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TAKE THE MIC

How Worker Voice Shapes Workplace Technology

TECH EQUITY

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INTRODUCTION

Every day, new headlines emerge hyping the power of artificial intelligence, algorithmic management, and automation technologies to transform work. The narrative surrounding emerging technology often focuses on newness and innovation, but without the ability of workers to shape its use, technological advancement in the workplace often follows a familiar pattern of deskilling, work intensification, displacement, and other harms. It is critical that workers have avenues to exert agency in how technology is used at work.

Workers are among the first groups in society to experience the latest waves of digital technologies that can be used to track, monitor, and manage them and suppress workers' ability to organize.[1][2] In most cases right now, workplace technology is the result of development and deployment processes that systematically exclude the voices of workers, community members, and other stakeholders and there is now overwhelming evidence of the harms of such exclusion.[3][4][5]

Experts at UC Berkeley Labor Center have identified harms that workers across industries have experienced due to new technologies, including but not limited to the following: [6]

- Discrimination;
- Work intensification and health and safety harms;
- Deskilling and job loss;
- Lower wages and less economic mobility;
- Contingent work;
- Suppression of the right to organize;
- Loss of privacy; and
- Loss of autonomy and dignity.

While workers are highly vulnerable to technological harms, they are also best positioned to advocate for a different, better approach to tech design and adoption, based on their unique expertise. As Amanda Ballantyne, Jodi Forlizzi, and Crystal Weise write, "Workers' voices are a crucial resource for making innovative technologies trusted and effective, so their full benefits can be realized for society."

Technological tools built without input from workers who use them can also be detrimental to consumers, as seen in the use of AI technology that undermines patient safety by ignoring and overriding the expertise of nurses.[8] Studies have also shown that workplace technologies that take into account workers' needs, existing work processes, and general welfare are more likely to succeed than systems that are imposed on workers.[9] Worker involvement in decision-making around technology adoption also makes for more effective and trustworthy tools.[10] It provides frontline intelligence and increases chances of successful adoption, which in turn can improve worker satisfaction as well as business outcomes.[11] [12]

"WORKERS' VOICES ARE A CRUCIAL RESOURCE FOR MAKING INNOVATIVE TECHNOLOGIES TRUSTED AND EFFECTIVE, SO THEIR FULL BENEFITS CAN BE REALIZED FOR SOCIETY."

- Amanda Ballantyne, Jodi Forlizzi, and Crystal Weise

To achieve better outcomes, workers must be able to build effective collective power to influence the direction of workplace technology. However, workers who seek to organize together often experience significant structural barriers in the United States. Labor laws that favor employers, combined with the massive resources available to both employers and technology firms, have limited workers' access to unions and the collective bargaining process—the primary avenue through which workers have been able to negotiate democratic and legally binding policies related to workplace technology.[13]

Despite these challenges, workers have continuously fought for control over how technology is integrated into their work, from the life-threatening machines of Industrial Revolution-era factories to the use of communication technologies to contractualize and outsource jobs.

Workers have demonstrated that technological advancement can be shaped to become widely beneficial to society rather than to a privileged few. TechEquity's AI Policy Principles outline how we can craft AI policy to support that goal.[14]

THE OBJECTIVE OF THIS PAPER IS TO IDENTIFY MECHANISMS THROUGH WHICH WORKERS CAN EXERT INFLUENCE OVER THE DEVELOPMENT, DEPLOYMENT, AND USE OF TECHNOLOGY IN THE WORKPLACE.

Unions are the most representative and efficacious institutions available to workers to do this. Through workplace organizing, unions provide workers with codified voice mechanisms in the form of collective bargaining agreements (CBAs) along with creating political representation, building structural power, and protecting workers' interests against employer abuses, including technology-specific concerns.[15]

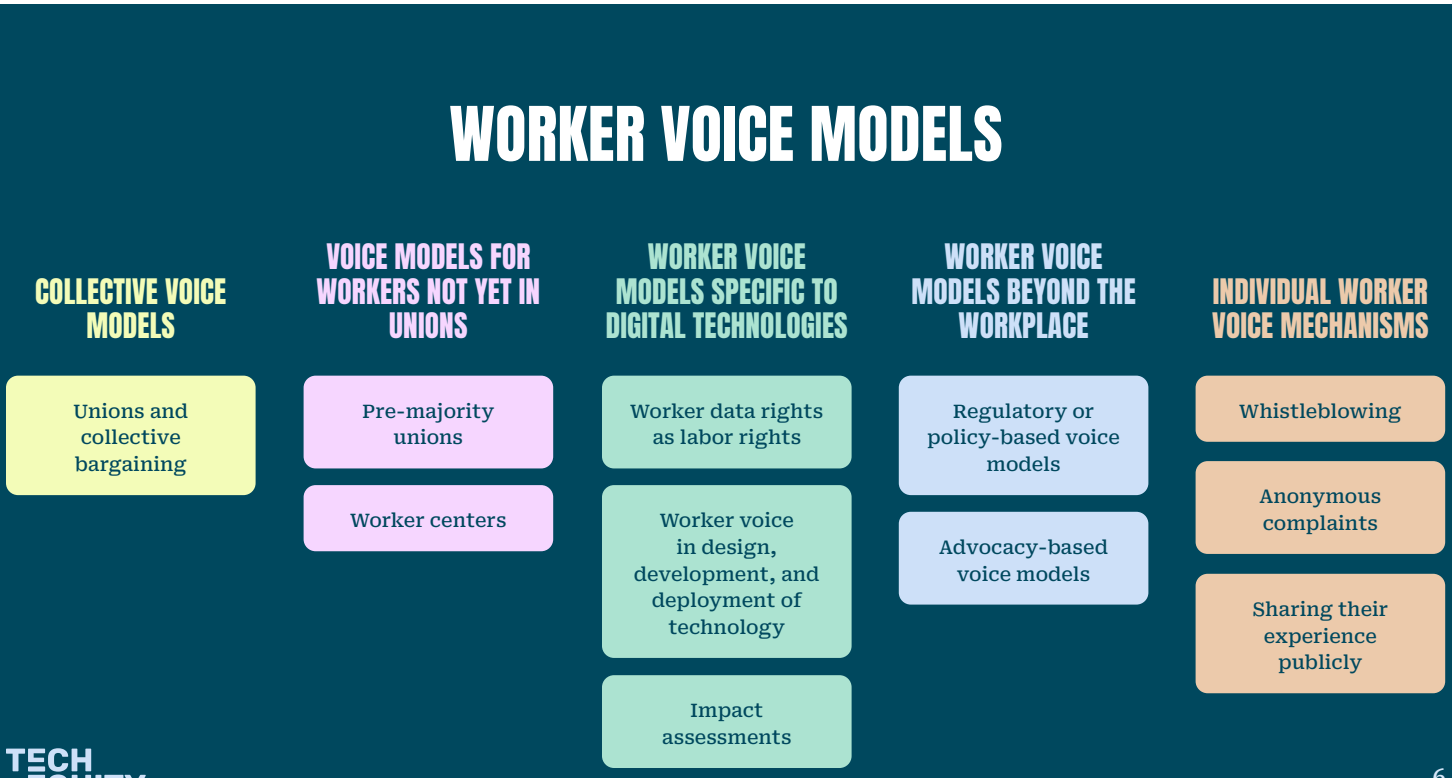
However, only a minority of U.S. workers are currently members of unions, despite historically high approval for unionization.[16] To address this gap, and since collective action that builds worker power is undeniably the most effective lever to create structural change, other mechanisms outlined in this paper have been selected for their potential to open up additional space and pathways for action by workers who have not yet been able to form a union—or are legally prevented from doing so. The organization of these strategies also reflects the primacy of collective voice mechanisms and mechanisms that build structural power over those that emphasize individual worker interventions.

In this paper, following a definition of worker voice, we highlight worker voice models that can prevent harmful outcomes by empowering workers to shape technological advancements that benefit working people and society at large.

These models include:

- **Collective voice models**
  - Unions and collective bargaining
- **Voice models for workers not yet in unions**
  - Pre-majority unions
  - Worker centers
- **Worker voice models specific to digital technologies**
  - Worker data rights as labor rights
  - Worker voice in design, development, and deployment of technology
  - Impact assessments
- **Worker voice models beyond the workplace**
  - Regulatory or policy-based voice models
  - Advocacy-based voice models
- **Individual worker voice mechanisms**

This classification is necessarily flexible and amenable to change, given the overlap between the different categories identified here. While some of these models are sourced globally, this paper primarily focuses on the U.S. context. This repository of models and mechanisms can be utilized by workers, worker advocates, and policymakers in the U.S. to ensure that including worker voice is a prerequisite for making decisions about workplace digital technologies. Although it may seem that there is not much holding back the onslaught of such technology in the workplace, this paper shows that there are many paths workers can take to ensure they are at the table when technology decisions are made.



DEFINING WORKER VOICE

Emerging from literature that adapted Albert Hirschman's "exit, voice, loyalty" framework to trade union activity, worker voice refers to the ability of workers to represent and pursue their interests in their place of work and outside in ways that improve their working conditions and their livelihoods.[17] Voice mechanisms are varied in their processes and outcomes, encompassing a wide range of structures such as unions, advocacy campaigns, and even individual worker actions.

While participation by impacted groups can lead to more inclusive and less harmful technological systems, the inherent power differential in the workplace between employers and employees must be addressed to make worker engagement around technology meaningful. Purposeful engagement becomes even more challenging when workers do not have access to information that can help them understand opaque systems such as AI models, algorithmic management systems, and automated decision-making technology (ADMTs). Workers also face notable resource barriers: for example, most workers might

PURPOSEFUL ENGAGEMENT BECOMES EVEN MORE CHALLENGING WHEN WORKERS DO NOT HAVE ACCESS TO INFORMATION THAT CAN HELP THEM UNDERSTAND OPAQUE SYSTEMS.

be unable to take time off work to participate in consultative processes. Without addressing these issues, worker involvement can be reduced to token activities leading to "participation washing," and at worst it can be used to endorse technology that is ultimately harmful to workers and/or the public.[18]

Drawing on Mark Anner and Matthew Fischer-Daly's definition of worker voice and Data & Society's Democratizing AI: Principles for Meaningful Public Participation, effective worker voice strategies must:[19] [20]

- Be participatory, democratic, inclusive, and representative, creating easy-to-access processes for diverse groups of workers to present their views and advocate for their rights;
- Ensure meaningful worker participation by building their technical capacity to understand the systems being designed or deployed;
- Operate on an ongoing basis from the earliest stages of problem formulation, design, and deployment, to operation, and in regular monitoring activities;
- Acknowledge and integrate workers' expertise to benefit workers, and not merely to develop systems that displace them;
- Provide protections to workers from possible reprisals in the form of demotions, wage reductions, or even loss of employment;
- Be underpinned by hard law requirements that provide institutional support in the form of resources and expertise and have clear enforcement mechanisms.

These characteristics reinforce each other and can together create the most efficacious worker voice mechanisms. While some models, such as collective bargaining agreements, possess all or most of these characteristics, other models have been included because they create or increase space for workers to use their voice even in contexts where barriers to unionization preclude workers from benefiting from CBAs.

WORKER VOICE MODELS

Different models through which workers can exert influence over the development, deployment, and use of technology in the workplace.



COLLECTIVE VOICE MODELS

Institutional mechanisms that build structural power through collective bargaining

This section outlines institutional mechanisms that enable the scaling of worker voice, giving workers the structural power they need to shape and control when and how technology enters the workplace.

UNIONS AND COLLECTIVE BARGAINING

Unions have always been at the forefront of the fight against workplace technologies that are detrimental to workers.[15] Against a backdrop of political turmoil and uphill legislative battles, unions have already been remarkably successful in drawing attention to the dangers posed by emerging technologies.[21] By negotiating strong protections for their members and codifying these in binding contracts, unions have established themselves as the most effective worker voice mechanism in the protections they afford to workers.

Unions are already winning critical protections; below we highlight four key categories, along with some relevant examples.

Preserving working conditions and preventing job displacement

- To impose costs on employers seeking to replace casino workers, the Culinary Workers Union negotiated a new contract in 2023 that included a severance package for employees whose role was replaced by newly introduced technology, as well as training for new jobs created by such technology.[22] [23] Protections against layoffs can also come in the form of layoff prohibitions (for example, NewsGuild-Communication Workers of America members negotiated a contract that prohibits job cuts due to AI), "bumping rights" that protect senior workers, requirements to meet and confer prior to layoff notices, and unions' right to contest layoffs.[24]
- Two high-profile strikes in 2023—conducted by the Writers Guild of America (WGA) and the Screen Actors Guild-American Federation of Television and Radio Artists (SAG-AFTRA)—won:[25]
  - Job security provisions preventing companies from using AI to write and create digital replicas to avoid hiring writers and actors.
  - Provisions related to compensation and creative credits mandating that workers must be credited and paid for their work, as well as for the use of their likeness in all subsequent productions.
  - Notice and consent rules, informing workers and the union, negotiating and obtaining their consent before AI is used to capture their data, likeness, or creative output, and generate drafts or replica images.
  - Protections for worker control over the labor process.[26]

Placing limits on workplace surveillance

- Strong protections against workplace surveillance for members include restrictions on the use of employee monitoring technology in the Communication Workers of America (CWA) contract for workers at ActBlue and for call center workers; limits on cameras and their uses in UPS trucks after a Teamsters strike in 2023; and prohibitions on keystroke and mouse monitoring software in contracts for workers at ActBlue as well as Google Help workers hired through Accenture.[27] [28] [29] [30]
- Right to know clauses and clauses that call for the participation of unions, workers, and management in discussions on how monitoring technologies can be used in the workplace.[15]
- Protections for workers' data rights that place limits on employers' access to worker data, as seen when Norwegian trade unions appealed successfully to the national data protection authority to challenge an algorithmic management system.[31]

Safeguarding workers' rights against algorithmic management

- Unions have negotiated CBAs containing provisions that ensure that human decision-making is not fully replaced.
- CBAs can also codify strong rights to information about how decisions are made. Spanish trade unions entered into an agreement with a food delivery platform that mandates access to the identity of the developer and implementer of the algorithmic system, details of the training data used to develop the system, and reports on impact assessments conducted.[32] This contract language is also strengthened by hard law requirements like the Rider's Law, which requires companies to inform unions about the existence of algorithms and how the algorithms function to make decisions that affect working conditions and access to employment.[33]
- Unions have also included strong rights for workers to contest algorithmic decisions in case of unfavorable outcomes.

Preparing for future technological developments

- Given that technology is constantly evolving, unions have also worked to future-proof CBAs. Union rights clauses are a way to ensure that unions are notified, included in decision-making processes, and take part in the implementation of new technologies in the workplace.[15] [34] [35]
  - The WGA contract included provisions mandating discussions on a company's use and intended use of AI and related technology.[29]
  - The Teamsters contract with UPS goes further, mandating that members will perform any new or modified jobs that result from the implementation of the new technology.[29]
  - The Transport Workers Union's (TWU) CBA with the Central Ohio Transit Authority requires union consent before any autonomous transportation technology can be introduced.[36]
- Unions are also experimenting with ways to integrate worker voice from the early stages of development of new technologies.
  - Labor Management Partnerships (LMPs) are models where worker participation in the design, implementation, and ongoing modification of technology systems is institutionalized through joint structures of governance and dispute resolution. The Kaiser Permanente LMP showcases how worker participation in decision-making at all levels of an organization, together with economic security protections and training and education programs for workers, can lead to positive outcomes for organizations and workers when new technologies are being rolled out. [37] [9]

    - The AFL-CIO and Microsoft entered an agreement in 2023 in which the unions will connect workers with AI developers so that direct worker experience can guide the design of new technologies; Microsoft will also work with the unions to develop programs to train workers to work with AI.[38]
- Unions and labor federations such as the AFL-CIO Tech Institute have entered partnerships with universities and researchers.[39] UNITE HERE collaborated with researchers at the Tech Solidarity Lab at Carnegie Mellon University to develop prototypes of hospitality-related automation technologies that aim to improve working conditions and enhance job security for workers.[40] [41]

WORKER VOICE IN ACTION: TAHLIA'S STORY

In late 2024, Tahlia and her coworkers became the first Alphabet Workers Union-CWA members on the Google Help team to secure a collective bargaining agreement with Google vendor Accenture that includes protections related to workplace technology. Tahlia shared some of her insight using worker voice to influence workplace technology decisions.

As a contractor, Tahlia and her coworkers started organizing to address some specific concerns and challenges that often arise for contract workers in the tech industry:

"WITH EVERY LEVEL OF CONTRACTING, YOU GET LESS PAY, LESS BENEFITS, AND LESS PROTECTIONS ON THE JOB."

"At Google, there's a three-tiered system: first, you have Google employees who are paid very well and have great benefits; second, there is my team, who is contracted out with Accenture; and third, Accenture would contract out even more. With every level of contracting, you get less pay, less benefits, and less protections on the job."

Technology at work was one of the issues that Tahlia and her coworkers wanted to address.

"As contractors with Google, we often don't have access to the tools we need. These are tools that we have to use to get our jobs done, but we sometimes spend months waiting for access, or we have access and then Google decides to switch to a different tool.

"The main catalyst to pursue a contract was when our jobs were completely changed from being technical writers to being AI trainers, without much warning. Almost every single day, they'd give us a new version of the tool with a different set of features and we had to learn the tool all over again from scratch. The rules we followed yesterday would suddenly be the opposite today. We did that for three months."

Through the collective bargaining process, Tahlia and her coworkers codified protections and secured a voice with management on how they use technology and how technology is being used on them.

"A lot of us have worked in tech before, so we know how employers can track workers without us knowing. Even Accenture had to check what tech was being used on us. Our contract includes prohibitions on keystroke and mouse monitoring software as well as allowing us to keep our cameras off during the workday.

"Our contract also gives us quarterly meetings with management specifically to talk about tech tools. It's awesome that we have these meetings because they help our managers remember the problems with the tools, and encourage them to be accountable to us, instead of just trying to make Google happy. So often, Google is trying to do something new and different every single day, and that means our voices can get drowned out.

"OUR CONTRACT INCLUDES PROHIBITIONS ON KEYSTROKE AND MOUSE MONITORING SOFTWARE AS WELL AS ALLOWING US TO KEEP OUR CAMERAS OFF DURING THE WORKDAY."

"Having a dedicated meeting also helps build our managers' respect for us. They hear us asking intelligent questions that demonstrate our expertise and they realize how much we understand our work.

"We have a lot of AI tools that we've needed to push back on. We're not opposed to using AI, but if the results are taking extra time for us and are not even close to as good as what we can manually write, then that's a problem. We need them to listen to our feedback on which tools help our work and how we can improve ineffective tools."

At the same time, Tahlia noted how difficult it is to win protections for contract workers, a widespread arrangement in the tech industry.

"We started out with a much more comprehensive proposal. We wanted broader protections. We wanted a list of all the tools that run on our computers so we could address any privacy concerns. But it turned out that since we were only

bargaining with Accenture, Accenture didn't have insight about the Google tools and wouldn't ask Google for that information."

For other workers interested in organizing to gain greater agency over workplace technology decisions, Tahlia shared this advice:

"Everything starts with communication. You need a system for communicating between yourselves and management.

"I have tried to change a lot of things in my workplace on my own. While it sometimes only takes one person, you'll often get pegged as the squeaky wheel. Sometimes, the more one person speaks up, the more they get tuned out. Our strength comes from creating a big, unified group."

"WHILE IT SOMETIMES ONLY TAKES ONE PERSON, YOU'LL OFTEN GET PEGGED AS THE SQUEAKY WHEEL... OUR STRENGTH COMES FROM CREATING A BIG, UNIFIED GROUP."

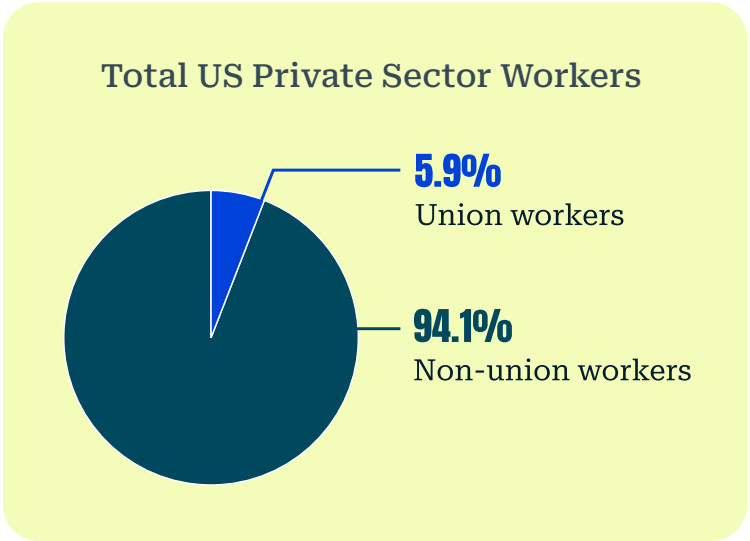


VOICE MODELS FOR WORKERS NOT YET IN UNIONS

Mechanisms that create room for collective action when there are barriers to unionization

While unions give workers the most enforceable way to influence technological change in the workplace through legally binding contracts, only 5.9% of all private sector U.S. workers were unionized in 2024, leaving the vast majority of workers in the United States outside the protections of union contracts.[42]

Additionally, certain categories of workers, such as agricultural workers, domestic workers, and independent contractors, are excluded from the protections of the National Labor Relations Act. When it comes to employment within the tech industry itself, previous TechEquity research has shown how contract and temp workers are more likely to be Black,



Indigenous, Latinx, Asian, women, and nonbinary people than those hired in the direct workforce.[43]

Given the speed of emerging technological adoption across industries in our current AI boom, the lack of worker involvement, and the resulting worker dissatisfaction, workers who don't yet have a union are also pursuing ways to engage with these changes.[44]

Other institutional models that provide opportunities for more workers to exert influence over designing, improving, and in some cases, refusing workplace technology, may help open up space for workers to exert agency over the rapid technological change occurring across industries. Importantly, collective action, even by workers not yet in unions, is protected for workers covered by the National Labor Relations Act in the same manner as formal union activity. The most effective application of these models would help foster a democratic and participatory culture amongst workers—and could act as a stepping stone to unionization.

PRE-MAJORITY UNIONS

A pre-majority union (also known as minority union, solidarity union, non-contract union, or open union) is a type of worker collective where workers act together to improve their working conditions but have not yet won formal union recognition or negotiated a contract with the employer.[45]

The Emergency Workplace Organizing Committee (EWOC), an initiative of the Democratic Socialists of America (DSA) and United Electrical, Radio, and Machine Workers of America (UE), advocates for the creation of pre-majority unions and has created a report and a companion repository of information about pre-majority unions that outlines the advantages as well as the potential challenges of this model of collective worker voice.[46] [45] [47]

The Alphabet Workers Union (AWU) is an example of a pre-majority union that was created by Alphabet workers with support from the CWA. The AWU is a pre-majority union that is inclusive of both full-time and temporary, vendor, and contract (TVC) workers who work on Alphabet products.[48] The full-time employees have organizational power and greater protection from labor laws. The inclusion of temporary and contract workers energized organizing and gave AWU the associational power needed to win real gains.[49] Pre-majority unions are also a critical tool to push back against harmful workplace technologies because they have the potential to act quickly to leverage workers' discontent regarding worsening working conditions.

WORKER CENTERS

Worker centers are grassroots, community-based organizations that support and organize low-wage workers who may not be union members or are excluded from labor law protections.[50] Since they are not legally labor organizations that represent workers with respect to their employers, worker centers are able to avoid some rules, such as restrictions on boycotts and pickets.[51] As a result, direct action against employers at worksites is a key strategy used by worker centers.[52] Being guided closely by their membership bases also allows worker centers to be agile and flexible in responding to emerging problems.[50]

There are examples of worker-focused nonprofit organizations specifically addressing workplace technology issues. PowerSwitch Action, Gig Workers Rising and the National Network for Immigrant and Refugee Rights co-authored a comprehensive popular education toolkit titled "Building Worker Power in the Digital Age" that contains a series of training modules "to facilitate worker- and community-based discussions, strategizing, and power-building on workplace and social justice issues that intersect with work and technology".[53] [54] [55] [56] Similarly, organizations like Coworker.org have created digital tools that allow dispersed groups of workers to form networks and launch campaigns for workplace improvements, including the long-lived tactic of the petition.[57]

Further, there are now strong connections between worker centers and unions with joint organizing and policy campaigns, as well as affiliation models whereby worker centers become formally associated with unions.[58]

The achievements of worker centers have far outweighed their limited resources. This worker voice model is not without drawbacks, however. Worker centers depend on funding from foundations and other such sources rather than dues-paying members, making them susceptible to priorities that come from above and a lack of a stable flow of resources.[59]



WORKER VOICE MODELS SPECIFIC TO DIGITAL TECHNOLOGIES

Mechanisms that introduce worker voice at every stage of the tech lifecycle

The institutional mechanisms of worker voice above represent the most proven and effective strategies for ensuring that workers can exercise a collective voice in ways that structurally address the power dynamics in the workplace. As Anner and Fischer-Daly note, there are several other models, tactics, and processes that may be effectively leveraged, particularly in situations in which "the exercise of worker voice via democratic and empowered trade unions is inhibited or blocked."[19]

The models below are also responsive specifically to the unique opportunities and challenges of the tech development lifecycle. Needless to say, these work best when supported by worker collective power and when complemented by unions in strengthening worker voice.

WORKER DATA RIGHTS AS LABOR RIGHTS

Algorithmic systems and AI models are ultimately built on top of data that is collected from workers. Workers generally have no insight into how—and even whether—decisions are made using their data, creating a vast information and power imbalance between employers and workers. As such, data rights no longer represent only individuals' right to privacy, but are more appropriately thought of as labor rights that are necessary for workers to collectively have oversight of how information about them is collected and used.[60]

Some worker voice mechanisms aim to ensure that workers have agency over how their data and work product is collected and used, for example, in training AI or automated decision-making technology.

- The Author's Guild, a professional organization for writers, has entered into a partnership with Created by Humans, a platform that enables licensed usage of books by AI companies.[61] [62] Through this partnership, writers can retain control of their work and be credited and compensated for its use.
- The Model Alliance, a nonprofit research, policy, and advocacy organization, won protections for models in New York state around the use of their digital replicas through the Fashion Workers Act.[63]
- Collaborations between workers and researchers at universities, such as the Workers' Algorithm Observatory, have also produced several tools that seek to hand control over data back to workers.[64]
    - The Shipt Calculator was designed to use data collected from workers to create transparency into the pay algorithm used by the delivery service Shipt.[65]
    - FairFare is an app that aims to understand how much of drivers' fares are taken by ride-hailing companies.[66] It was developed by WAO in collaboration with drivers from Colorado Independent Drivers United (CIDU) and Rideshare Drivers United (RDU).
- The Driver's Seat Cooperative, where gig workers used a custom-built app to collect data from their Uber and Lyft rides, was an adaptation of the cooperative model to workers' data.[67] [68] This data helped workers increase their pay, as well as track their miles, fares, and working time. Aggregate data from the app was also used by gig workers' unions to build cases for worker protections.
- Workers can also establish data rights at work through privacy legislation like the California Consumer Privacy Act (CCPA) that addresses the links

between surveillance, data collection, and the use of data to make life-altering decisions about workers, along with other constituencies.[69] The CCPA strengthens worker voice by giving workers the right to know when their employer collects data about them, the right to correct and delete this data, and the right to opt out of the sale or use of this data by their employer. The CCPA also includes provisions that allow workers to designate an authorized agent, like a union or worker center, who supports their data requests and helps analyze their data. The UC Berkeley Labor Center has developed a toolkit that enables workers to learn about their rights under the CCPA and know how to exercise them.[70]

WORKER VOICE IN THE DESIGN, DEVELOPMENT, AND DEPLOYMENT OF TECHNOLOGY

While there is little debate among worker advocates that the voices of those impacted by algorithmic and AI tools ought to be included in designing these systems, there are many ways to understand and implement such inclusion.[71]

There are cases in which public sector employers, responding to employee demands, have established multistakeholder task forces or governance boards that include formal representatives of employees, particularly in relation to the use of AI. For example, the US Department of Labor established an AI Governance Board which included union partners to determine the agency's use of AI within its internal workflows.[72] SEIU Local 668 negotiated an agreement with Governor Josh Shapiro in Pennsylvania and OpenAI that establishes a Generative AI Labor and Management Collaboration Group that places employees in the decision-making process around the use of generative AI in state departments.[73]

To ensure that workers benefit from these task forces, employers have to:

- Privilege workers as the key source of information to identify the problems that need to be addressed, rather than using a top-down approach to find use cases;[11]
- Ensure that technological solutions and work processes are co-designed with workers rather than being imposed on them;
- Train or retrain workers to use the new technology;
- Continue to engage workers by involving them in work redesign, a task for which they are best suited and which can also help them safeguard their jobs.

It is also important to recognize that while worker participation in the development of AI and algorithmic systems in private labs or enterprises has been encouraged, it has been difficult to achieve. Studies have found that attempts at integrating participation tend to be unsuccessful because of the precedence given to the business purpose over public good and the potential for using participation to extract information to drive profits.[74] [75] To avoid being exploitative, participation should be treated as work by enterprises and labs that invite communities to collaborate with them.[18] At the same time, substantive worker participation that goes beyond token inclusion is not possible without recognizing the value of their work and guaranteeing their labor rights.[76]

Additional resources developed by advocates that may be useful to groups of workers seeking to question management and build knowledge include:

- The Why Not Lab has developed a set of 27 questions that workers can ask or include in CBAs to compel management to keep workers informed and to create accountability without having to rely on technical knowledge which workers might or might not have.[77] [78]
- The Center for Democracy and Technology (CDT) and Coworker.org conducted a project based on Deliberative Polling® (Deliberative Polling® is a trade mark of James S. Fishkin) where workers' preferences on workplace surveillance were gathered after they were given resources to educate themselves and participate in discussions with each other about workplace data collection tools and processes.[79] [80] [81] Pre- and post-deliberation surveys revealed that workers became more inclined to question the use of surveillance technology and were also more confident about their ability to influence their employers' actions.
- The Design Justice Network similarly puts marginalized groups at the center of technology design.[82] The Network advocates for acknowledging and integrating existing knowledge, involving communities in non-exploitative ways, and prioritizing community needs over the intentions of the designer.[83]

IMPACT ASSESSMENTS

With the emergence of ADMTs and AI, and their potential to create widespread harms that can be difficult to anticipate, impact assessments are mechanisms that can create guardrails and introduce the needs of affected communities into the design of such systems.[84] In this context, algorithmic impact assessments (AIAs) can be used to:

- Ensure that the designers of these systems are obligated to think systematically about potential harms and address them before systems are implemented;[85]
- Create accountability by keeping records of how systems were designed and what decisions were taken during and after implementation.

Resources that enable wider participation in AIAs are important to ensure transparency and accountability in algorithmic systems.

For instance, a toolkit known as AEKit developed by ACLU Washington in collaboration with the Tech Fairness Coalition consists of four sections designed to demystify technology and encourage involvement:[86]

- A flowchart for identifying whether a given technology is or relies on artificial intelligence;
- A questionnaire for interrogating the algorithmic harm and bias dimensions of a given technology;
- A worksheet for disentangling the intended purposes of a given system from ways that it can be misused; and
- A system map and definitions for understanding novel technical terms and how they combine to constitute an automated system.

However, it is worth noting that meaningful participation of vulnerable communities is challenging to achieve.[87] Further, this tool is designed for assessing impacts of a technology, rather than providing workers with the agency to decide how or whether a technology will be used at all.



WORKER VOICE MODELS BEYOND THE WORKPLACE

Mechanisms that engage state and corporate actors to enhance worker voice

Policies and decisions that impact workers are made not just in workplaces, but in legislatures and boardrooms. Relatedly, worker voice is not confined to channels exclusive to the workplace. Workers can make their voices heard through policy and regulation at the local, state, and federal level, as well as through popular pressure in broad-based coalitional campaigns.

REGULATORY OR POLICY-BASED VOICE MODELS

Governments have an important role to play in addressing the imbalance in power and resources between workers and employers by creating baseline protections and preventing the most egregious instances of workplace technologies. Additionally, the most effective policies are backed by worker organizing to ensure that the guardrails themselves are robust and that enforcement is effective. Unions often co-sponsor or support such legislation. Workers who are not yet unionized can also amplify their voice by organizing to advance policy mechanisms that create a strong floor for workers' technology rights, which can also open up more space for workplace organizing.

Cities have come together to promote responsible use of AI in the public sector through the GovAI Coalition.[88] States and cities around the country have also begun to pass laws to protect workers from the effects of algorithmic and AI tools.[89] [90] The UC Berkeley Labor Center has created a policy guide that provides a comprehensive round-up of bills and concepts.[91]

Examples include:

- A number of Warehouse Worker Protection bills have been passed in multiple states that give workers access to their data and mandate disclosure of algorithmically determined productivity quotas.
- The Automated Decision Safety Act (AB 1018) and SB 7 from California aim to strengthen worker voice by placing hard law requirements upon employers to make disclosures about the use of automated decision-making; empowering workers to opt out of such systems; and providing the right to correct or appeal the outcomes of decisions made by these systems.[92] [93] [94]
- Legislation that ensures workers retain autonomy and control over their work, making it less likely that they will be replaced by automated technologies, such as a California bill that gives healthcare workers the discretion to overrule an algorithm if they judge that doing so is in the best interest of the patient.[95] Most such bills contain provisions that mandate that employers have to consult workers when implementing workplace technology that can have consequential impacts on workers, thus bringing worker voice into the process of deployment.
- Regulations that aid worker voice by preventing invasive surveillance, such as an unsuccessful California bill on workplace surveillance tools (AB 1221) as well as AB 1331, which would prohibit employers from using surveillance tools in off-duty areas.[96] [97]
- Legislative efforts in Washington and California have sought to clarify that technology is a mandatory subject of bargaining in the transit sector.[98] [99]

At the federal level, the Department of Labor under President Biden developed "Artificial Intelligence and Worker Well-being: Principles and Best Practices For Developers And Employers," which was noteworthy for centering worker empowerment as "the North Star" to guide AI development.[100] These principles have since been removed from the webpages of the Department of Labor, underlining the vulnerability of guidelines that are not backed up by hard law requirements.

ADVOCACY-BASED VOICE MODELS

Unions and worker organizations, in alliance with community groups, consumers, socially responsible shareholders, and other allies, have a long history of using multi-faceted coalitional campaigns to win change for workers from major corporations. Corporate campaigns are usually based on extensive research and power analysis and can include tactics like investor engagement, regulatory intervention, political action, public critiques that raise reputational risks, and broad coalition building among impacted stakeholders. The Interfaith Center on Corporate Responsibility (ICCR)'s Advancing Worker Justice program connects shareholder advocates and worker-led organizations and has recently focused attention on how shareholders can partner with worker advocates to bring workers' perspectives on the impact of digital technology directly to executive leaders.[109] [110]

Outside of union campaigns, this strategy remains underexplored in relation to workplace technology; however, there is potential that corporate campaigns and related advocacy campaigns could help support worker agency.[19]

There is clear evidence that workers across employers and industries share similar concerns and are impacted by related harms when they are subject to shared vendor technology.[111] [112] Meanwhile, tech companies are often vulnerable to negative media coverage and popular pressure when they announce particularly egregious new features.[113] [114] [115] Corporate campaigns that surface shared demands related to common enterprise tech vendors have the potential to spark new workplace organizing and unite workers across employers and industries.

THERE IS CLEAR EVIDENCE THAT WORKERS ACROSS EMPLOYERS AND INDUSTRIES SHARE SIMILAR CONCERNS AND ARE IMPACTED BY RELATED HARMS WHEN THEY ARE SUBJECT TO SHARED VENDOR TECHNOLOGY.

Cities can also support worker voice in addressing the impacts of technology at work, as was seen in Seattle's Transport Network Company Driver Deactivation Rights Ordinance (this ordinance was eventually preempted by the Expand Fairness Law - HB 2076) which was developed in response to automated deactivations of rideshare drivers without explanation or recourse.[101] [102] The ordinance established a Deactivation Appeals Panel where drivers could appeal their deactivations.[103]

Importantly, the city offered assistance to drivers in the form of education and outreach about rights, culture, and language-specific services, and free skilled representation from the Driver Resolution Center.[104] The Driver Resolution Center was created by the city's Office of Labor Standards and the contract to run it was granted to the Driver's Union, which organizes drivers and is deeply rooted in worker communities.[105] The Driver's Union is affiliated with Teamsters Local 117, which supports it to carry out advocacy, outreach, training, and legal representation. A study found that drivers were able to get their deactivations overturned in 80% of the cases where they had representation from the Driver Resolution Center.[106]

Workers empowered through the campaign to push back against deactivations went on to participate in fights for minimum wages in Seattle and then statewide. This resulted in the Expand Fairness Law (HB 2076) which entitled Washington state ride hail drivers to a pay raise, the permanent right to paid sick leave, workers' compensation benefits, and protection against unfair deactivation.[102] [107]

Similarly, Seattle's App-Based Worker Deactivation Rights Ordinance provides strong protections to all app-based workers.[108] It makes some types of deactivations unlawful, mandates that companies provide deactivation policies, follow set procedures to deactivate workers, provide notice before deactivation, and develop a process for workers to challenge deactivations. Government support was thus able to set in motion a virtuous cycle that resulted in strong protections for workers against the arbitrariness of algorithmic management.



INDIVIDUAL WORKER VOICE MECHANISMS

Mechanisms that channel individual worker agency

Workers also use their voices individually through processes like requests for review, anonymous complaints through official government or company channels, whistleblowing, and more. Such mechanisms are inherently weaker than collective voice models since they rely on individual workers to take action in a highly asymmetric power relationship.

Despite the structural disadvantages they face, workers do find individual ways to resist the technologies that employers impose on them. From small acts of defiance against tools that capture their every movement, to sabotage and even quitting, workers have never been quiescent adapters of workplace technologies.[116] [117] A recent study of employees and managers in companies that are actively using AI found that nearly 41% of Gen Z and Millennial employees had engaged in some form of sabotage against the newly introduced AI tools.[118]

Nevertheless, it is important to recognize that individual acts of resistance are almost always accompanied by significant risks for workers.[119] Only protective measures backed up by hard law requirements can make such actions truly impactful. While they may not result in systemic change, these actions indicate that many workers are seeking a different kind of relationship with workplace technology, and these desires could be channeled into effective worker voice mechanisms.

CONCLUSION

Technological advancements have brought us to a world where data collected through intrusive surveillance at the workplace and beyond is used to make life-changing decisions about workers' livelihoods. At the same time, workers find themselves training their technological replacements, picking up the slack for failures of technology, or even being replaced by technology, only to be rehired on contingent terms of employment. And yet, this is far from the first and unlikely to be the last wave of technologies to threaten working people.

Workers can push back by recognizing that the direction of technological change is not inevitable. Building worker power is critical for workers to serve as a countervailing force that can determine which technologies are prioritized and how they ultimately enter the workplace. Worker power, in turn, is built through empowering worker voice. Technology can benefit workers if workers are truly able to influence its development and use.

The unprecedented reach and scope of workplace technologies already affect or have the potential to affect workers across occupations and geographies. As a result, by degrading work across vast swathes of the global workforce, these technologies have also created shared material conditions amongst workers. As work quality deteriorates for all workers, divisions based on skill, employment status, and industry become fainter—coders forced to use AI to improve productivity begin to feel much like warehouse workers whose targets have increased tenfold with the use of technology, while wages remain the same.[120]

However, discontent in itself, as widespread as it may be, cannot lead to structural change. Worker voice mechanisms such as those discussed in this paper can enable workers to channel their discontent—and in some cases their excitement and energy—to create structures that ensure that technology actually benefits workers and their communities, not just in this wave of technological adoption but in future ones as well.

The various voice mechanisms outlined here aim to place workers' needs at the center of technological development. This approach recognizes that workers are at the frontlines of technological adoption and therefore can and should shape how technology is conceptualized, designed, deployed, and used in the workplace. The gains that emerge when workers have a say in technological adoption are not limited to workers alone. Consumer welfare can be enhanced through better and safer services and businesses can thrive by making productive use of new technologies.[121] [12] Bringing worker voice into the technological conversation is thus important not only for protecting workers' rights, but also for ensuring that new technologies lead to beneficial outcomes for society at large.

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Lead Author
Swati Chintala

Contributors
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