workplace safety hazards, sexual assault, and human trafficking, inability to access public benefits, among others.¹⁵⁶ The latter is especially relevant to gig economy workers, where there is no significant source of public data that allows regulatory agencies to understand how the platforms operate and no way to get it without the active participation of companies (e.g., Uber refusing to share driver data with New York State unemployment agencies for years and requiring that drivers themselves submit data records via fax to slow down the allocation of earned UI benefits).¹⁵⁷

Therefore, by broadening the taxonomy of harms, we can help improve harm awareness and recognition and support workers in better detecting, documenting, and reporting individual or collective harms in the workplace. Workers could also report how these technologies are actually being implemented in the workplace, thereby helping regulators identify their “off-label” uses. In return, this can facilitate investigations either by state prosecutors or federal agencies. This is especially relevant as the Department of Labor, Occupational Safety, and Health Administration (OSHA) and the National Labor Relations Board (NLRB) are not able to instigate investigations unless they have received formal complaints.

6. More market design research is needed to identify how regulation can promote the allocation of private capital that centers workers, enables greater transparency and governance, and causes fewer societal and environmental harms. As noted throughout our analysis so far, most of the focus on the policy and regulatory fronts targets Big Tech. Less attention is focused on addressing the economic drivers that continue to allow the tech industry to grow, enable the worst parts of capitalism, and ramp up our financialized economy. Conversations on the need for market design and governance in the tech industry are nascent but beginning to take place in corporate law and antitrust academic spaces. For example, earlier this year, scholars at Yale's Law and Political Economy project began to write about the need to focus on market design in order to enable greater democratic governance over large pools of aggregated capital through the use

156. “How district attorneys and state attorneys general are fighting workplace abuses. An introduction to criminal prosecutions of wage theft and other employer crimes against workers,” Terri Gerstein. Economic Policy Institute. 5/17/21.

157. Coworker.org petition: To Mr. Khosrowshahi, CEO, Uber Technologies; Uber: Stop Slowing Down Unemployment for New York Drivers and Stop Lying To Us About Our Rights! Created by New York Taxi Workers Alliance.

of policies such as robust mandatory ESG (Environmental, Social, and Governance) or (E) ESG (Employee, Environmental, Social, and Governance) disclosures that can provide institutional investors with more knowledge of the investments that bring risk to people, communities,, environments, et al.¹⁵⁸ Recently, the U.S. The Department of Labor is once again clearing the way for environmental, social and governance, or ESG, funds in government-regulated retirement accounts which account for more than \$10 trillion in assets and cover more than 140 million workers. The proposed rule, the “Prudence and Loyalty in Selecting Plan Investments and Exercising Shareholder Rights,” reverses Trump-era guidance and makes clear that climate and other ESG factors fall under “a fiduciary’s duty of prudence¹⁵⁹.” Interventions like this — along with efforts to curb corporate money in politics, review tax incentives and subsidies given to companies, eliminate corporate¹⁶⁰ and Big Tech policy capture,¹⁶¹ strengthen labor protections, antitrust reform, and more — are needed to curtail the concentration of economic and political power, which enable the trends we’ve been laying out in this paper.¹⁶²

158. “Woke Capital?” James F. Tierney. LPE Project. 5/5/21.

159. “US Department of Labor Proposes Rule to Remove Barriers to Considering Environmental, Social, Governance Factors in Plan Management.” US Department of Labor, 10/2021.

160. “Top 50 asset managers have yet to match rhetoric with action to address negative lobbying and corporate policy capture—report.” Preventable Surprises. 5/24/21.

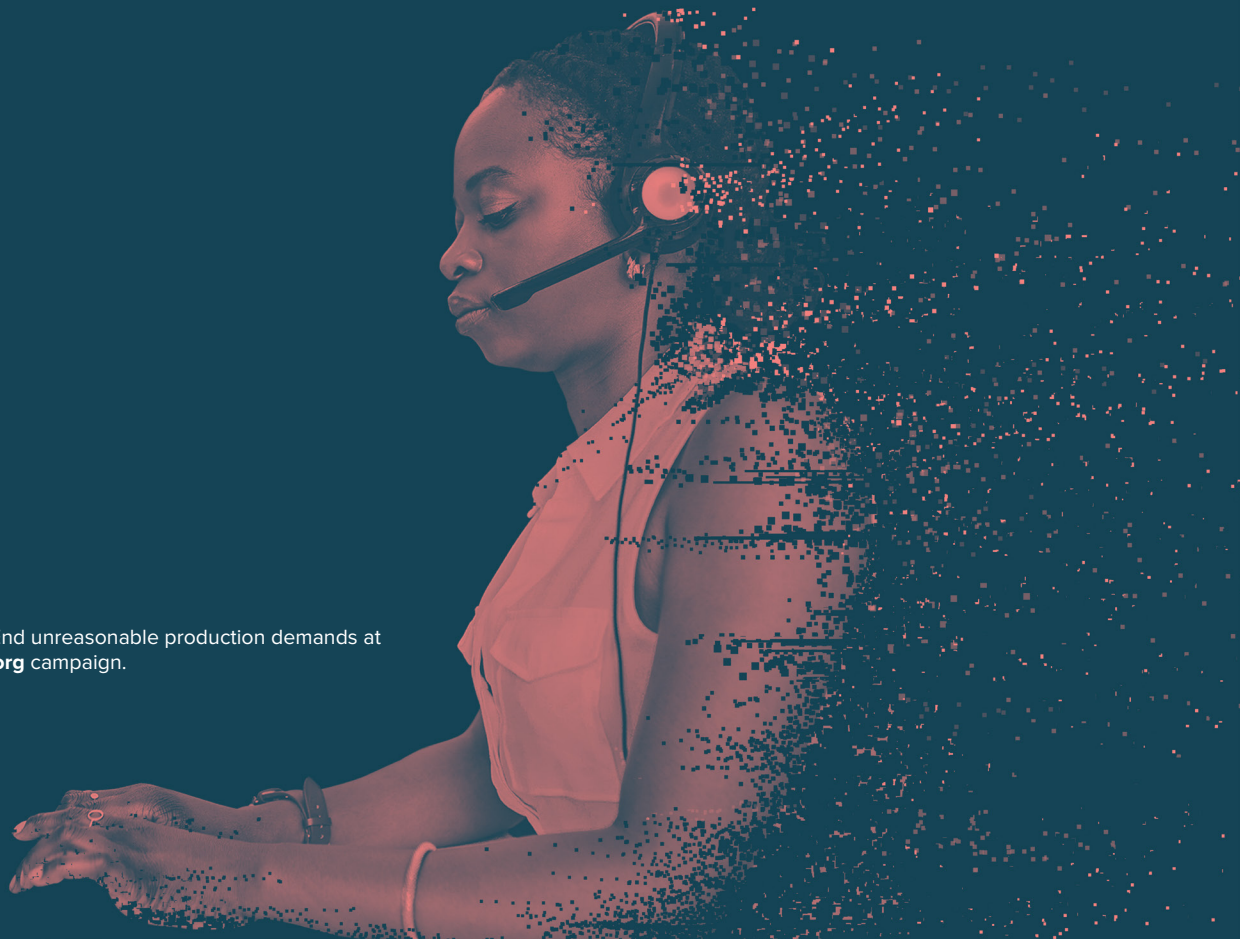
161. Policy capture is what happens when public decisions over policies are consistently or repeatedly directed away from the public interest towards a specific interest, can exacerbate inequalities and undermine democratic values, economic growth and trust in government.

162. “The Politics of Price Making: Why LPE Needs to Engage with Market Design.” William Boyd. LPE Project. 1/21/21.

"Stop the constant harassment about Average Handling Time. Reduce overall stress for all representatives and understand that we have all given and given, and we are tired, frustrated, mentally and physically exhausted."

— From a **Coworker.org** campaign created by Cigna Call Center Reps for a Better Work Environment Nationwide which noted the increase in productivity demands due to new workplace monitoring technologies implemented during the pandemic.¹⁶³

163. "C is for Change—End unreasonable production demands at Cigna." **Coworker.org** campaign.



We need to challenge the power, normative values, and practices of the tech industry by building worker voice and worker power.

When we think about social values such as equality, justice, and the pursuit of happiness, we envision a society where everyone has the opportunity to exercise agency in their social, political, and economic lives. Yet, the reality has been that neoliberalism and market fundamentalism have separated the market from the state, and the economy from power structures and from questions of justice and fair distribution.¹⁶⁴ Therefore, tilting our political and economic systems toward fairness has always been an uphill battle, especially for BIPOC people and communities. Whether through slavery, sharecropping, the prison-industrial complex, overpolicing, or the overrepresentation of Black and brown workers in low-wage work,¹⁶⁵ the exploitation and subjugation of Black and brown people has also consistently underpinned the norms, values, and practices that shape American society and the economy. The tech political economy and the tech products that come out of it are not only recipients of this legacy, but are exacerbating and extending it into the 21st century.¹⁶⁶ As noted recently by Evgeny Morozov, author of *To Save Everything, Click Here: The Folly of Technological Solutionism*, it becomes critical that we see that tech companies’

“I know we’re on a job, but, I mean, I’m afraid to scratch my nose. I’m afraid to move my hair out of my face, you know? Because we’re going to get dinged for it.”

— A female [Amazon] driver based in Oklahoma told Business Insider.¹⁶⁷

“monopolistic hold on our imagination — making us unable to see technology not as applied science but as a potent political institution for transforming other institutions — that constitutes the greatest problem for democracy.”¹⁶⁸ Within the labor context, the tech industry is extending this legacy by changing power structures in a way that deepens the preexisting power asymmetries in our markets. Many of the products listed in our database alter the incentives and power structures between workers and employers by expanding the tools by which employers can single handedly shape workplace culture, performance, and productivity under the guise of data-driven analytics, neutrality, and efficiency. Meanwhile, low-

164. “Beyond Neoliberalism: Allocating Resilience Through Corporate Law”. Ronit Donyets-Kedar, Ofer Sitbon. LPE. 9/14/2021.

165. “The Constant Boss: Work Under Digital Surveillance.” Aiha Nguyen. Data and Society Research Institute. 5/19/21.

166. Data Capitalism and Algorithmic Racism. Data for Black Lives, Demos. 5/17/21.

167. “Amazon drivers describe the paranoia of working under the watchful eyes of new truck cameras that monitor them constantly and fire off ‘rage-inducing’ alerts if they make a wrong move.” Avery Hartmans and Kate Taylor, Business Insider. 4/12/21.

168. “Privacy activists are winning fights with tech giants. Why does victory feel hollow?” Evgeny Morozov. The Guardian. 5/15/21.

wage, immigrant, and BIPOC workers have little or no worker voice and are the furthest removed from the decision-making spaces where technology products are designed, tech companies are invested and scaled, and tech products are rolled out.¹⁶⁹

The speed by which employers are rolling out tech products in the workplace without sufficient due diligence and equitable procurement practices mostly happens without even notifying workers of changes. This trend is especially problematic in low-wage sectoral work where the logics of corporate America, Silicon Valley, and carceral politics¹⁷⁰ are often married in punitive and exploitative ways. When we reviewed the business goals and investor statements of many of the products in our database, we saw the intertwinement of the logic and values of corporate America (e.g., efficiency, productivity, risk management, cost-effectiveness) and Silicon Valley (“growth hacking,” A/B testing, “habit-forming products” in the pursuit of growth and profits, “move fast and break things,” “act first, apologize later”) that make low-wage, immigrant, and BIPOC workers captive audiences to untested tech products and tech companies that have not conducted enough due diligence over their products, services, and business models.

Private Equity-Backed Risk Management Company Used by Employers and Law Enforcement: Case Study of Appriss Insights

Appriss Insights is a global risk and criminal justice intelligence company. Their business goal is to “administer the nation’s most comprehensive source of person-based incarceration, justice, and risk intelligence data.”¹⁷¹ Their products include real-time notifications, context-sensitive risk assessments, and actionable insights that help government, law enforcement, and businesses manage risk, fight crime, and prevent fraud. Their product for companies in the retail sector, Appriss Retail Secure Store, attempts to crack down on “employee fraud” by tying analytics on loss prevention to monitoring worker performance for “sales-reducing activities,” such as a stockroom that is disorganized.

Our analysis of the technical information¹⁷² available on Retail Secure Store intelligence platform raises red flags:

- The product doesn’t seem to require any informed consent from workers before personal information is collected and processed.
- It appears that workers are unable to view, make sense of, or store the data being collected about them.

169. “The Constant Boss: Work Under Digital Surveillance.” Aiha Nguyen. Data and Society Research Institute. 5/19/21.

170. “Catching Our Breath: Critical Race STS and the Carceral Imagination.” Ruha Benjamin. Engaging Science, Technology, and Society. 2/2016.

171. *Who We Are*. Appriss Insights.

172. *Appriss Insights Retail Technical information*.

- It appears that workers are obliged or pressured to use the software under a real or perceived threat.
- The software appears to collect sensitive personal information that could be a vector for discriminatory decision-making.
- There are potential freedom of association concerns associated with this product, because its facial recognition system could be used to identify workers who meet with one another.
- Despite having a generic privacy policy¹⁷³ on their website, Appriss Insights provides no information on what due diligence it carries out before responding to requests for personal information.

Appriss Insights was acquired by Equifax in August 2021 for \$1.8 billion. Through this acquisition, Equifax seeks to expand their current Workforce Solutions.

For example, as noted by leading race and tech experts,¹⁷⁴ AI-predictive products and tools that are used for “risk management” and label people as “high-risk” or “low-risk” are used both in the criminal justice system as well as in the workplace.¹⁷⁵ Additionally, criminal background checks are a common practice in hiring, applying for housing, public benefits, and college admissions, and is problematic because Black and brown people are arrested and charged at much higher rates than white people.¹⁷⁶ In our database, we note products from PE-backed analytics company Appriss Insights (which was recently acquired by Equifax¹⁷⁷), which combines incarceration, justice, and risk intelligence data used in public and workplace safety, law enforcement, fraud detection and prevention, and health-care credentialing. Clearly, more multi-issue research and organizing is needed to expose the connections between monitoring and imprisonment as it relates to both racial and economic justice in order to expand our imagination of the potential harms to BIPOC, immigrant, and low-wage workers beyond privacy and data harms,¹⁷⁸ as well as to avoid insulating those who may be using tech products that have a disproportionate impact on BIPOC communities and have not conducted sufficient due diligence from accountability in racial justice terms.

173. Appriss Insights Privacy Policy: <https://apprissretail.com/privacy-policy/>

174. Such as Dr. Ruha Benjamin, Dr. Safiya Noble, Dr. Charlton McIlwain, Dr. André Brock.

175. Race After Technology: Abolitionist Tools for the New Jim Code. Ruha Benjamin. Cambridge, UK: Polity. 2019.

176. “Black People Are Charged at a Higher Rate Than Whites. What if Prosecutors Didn’t Know Their Race?” Timothy Williams. The New York Times. 6/12/2019.

177. “Equifax Purchases PE-Backed Appriss Insights for \$1.8B.” John Melendez. The Middle Market. 8/10/2021.

178. “Employee Monitoring as a Form of Imprisonment.” Jeevan Hariharan and Hadassa Noorda. UK Labour Law. 5/19/21.

Workers are Building Power and Pushing Back — Fighting for an Equal Relationship with Employers and the Tech Industry

While the last 20 years of transformative technological revolution has been challenging and added complexity for an already weakened and fissured labor force, workers in the U.S. and around the world are beginning to resist. This comes at a time in which there is a general resurgence in unions and labor organizing as an increasing number of workers are not only organizing for higher wages and improved working conditions, but also for a more equal relationship with employers.¹⁷⁹ In unionized sectors there are examples of the strategies that workers are undertaking to strengthen their voice and power on technology-related grievances. For example, Unite Here has successfully bargained for data/privacy protections, and most recently,

United Food and Commercial Workers, which represents Macy's employees, scored a victory in challenging a self-checkout feature in the retailer's mobile app.¹⁸⁰ In Australia, the Rail, Tram, and Bus Union (RTBU) is fighting a proposal from the Office of the National Rail Safety Regulator (ONRSR) to mandate the use of in-cab and visual recording devices in all Australian trains and trams.¹⁸¹ Professional sports leagues in the U.S. have successfully bargained on wearable tech,¹⁸² and private sector unions in the UK, such as Prospect, have started conducting know-your-rights workshops in order to educate their members on digital monitoring and surveillance in the workplace.¹⁸³ Other labor groups, which are exploring ways to build worker power on these issues are the AFL-CIO, SEIU, AFT Healthcare, Machinists, and the Teamsters, among others.

179. "The Power in Numbers." Binyamin Appelbaum. The New York Times, 9/5/2021.

180. "As more retailers turn to tech, Macy's store employees score victory in challenging self-checkout in mobile app." Melissa Repko. CNBC. 4/30/21.

181. "Workers fight back against 'draconian and dangerous' surveillance proposal." Rail, Tram, and Bus Union.

182. "Big Data, Big Problems: Analysis of Professional Sports Leagues' CBAs and Their Handling of Athlete Biometric." Sarah M. Brown and Natasha T. Brison. Data Journal of Legal Aspects of Sport. 2020.

183. Returning to workplaces: your rights. Prospect Union UK.

Examples of How Workers are Pushing Back on Tech Products and the Tech Industry

Unionized sectors

- **Unite Here** has successfully bargained for data/privacy protections.
- **United Food and Commercial Workers** scored a victory in challenging a self-checkout feature in the retailer's mobile app.
- **Professional sports leagues** in the U.S. have successfully bargained on wearable tech.
- **Rail, Tram, and Bus Union (RTBU)** in Australia is fighting a proposal from the Office of the National Rail Safety Regulator (ONRSR) to mandate the use of in-cab and visual recording devices in all Australian trains and trams.
- **Prospect in the UK** are conducting know-your-rights workshops in order to educate members on digital monitoring and surveillance in the workplace.
- **SEIU, AFT Healthcare, Machinists, Teamsters.** As tech grievances emerge, explore ways to build worker power on these issues.

Non-Unionized Sectors

- **Big Tech organizing.** Labor groups such as Teamsters and alt labor groups such as United for Respect and the Athena Coalition have been organizing Amazon workers around the U.S.
- **Tech workers' movement.** Organizers from the Google Walk Out to other walkouts in the tech industry, the Kickstarter union + unionization, the Alphabet Workers Union have helped shape the tech workers' movement.
- **Gig workers' movement.** National and city worker-led collectives include Gig Workers Collective, Gig Workers Rising, RideShare Drivers United, Los Deliveristas Unidos, and others.

In non-unionized sectors such as the tech industry, workers have been leading several efforts to build worker voice and power to push back on Big Tech and gig economy companies. Organizing inside Amazon has been led by a variety of traditional labor and alt labor groups such as Teamsters, United for Respect, and the Athena Coalition. Likewise, the tech worker movement of the past five years has seen many groups come together and take action in a variety of ways — like the organizers behind the Google Walk Out that spawned other walkouts in the industry, the Kickstarter union + unionization, and the Alphabet Workers Union. The tech worker movement has also sought to build solidarity between white and blue collar workers in tech companies. Relatedly, the Solidarity Fund by Coworker¹⁸⁴ was launched in 2021 to support frontline and technical workers taking workplace improvement actions in tech. So far, the Solidarity Fund has awarded stipends to 44 workers leading organizing efforts in the tech industry. Finally, organizers targeting gig economy companies include a variety of national and city worker-led collectives such as Gig Workers Collective, Gig Workers Rising, Ride-Share Drivers United, Los Deliveristas Unidos, and others.

These movements have been powerful reminders of the collective strength that workers can wield in the tech industry. However, more voices are needed, particularly of immigrants, BIPOC, and low-wage workers. Collective sense-making over the rapidly changing nature of the workplace and economy helps to restore workers' dignity, develop a broad multi class movement in tech,¹⁸⁵ and reimagine an economy that is inclusive and democratically controlled. On the policy and regulatory standpoint, improved awareness of potential harms also increases the avenues for investigations and enforcement.

184. Solidarity Fund by Coworker.

185. For example, see [this story by Avi Asher-Schapiro of the Thomson Reuters Foundation](#) about an Amazon van driver who recently quit his job, citing frustrations with the AI-powered surveillance software.

Concerning Trends About Little Tech

This section contains a discussion of key trends that emerged from our analysis of more than 550 tech products that have emerged since 2019. The findings show the extent that vendors are currently taking advantage of a highly unregulated market in which there are no safeguards, no due diligence, or procurement best practices for employers to follow as they purchase tech products to use in the workplace and that also intersect with low-wage workers navigating the job market.

Low-wage workers encounter discriminatory, “black-box,” and intrusive tech products at every step of the labor process.

Advocates, academic experts, and directly affected communities (e.g., the formerly incarcerated, immigrants) have been raising concerns about the potential discriminatory effects of machine learning–based decision-making tools. Similarly, in a study Co-worker conducted in partnership with workers from Shipt, a grocery delivery service owned by Target, we found that Shipt had implemented a new pay model using a “black-box”¹⁸⁶ algorithm that reduced the wages of 40% of workers.¹⁸⁷ Because these products touch on almost every part of the labor process, the potential for multiple direct harms on low-wage workers is compounded.

Many of the products, which process thousands of data points in black-box algorithmic decision-making systems, are also utilizing untested methodologies that lack independent third-party review. In fact, industry reports have found that many companies are deploying various forms of AI throughout their businesses with little consideration for their ethical implications. In a study of 100 global AI companies, only 6% reported that they ensure AI is used ethically and responsibly.¹⁸⁸

A wide variety of AI products have been rolled out in the retail, restaurant, and hospitality industries in response to the pandemic. Examples include products that try to detect Covid symptoms through AI that can process voice sentiment¹⁸⁹ or companies, such as the AI-based thermal imaging company Feevr, whose customers include Coca-Cola, Lowe’s, Macy’s, Saks Fifth Avenue, Four Seasons Hotels and Resorts, GoDaddy, Carter’s, Verizon, Toyota, Mazda, J. Jill, Dick’s Sporting Goods, and others in the hospitality and retail industries. Feevr has a product that utilizes a “proprietary AI face detection algorithm that detects and isolates an individual’s forehead, which overlays the thermal detection to identify the indicative temperature to detect a possible elevated skin temperature.”¹⁹⁰

Beyond pandemic-specific uses, here are some of the many ways that AI-based products are being used in the labor process and in low-wage industries such as retail, service, healthcare, hospitality, and the burgeoning care economy:

186. A “black box” is any artificial intelligence system whose inputs and operations are not visible to the user or another interested party.

187. “Data Shows Shipt’s ‘Black-Box’ Algorithm Reduces Pay of 40% of Workers.” Coworker.org. 10/15/20.

188. “Report finds startling disinterest in ethical, responsible use of AI among business leaders.” Jonathan Greig. ZDNet. 5/25/21.

189. “Artificial intelligence model detects asymptomatic Covid-19 infections through cellphone-recorded coughs.” Jennifer Chu. MIT News Office. 10/29/20.

190. Feevr FAQs: <https://feevr.tech/pages/faqs>.

AI-based products touching on the labor process and in low-wage industries:

- **Promote workplace safety through temperature and health checks as well as enforcing social distancing and the use of masks.** Products in this category include those that utilize face- or temperature-detecting algorithms, include Cogent Facial Recognition Platform, which counts the United States Immigration and Customs Enforcement (ICE) as a customer; Feevr; FindFace Pro, Tech5 Biometric Technologies; TrueFace Aware, Alibi Single Person Thermal Wrist Temperature Detection and Face Recognition Unit; Density; THine CTI-T66; Fitbit; PcW Checkin; and Gateway COVID-19 Response. Other products, such as the Dasha Covid-19 Screener, use voice AI to determine if workers have Covid-19 symptoms. In 2020, experts noted in a New York Times article that many of the virus screening tools being integrated in the workplace were not reliable or accurate.¹⁹¹
- **Monitor workers' time and productivity.** Products in this category range from those that do general time monitoring (e.g., Argyle and Hubstaff) to QTCamera, currently used by more than 2,500 restaurants, which uses proprietary, patented, advanced AI machine-learning technologies to monitor commercial food preparation and cooking.
- **Monitor workers' mental health and emotional well-being.** Products such as the mental health platform Unmind encourage workers to track, assess, and

understand their wellbeing and how it changes over time. Unmind claims to enable leaders to make more informed decisions about their workforce with aggregated and anonymous data.

- **Workforce management,** including home healthcare workers (such as the VC-backed company Honor), traditional healthcare industries (e.g., KeetSentinel), gig economies (Doordash, ShopMonkey), manufacturing, university, and office work (Flow, Sapience Vue, Trace, Workforce-Time), and restaurants/hospitality (Presto-Pay at Table, which currently operates in 1,800 restaurants).
- **Worker and customer relations.** This includes, for example, Chorus, a relationship intelligence platform that seeks to boost productivity and revenue in customer service, hospitality, travel, and sales.
- **Hiring and recruitment.** The products in this category target everything from Fortune 500 companies and specific industries such as financial services, retail, manufacturing, hospitality, aviation, and technology (e.g., HiredScore, Hirevue, Human) to hiring and recruitment more broadly (Jobandtalent, Pymetrics Talent Acquisition Platform). Some of these products claim to track emotions such as anger, contempt, disgust, engagement, joy, sadness, surprise and valence (a measure of the positive or negative nature of the recorded person's experience) by analyzing a video clip. Through the use of an emotion recognition API, Affectiva also lets other companies such as Hirevue incorporate their data into their products.

191. "Employers Rush to Adopt Virus Screening. The Tools May Not Help Much." Natasha Singer. The New York Times. 5/11/20.

- **Predict workplace accidents and incidents.** Some products try to predict workplace accidents in the delivery services industry, such as those that watch truck drivers (Idelic Safety Suite, Telematics Fleet Tracking). Others, such as Appriss Secure, target the retail industry with algorithms that detect workplace irregularities.
- **Optimize labor and employment practices.** Products in this category seek to optimize the functioning of the labor markets by either trying to improve transparency and analyze workers' earnings (SyndioPayEQ) or assess eligibility for unemployment benefits (Steady).
- **Reskilling and workforce development.** There is a proliferation of start-ups, such as Lambda, Flockjay, Hone, Microverse, etc., focused on retraining/reskilling workers.

The next generation of productivity tools expands employment and labor organizing surveillance in order to mine more data from low-wage workers activities.

Time and productivity tracking apps, platforms, and software have existed in the suite of business intelligence and enterprise technology tools for at least eight years. Our website catalogues productivity tools of just the past two years, which incorporate facial recognition technology,¹⁹² more sophisticated intelligence dashboards, more intrusive data collection inside and outside the workplace, increasingly more sensitive data collected about workers (medical, sentiment, stress levels, cognitive functioning, etc.), and real-time monitoring of workers. We want to highlight here the increasing use of three main types of what we call productivity/prediction products, which go a step further and gather data about workers' behaviors and actions to conduct a variety of predictions.

1. Productivity tracking to train machine learning and AI systems. As the interest in automation has accelerated in part due to the pandemic, tools that seek to track and monitor workers' actions to gather data into AI systems have proliferated; this data is intended to eventually automate performance management. This trend has existed for over five years, first in the trucking industry, but Amazon and other companies (freight, delivery, gig economy) are looking to use workers' productivity data to eventually automate their entire systems. In call center work (an industry great-

ly at risk of automation), products like Cogito, which performs live, in-call voice analysis, or Chorus.AI, which records, transcribes, and analyzes calls in real-time, could eventually be used to train machine learning and AI systems that would allow employers to automate interactions, understand customer sentiment, and automatically create interactive chatbots to minimize the need for human workers.

2. Productivity tracking for threat detection. A few examples: Teleperformance TP Observer is a risk-mitigation tool that monitors and tracks real-time employee behavior and detects violations to business and workplace policies. Other tools seek to crack down on "employee fraud," such as Apriss Retail's Secure Store, which ties loss prevention tech to monitoring worker performance for "sales-reducing activities," such as a stockroom that is disorganized. Oracle's Retail XBRI Loss Prevention system constantly monitors cashiers and provides a ranked list of workers at high risk for suspicious transactions and other anomalies. Finally, reports earlier this year found that Amazon was using geoSPatial Operating Console to analyze and visualize public data on unions, grouping data into categories like "Whole Foods Market activism/unionization efforts," "union grant money flow patterns," and "presence of local union chapters and alt labor groups."

¹⁹². See Scorecard by Fight for the Future highlighting which top retailers are employing facial recognition technologies in the workplace: [Ban Facial Recognition In Stores](#).

3. Productivity tracking in an increasing number of small business and working class jobs.

As noted earlier, there is also an ongoing digitization of small business and working class industries such as auto repair (ShopMonkey), plumbing and electricians (ServiceTitan), beauty salons (GlossGenius) and barbershops (Squire), and elder care,¹⁹³ which will bring the data collection and processing to the hyperlocal level and to more sectors of the job markets.

193. "Funding Surges For Startups Serving Older Adults." Joanna Glasner. Crunchbase News. 6/4/21.

Some products can undermine worker attempts to organize.

Despite the potential passing of the PRO Act, which would provide protections to workers trying to organize, limiting what companies can do to disrupt union membership campaigns, as well as the establishment of the White House Task Force on Worker Organizing and Empowerment,¹⁹⁴ an increasing number of products can undermine these efforts. As we discussed in our analysis of over 500 employment tech products, an increasing number of products collect data about workers' whereabouts inside and outside the workplace as well as their movements in the job markets. Likewise, with the expansion of tech products in other areas of workers' lives, the ability to aggregate data from the various data brokers will increase over time. Therefore, while these products may appear neutral and their intended business goal is not to surveil workers, they are increasingly providing employers, corporations, and governments with the ability to monitor workers as well as understand their habits, actions, and behaviors.

These products include:

- **New Choice NY.** A [web-based app](#) for public workers in New York misleads workers into thinking unions offer no benefits and says it can save them \$700 a year in two minutes by filling out a short form. By filling out the online form, the worker will cancel their union membership.
- **Workplace by Facebook.** This corporate version of Facebook allows employers to suppress and search for topics like "unionization" in chats between workers, according to press reports; it is currently used by Walmart.¹⁹⁵
- **Perceptyx** is used by 30% of Fortune 100 companies (Amazon is one of them) and periodically polls workers about their work satisfaction. It then utilizes a "union vulnerability index" to compare responses against a data set of 12 million survey responses from other clients to predict the likelihood that a worker in a given firm may seek to unionize. **Worktango** and **Little Mendelson** offer similar products.
- **Oracle Retail XBRi Loss Prevention Cloud Service** constantly monitors cashiers and provides managers with a daily, ranked list of high-risk workers to identify suspicious trends, transactions, and other data anomalies.
- **Controlio** features a productivity score for workplaces that is calculated by monitoring and measuring employees' active use of computer programs and websites.
- **Microsoft Workplace Analytics.** In its Workplace Analytics software, Microsoft assigns every employee an "influence score" that indicates "how well-connected a person is within the company," based on extensive email, calendar, call, and chat data.

¹⁹⁴. Executive Order Establishing the White House Task Force on Worker Organizing and Empowerment. 4/26/21.

¹⁹⁵. "Facebook Pitched a New Tool Allowing Employers to Suppress Words Like Unionize in Workplace Chat Product." Lee Fang. The Intercept. 6/11/20.

- **Thomson Reuters CLEAR** is powered by billions of data points and searches public records to locate hard-to-find information and quickly identify potential concerns associated with people and organizations, including unions. While the product website suggests this tool is only sold to law enforcement, in a job listing for an investigations analyst to follow “organized labor,” Amazon sought persons with experience with this tool and implied they had licensed access to it.¹⁹⁶
- **RetailNext** sells technologies that enable big retailers to collect and analyze data from their workers. Utilizing a technique called “direction mapping,” for example, RetailNext can analyze how workers move and behave in the store and how they interact with customers. Employers can combine this tool with “frequent high-resolution snapshots” to see how products and assets are placed throughout the store, while also capturing employees in their daily workflow.
- **IBM Security i2 Analyst Notebook.** This visual analysis tool helps corporate analysts turn data into intelligence. It offers connected network visualizations, social network analysis, and geospatial or temporal views to help companies uncover hidden connections and patterns in data. IBM says this insight can help businesses better identify and disrupt business threats.
- **FlexiSpy** can be installed on a worker’s device without their knowledge and will record their audio calls, sent and received text messages, download their photo library, and track their precise geolocation.
- **InterGuard** says its software “can be silently and remotely installed, so you can conduct covert investigations and bullet-proof evidence-gathering without alarming the suspected wrongdoer.”¹⁹⁷ Their example of problematic behavior is a worker who, before beginning their work for the day, visits a job listings website.
- **Hubstaff** offers geofencing (a virtual perimeter for a real-world geographic area) and GPS tracking “so you can get a deeper level of employee monitoring by seeing when teams arrive or leave locations.” Recommended uses include seeing routes driven by workers, stops made, and time spent at each location, and monitoring for “buddy punching [a timecard] and time theft.”
- **Claro Analytics** describes itself as “sonar for employee engagement,” monitoring billions of data points to benchmark worker attrition risk and worker engagement.

196. “Amazon is hiring intelligence analysts to watch organized labor, hostile political leaders, more.” Catalin Cimpanu. ZDNet. 9/1/20.

197. Employee Monitoring Software: <https://www.interguardsoftware.com/employee-monitoring-software/>.

The potential for low-wage workers to be surveilled both inside and outside the workplace is increasing.

Workers are being surveilled inside and outside the workplace in a number of ways. For a few years now employers such as Walmart, Sam's Club, Starbucks,¹⁹⁸ Sunglass Hut, LensCrafters, and Best Buy have been instituting bring-your-own-device policies or strongly encouraging workers to use personal cell phones or tablets to download apps and work tools. Another common practice is the use of enterprise tech (designed to streamline workflow, improve communication, and provide access to data), such as Oracle Business Intelligence Suite Enterprise Edition Plus, which is used by fast food restaurants like McDonald's to monitor social media for terms like "wage theft," "low pay is not OK," and "fissured workplace," and then look for posters' names in company employment records. An increasing number of local governments are also beginning to purchase GPS monitoring devices for their auto fleet (see a recent case in Connecticut¹⁹⁹).

A new AI tool funded in part by the U.S. military claims to find hidden relationships between words to detect irony, intentional falsehood, or sarcasm.²⁰⁰ Using posts from Twitter and Reddit, dialogues, and even headlines from The Onion, researchers Ivan Garibay and Ramya Akula showed how some key words relate to other words. "For instance, words

such as 'just', 'again', 'totally', '!', have darker edges connecting them with every other word in a sentence. These are the words in the sentence that hint at sarcasm and, as expected, these receive higher attention than others," they write.

Companies have also been using monitoring software on workers' own devices to capture personal messages sent on Facebook and WhatsApp to aid HR in conducting investigations. For example, on their website, InterGuard says it can capture WhatsApp messages on Android and iOS devices and Facebook messages sent and received on Android devices. Their software also logs all webpages visited and saves a copy of any file uploaded to the cloud. More recent startups, such as Beekeeper and Happeo, are producing a new generation of apps that have to be downloaded to a worker's cellphone in order to access mobile communication platforms for workers inside and outside the workplace. They also tend to collect analytics regarding how quickly a worker reads and responds to messages, information that could be used for disciplinary actions. Other recent examples are the use of the Mentor app by Amazon drivers, which has been found to track their location even after they clock out from work.²⁰¹

198. "When 'Teamworks' Isn't Working, Starbucks Baristas Pay a Price." Coworker.org. 6/25/19.

199. "Safety, Savings and Surveillance? State Labor Unions Concerned About Vehicle Tracking." Len Besthoff. NBC Connecticut. 5/25/2021.

200. "How to Detect Sarcasm with Artificial Intelligence." Patrick Tucker. Defense One. 5/5/21.

201. "Amazon uses an app called Mentor to track and discipline delivery drivers." Annie Palmer, CNBC. 2/12/21.

As noted, our database catalogues some of the patents that will continue to blur the lines between “workplace” and “private life.” For example, with ambient computing, super apps, and metaverse/VR, we will soon see products that will seamlessly integrate data across technologies, devices, and locations. Likewise, a growing number of worker and employment data brokers and worker data analytic companies (e.g., Argyle) are aggregating and selling access to workers’ employment history and travels.²⁰² As a result, tech companies (e.g., Gridwise, Stoovo, Para, and Appjobs.work) are collecting, aggregating, and analyzing highly detailed data about workers inside and outside the workplace.

202. See Gridwise terms of service: <https://gridwise.io/termsofservice>.

Low-wage workers must navigate scientifically questionable hiring and background check technologies.

Many of the products in the database utilize non-transparent and scientifically unproven machine learning methodologies.²⁰³ An area where this practice is rampant is in the use of hiring and recruitment tech. Some examples include the use of AI to determine culture fit (e.g., Retorio), the use of AI to determine personality through the sound of someone's voice,²⁰⁴ and even AI that will be able to find hidden relationships between words to detect irony and intentional falsehood.

Some hiring and recruitment tech companies have been dropping problematic practices after third party review and pressure from tech policy watchdogs. For example, HireVue dropped their AI facial monitoring tool after it went through an independent audit and the Electronic Privacy Information Center filed a complaint with the FTC alleging that HireVue's use of AI to assess job candidates' video interviews constituted "unfair and deceptive trade practices."²⁰⁵ However, products such as these are still common, proliferating, and getting more and more sophisticated.

Other Little Tech companies utilizing scientifically untested methodologies in hiring and recruitment are:

- **Human**, which analyzes video-based job applications and scores candidates' emotional reactions.
- **Modern Hire**, a pre-employment assessment that claims to be able to predict job performance.
- **Affectiva**, which claims that it can track emotions such as anger, contempt, disgust, engagement, joy, sadness, and surprise, and measure how pleasant or unpleasant they are by analyzing a video clip.
- **Arena Analytics**, a recruitment tool that collects data from applicants and external sources like Glassdoor, and then utilizes machine learning to recognize patterns and make predictions about worker retention, engagement, and other selected outcomes.
- **Fountain**, which claims it can identify the best applicants in less than 90 seconds.
- **HiredScore**, which "harness[es] the power of AI to ensure everyone who applies gets reviewed" and "[s]imultaneously address[es] front door, qualification, and hiring bias issues with [its] AI-driven toolkit." Its "Express Hiring" feature is currently being used by Domino's Pizza.
- **Microsoft Wellness Insights**, which seeks to help workers manage workplace anxiety by providing wellness recommendations based on their biometric data (heart rate, blood pressure, and more).

203. "Time to regulate AI that interprets human emotions." Kate Crawford, Nature. 4/6/21.

204. "Shhhh, they're listening: Inside the coming voice-profiling revolution." Joseph Turow. Fast Company. 5/3/21.

205. "HireVue drops facial monitoring amid A.I. algorithm audit." Jeremy Kahn. Fortune. 1/19/21.

Many of these products discriminate against protected classes, such as disabled workers.²⁰⁶ For example, AI-powered hiring and recruitment products such as Pymetrics and Humantic AI utilize online tests that are not suitable for candidates with ADHD, dyslexia, and/or color blindness, are unforgiving of time gaps in résumés even for pregnancy or medical reasons, may demand online tests to measure attention span or culture fit, and can require videos to be recorded to analyze voice or emotions. While it is understandable that employers seek out technology to speed up and simplify hiring processes, these tools generally don't offer reasonable accommodations to protected classes, such as those afforded under the Americans with Disability Act.

Additionally, automated background check and reputational technologies are problematic because they serve as data brokers that aggregate data points on workers for the benefit of the employer, while leaving workers vulnerable to losing a job or an opportunity based on inaccurate information. The reason for this is that the process for workers to see what data has been collected about them is complicated and time-consuming, especially for those with limited digital literacy.

There are a number of newer background check, reputational verification, and workforce management tools available to recruiters and employers:

- **Checkr** is an on-demand background check platform. Its Continuous Check “gather[s] proprietary data from key sources ... to give you real-time updates on new criminal charges in your workforce.”
- **Fama AI Social Media Check** scans a candidate's social media profiles, labels content that is problematic (such as references to alcohol or drugs, profanity, is disrespectful), and warns potential employers in 10 seconds or less of the behaviors it has found.
- **Onfido** is an identity verification platform and does not offer conventional background checks. However, it is used by various gig economy platforms to verify the identities of workers, their right to work in a country, and their driver's license.
- **Argyle** aggregates workers' employment records to provide income verification services to third parties such as payday loan and other loan services, lenders, and insurers. They already have access to records of Kroger, Amazon, USPS, Walmart, Walgreens, CVS, Starbucks, Uber, and FedEx employment records and are targeting Best Buy, Home Depot, UPS, Target, and Yum! Brands. In their case studies for investors, Argyle notes that they have already acquired the employment records of 80% of gig economy workers in the U.S.²⁰⁷
- **Verensics Integrity Assessment** offers a “psychological assessment that promises to outperform any background check” and tells you how risky it may be to hire a given person. The Verensics assessment focuses specifically on risk: risk of theft, risk of violence, risk of fraud, etc.
- **Emsi** harvests “professional profiles” from social media and “traditional labor market information” to offer labor market analytics such as compensation, job posting, and market data.

206. “Report – Algorithm-driven Hiring Tools: Innovative Recruitment or Expedited Disability Discrimination?” Lydia X. Z. Brown, Ridhi Shetty, Michelle Richardson. Center for Democracy and Technology. 12/3/20.

207. Argyle A Round Funding Memo: <https://www.notion.so/Argyle-A-Round-Funding-Memo-Public-Version-597e168c519c4cd7b40bd5ff1acb1083>.

- **LinkedIn Talent Insights** can “make smart workforce and hiring decisions,” as this tool allows for “competitive benchmarking” of salaries and allows for workplaces to see skills gaps in their existing workforce relative to their competitors.
- **Horsefly** says that it can “find hidden talent pools with availability, and where skill shortages exist, map alternative industries and identify transferable skills” so that employers can hire qualified candidates from adjacent industries who may accept lower salaries.
- **Gartner TalentNeuron** will “incorporate competitive intelligence in your talent and business strategic planning by understanding key competitors’ hiring trends” and can help organizations “think strategically about how to acquire talent by looking at what your competition is doing.”

Most companies still opt to provide low-wage workers with different privacy protections based on where they live and have lax data-sharing policies with law enforcement.

Many of the products listed in our database provide different privacy protections for workers based on where they live (e.g., California, the EU). On the surface this may seem like a harmless practice; however, in order to provide workers with these different privacy protections, companies have to design and engineer segregated systems that can differentiate between jurisdictions and what worker rights apply. The extensive cost associated with developing and running these complex and fragmented engineering stacks (especially as more countries and jurisdictions adopt similar legislation) was one of the major reasons that Microsoft ultimately decided to adopt GDPR for all their users in 2018.²⁰⁸

The same complexity extends to gig economy companies whose employees travel between states with different privacy protections or worker classifications. Despite the cost of providing different privacy protections, most companies still choose to do so. We need to explore why companies choose to spend time and money to create and maintain segregated data systems rather than offer all employees the same rights, wherever they might be located.

Also concerning is how long worker data is retained in many of these products. Many companies note in their policies that they keep data in accordance with “applicable law” (which they rarely name). Companies should

name the laws they say they adhere to and specify the retention periods for each data element. While most of the multinational companies (Microsoft, Salesforce) do provide this information, few of the Little Tech companies do. While there is data that employers have to retain for a period of time post-employment (payment history, evidence of right/eligibility to work, disciplinary actions in some cases), there are many data points collected about workers (how fast they pick items, how often they arrived late/early/on time to work, their temperature when arriving to work on X date) that don’t need to be retained.

Finally, we found that the majority of the companies in the database say they would provide law enforcement with access to worker data. Only a few companies, among them Blue Ocean Covid Screening, Blackline, and Clear-Company, specified that they will fulfill only “lawful” requests for such data, require a warrant or subpoena, or will “consider” requests but not necessarily fulfill them. Most of the companies do not reveal what due diligence, if any, they would carry out before responding to law enforcement requests or if they would notify the worker if their data has been or will be disclosed.

208. “Microsoft’s commitment to GDPR, privacy and putting customers in control of their own data.” Julie Brill, Corporate Vice President for Global Privacy and Regulatory Affairs and Chief Privacy Officer. 5/21/18.

Conclusion

This report explores the implications of more than 550 technology products that have appeared in the workplace and job markets during the pandemic. Our findings have been sobering. While everyone's eyes have been on Big Tech, Little Tech, an unregulated marketplace made up of thousands of commercial vendors, business intelligence tech firms, military tech companies, startups, and app developers—has been proliferating during our current pandemic tech boom. Combined with the pandemic, the proliferation of for-profit tech business models interfacing with education, health/mental health, and housing is seemingly unstoppable.

Our research shows that while low-wage workers continue to face economic precarity, tech products that enable real-time productivity management, tracking, workplace safety monitoring, and enforcement practices have given even more control to employers. Meanwhile, Little Tech companies are raising historical amounts of capitals and continue and expand upon Big Tech business models and practices by monopolizing and commodifying highly detailed data about workers and job markets for private gain, utilizing untested scientific methodologies with intrusive data collection practices (e.g., collecting biometric data, heart rate, emotions/mood), undermining

worker attempts at organizing, and expanding the surveillance of workers inside and outside the workplace. Additionally, most investors, founders, and designers of these tech products do not demonstrate a willingness to listen to frontline workers, consumers, and Black and brown communities or conduct sufficient due diligence to better understand potential implications for consumers and workers.

While it's important to understand the implications of products on workers, we must at the same time, also challenge the products at the industry level. The technology industry is not powerful because of the products they develop and their wealth, but because they fundamentally restructure markets for public services and supply other powerful economic public and private actors with unregulated digital surveillance, monitoring, and enforcement as a way to expand their market power. Because of the economic dimensions of this challenge, policy and regulatory policies that account for privacy harms will not be sufficient unless they also integrate market design measures that can definancialize and deconcentrate the market power of the tech industry and the institutional investors that enable them.²⁰⁹ Therefore, as we look to the future, we must reflect on what we have learned about

209. "Woke Capital?" James F. Tierney. LPE Project. 5/5/21.

how tech companies and their products are founded, developed, and grown as well as their impact on consumers and workers. For one, we have learned that unrestricted and privatized technology innovation has eroded public interest and deepened the neoliberal approaches that enable the private sector, and capital owners to shape corporate and policy practices that touch on everything from the bargaining power of workers, wage suppression, to tolerating new business structures that disempower workers and fissure the labor markets, and the ongoing push for automation.

In the months to come, we at Coworker will be engaging experts from multiple issue areas and sectors to explore the economic, policy/regulatory, organizing, and narrative and storytelling strategies needed to address these challenges. We hope this memo helps to unpack our current tech boom and the rapidly expanding Little Tech ecosystem and its impact on American workers.

